

THE COMPARATIVE RECEPTION OF SCIENTIFIC NATURALISM
IN GREAT BRITAIN AND THE ARAB WORLD, 1860 - 1930

by

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ON TRANSLITERATION

In general, I have attempted to find accepted English expressions for the Arabic words that appear in this thesis. Where this has not proved possible I have followed, with some slight variation, the method recommended in the Journal for the History of Arabic Science (vol. I, November, 1977, P.330) which is itself drawn from the Encyclopaedia of Islam. The English apostrophe indicates the Arabic glottal stop and the omission of a letter in a word as well. While I have included the Arabic title of the periodical material along with its English equivalent in the bibliography, I have confined myself solely to the English expression throughout the text.

PREFACE

With the emergence of evolutionary theory in the second half of the nineteenth century relations between Man and Nature came to be thought of in entirely new ways. The influence of this new phase of scientific thinking on literature and philosophy was profound and widespread. Its consequences are still being explored to this day. This is hardly surprising because developments in the natural sciences, and, in particular, the biological sciences, affected ways of thinking about the origins of man, his faculties, and his moral life which were in striking contrast to traditional modes of thought in Christian and Islamic theology and metaphysical philosophy.

My purpose in this study is to analyse the impact of scientific naturalism on certain religious and moral issues, and to explore the reactions of certain writers who took part in the debate over these issues in both Great Britain and the Arab World. My interest in moral and religious issues springs from the fact that any literary or philosophical contribution is often valued by its presentation of these objects, though methods of criticism and evaluation usually seek fresh expression with the appearance of new doctrines - as is the case with scientific naturalism.

Throughout my reading of English and Arabic sources I have found that the authors who tackled the impact of science in the Arab World at the time concerned, are of two kinds: first, those who concentrated on political and social issues, particularly the movements of pan-Islamism or pan-Arabism; and secondly, those who discussed these issues as a part of historical surveys of secular thought. My study of the topic differs from both of the above treatments in two ways:

first of all, it shows the Arabic response to European science and philosophy, and secondly, it reveals Western influence on the Arab intelligentsia who introduced European thought. This study coincides with recent interest in Oriental and Islamic studies in the West.

My analysis deals with the reception of scientific naturalism as an alternative doctrine to Christianity and Islam, and with the role of certain intellectuals who devoted themselves to exhibiting the new doctrines in leading periodicals in Britain and the Arab World. These intellectuals based their views on secular philosophy and the theory of evolution. They constitute the spokesmen of pure scientism, Positivism, and Utilitarianism in Britain, while in the Arab World they are the men of letters, physicians, and free-thinkers. Arab writers belong, more or less, to similar groupings, with the exception of Positivism in its strict sense.

Christian and Muslim theologians responded to scientific naturalism either by compromising between the old and the new doctrines, or by rejecting them altogether. The themes of this thesis include the problems of Providence, creation, immortality, the origin of man, his nature, mental and moral faculties, as expounded by the disputant doctrines. However, the arguments which constitute the body of this work have been placed primarily in a framework of two conflicts, religious and moral.

The thesis is divided into two sections. The first is assigned to English writers, and the second to the Arab authors. Among English intellectuals, T.H. Huxley, John Tyndall, Herbert Spencer, Frederic Harrison, the Duke of Argyll, and others are taken as representative examples. Similarly, Ya‘qūb Ṣarrūf, Shibli Shumayyil, Jamāl ad-Dīn al-Afghāni, Jamīl Sidqī az-Zahāwī, Muḥammad ‘Abduh, Isma‘īl Maḥzar, and

Salama Musa, are taken as illustrating Arabic thought. In the Arabic section, I have confined myself to examining the scientific literature which appeared in Syria (which is taken to include Lebanon, Jordan, and Palestine), and Egypt, where the impact of the West first took place. J.S. az-Zahāwī represents secular thought in Iraq. The contributions of other Arab countries to this debate seem to have been only slight.

In order to draw a clearer picture of the scientific movement in both Britain and the Arab World an historical chapter precedes each section. Two other similar chapters are assigned in each section: one to the conflict between science and religion, and the other to the old and new concepts of morality. The concluding chapter summarizes the movements in the countries concerned, provides a comparison between Western and Eastern writers, and underlines the consequences of the treatment as a whole.

The English material which makes up the debate has been drawn mainly from The Westminster Review, The Fortnightly, The Contemporary Review, The Nineteenth Century, and others. The Arabic material has been taken from the following periodicals: al-Muqtataf, al-Hilāl, aj-Jāmi'a, al-Manār, Thamarāt al-Funūn, and al-Mashriq. Many of the editors of these periodicals themselves played an active part in the written debates published under their auspices. An account has been given of the English periodicals in footnotes, while information about the Arabic periodicals appears in chapter four which serves as an historical introduction to the second section of this work.

With the exception of the historical chapters, in which moving backwards and forwards is unavoidable in order to elucidate and understand the relevant circumstances of tradition and culture, the

thesis extends over the period between 1860 and 1930. Biographical sketches of the Arab writers is included in the historical chapter of the second section in order to make the study clearer for the non-Arab reader.

Much of the material in the first section of this work may well be familiar to the English reader, but its presence is to be explained not only as a sine qua non of a comparative analysis but also by the fact that much of the information portrayed is not so readily accessible to the contemporary Arab reader.

C H A P T E R O N E

The Appearance of Scientific Naturalism in Great Britain: A Historical
Background

Though the idea of evolution had been mooted by ancient philosophers among the Greeks, the Romans, and the Arabs long before Charles Darwin, the doctrines of special creation, the fixity of species, and the wisdom of providence were universally accepted on metaphysical grounds.

The Romantics of the earlier nineteenth century stimulated the Victorian response to nature. Romantic responsiveness to nature became, among the succeeding generations of natural scientists, an embracing devotion to the facts of natural phenomena. For poetic visions of daffodils, nightingales, and the universe, naturalists substituted plant classification, the study of fossils, and microscopic research. Although the Romantics worshipped the beauty of nature, they isolated man from other creatures, mainly because of his unique intellectual faculty.

My purpose in this introductory chapter is to present a brief outline of the historical background underlying the development in scientific thought that culminated in the appearance of Darwin's Origin of Species in 1859. Furthermore, I intend to discuss the reception of this work, from its earliest stages, by the contemporary scholars who belonged to many different schools of thought. Several distinguished scholars were exploring the various fields of science, philosophy, and industry¹ in England during the years 1830 - 1860. Indeed, this period has been described by John Morley (1822 - 1894) as "The age of science",²

1. For the progress of science and industry Walter E. Houghton cited Huxley's article on "The Progress of Science 1837 - 1887", Methods and Results P.42; The Victorian Frame of Mind 1830 - 1870 (New Haven and London: Yale U.P., 1972, P.5.

2. Ibid., P.11.

and by John Stuart Mill (1806 - 1873) as "an age of transition"¹.

Referring to this state of transition and citing Thomas Arnold (1795 - 1842), the earnest Headmaster of Rugby School, Walter Houghton pointed out that:

"By 1838 Thomas Arnold had noticed a new "atmosphere of unrest and paradox hanging around many of our ablest young men of the present day". He was speaking not merely of religious doubts but "of questions as to great points in moral and intellectual matters; where things which have been settled for centuries seem to be again brought into discussion".²

This atmosphere, however, was also present and commented upon in the writings of many leading scholars of the time, particularly by Thomas Babington Macaulay (1800 - 1859), Thomas Carlyle (1795 - 1881), and John Stuart Mill (1806 - 1873).

One of the most important sources of scientific knowledge which, in part, revived discussion on the subject of creation in the 1830's was Charles Lyell's Principles of Geology (1830 - 1833). It was followed by Robert Chambers' Vestiges of Creation (1844) which presented a utopian picture of evolution, an attempt which also revived the old metaphysical naturalism. It must be seen undoubtedly as a precursor to Darwin's work. Moreover, the essential philosophy of this period was epitomised in Lord Tennyson's poem In Memoriam (1850). My concern with the poem stems from the fact that it admirably portrays the debate on the fundamental questions of life before the appearance of Darwin's theory, an examination of which questions will constitute the body of my thesis. No doubt the arguments of the Principles of Geology and Vestiges of Creation must have furnished the poet with the contemporary attitudes and ideas concerned.

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1. Ibid., P.1-2, cited from The Spirit of the Age, ed. F.A. Von Hayek, Chicago: 1942, P.67.
 2. Ibid., P.8 (Houghton cited a letter appearing in A.P. Stanley's The Life and Correspondence of Thomas Arnold, London: 1904, P.484).

An acquaintance with Darwin's theory should reveal two salient facts: firstly, that it was founded on the scientific methods of deduction and induction, basic requirements for all scientific investigation, and secondly, that it utilised the discoveries of various sciences, particularly geology and natural history, which made the admission of evolution feasible. Scientific methods and researches were encouraged by secular philosophers in England and on the Continent. Positivists were the first to advocate the rule of the sciences as a substitute for the metaphysical, even before the school of scientism itself. Therefore, my inclusion within this study of an account of positivism may be justified partly because this system of philosophy proclaimed the establishment of human knowledge and the improvement of man's condition to be based upon scientific foundations, and partly because the significance of the positive sciences was first presented to the English public, mainly in the early 1850s, that is during the period preceding Darwin's hypothesis of evolution, by George Henry Lewes, Harriet Martineau, and George Eliot, and that the English positivists were, in any case, involved in the controversies that form the basis of my investigations.

It will be relevant, then, to see how facts drawn from the study of geology and natural history were allied with scientific and philosophic conclusions to produce a scientific naturalism which manifested itself in the appearance of the evolutionary theory of species.

In my terminology, the phrase "Scientific Naturalism" should be taken to mean the literature of the scientists, positivists, free thinkers, and theologians who participated in the debate of the life science. This literature was a feature of many well known

periodicals¹ that appeared in the latter half of the nineteenth century in Britain. The term 'scientific naturalism' is significant because it includes the contributions of almost all the schools of thought that existed at the time, and although the terms naturalism, positivism, liberal thought, scientism, and rationalism have something in common, I do not feel that they are as inclusive as scientific naturalism.

The term 'naturalism', for example, while a generally inclusive term, deals with too many non-scientific elements², and I intend to study these arguments only in so far as they form a response to a scientific approach or application. Therefore, we must view the rational-scientific argument as the central theme of our study, and the response of literature or emotion, for example, as peripheral to this. It could also be argued that the term 'naturalism' is so inclusive as to be virtually worthless for the purpose of academic search.

Positivism and rationalism sometimes exclude scientism because of their philosophic rather than scientific tendencies. Moreover, positivism adopted science as a vehicle for its system of philosophy. Apart from this, it must be acknowledged that positivism was not so popular as to be able to embrace the whole naturalist movement. For F.M. Turner, "Positivism cannot serve because of Huxley's vehement antipathy to the sect and because in England positivism was simply one part of the larger effort to advance science in the public form".³ It would, however, be more logical to argue that positivism cannot serve because

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1. A brief description will be given in the footnotes when the name of the periodical concerned is first mentioned.
 2. Walter E. Houghton refers to 'naturalism' as a philosophical conception or a literary term; The Victorian Frame of Mind, op. cit., pp.288-9, 303, 420.
 3. F.M. Turner, Between Science and Religion (New Haven and London: Yale U.P., 1974) P.11. In fact, I am indebted to Mr. Turner from whom I have borrowed the term "scientific naturalism".

of its slow development and the small number of its advocates in England compared to the exponents of the scientific discipline, not because of Huxley's antipathy which has nothing to do with the denotation of the term.

Secularism and free thought are not precise terms, and in any case, they often tend to refer solely to the application of the scientific movement to education and politics which are not our concern here. Moreover, 'scientific naturalism' is to be preferred when analysing the contributions of Arab writers because there were no scientists, naturalists, positivists, or utilitarians in the strict sense of the word in the Arab world of the time.

II. THE PRINCIPLES OF GEOLOGY

Charles Lyell's work entitled Principles of Geology, which first appeared in three volumes in 1830 - 1833, threw light on the history of earth and its constitution. Lyell held that species were stable entities and it was possible for them to be extinguished, but not transmuted. He attributed their extinction to two factors: first, the physical changes in geological processes, secondly, the relationship of a species with another on which the life of one depended. His view of animal adaptation to the environment was, as L.G. Wilson said, deeply affected by Lamarck's work entitled Philosophie Zoologique (1809) which was read by Lyell in 1827.¹ In this work Jean Baptiste de Monet Lamarck (1744 - 1829), the French naturalist, illustrated the principles which governed the reaction of organisms to their environment. Probably it is worth quoting here Lamarck's principles by which he explained his trans-

1. L.G. Wilson, Sir Charles Lyell's Scientific Journals on the Species Question, (U.S.A: Yale U.P., 1970), "Introduction", p. xxvi.

mutation theory, for they provoked interest and controversy between Darwin and some of his opponents such as Samuel Butler in the later decades of the nineteenth century.

H. Graham Cannon, professor of zoology at Manchester and Fellow of the Royal Society, stated that in 1815 Lamarck presented his evolutionary views in four laws: -

- First Law: Life, by its own force, tends continuously to increase the volume of every living body and to extend the dimensions of its parts, up to a limit which it imposes.
- Second Law: The production of a new organ in an animal body results from a new need (besoin) which continues to make itself felt, and from a new movement that this need brings about and maintains.
- Third Law: The development and effectiveness of organs are proportional to the use of those organs.
- Fourth Law: Everything acquired or changed during an individual's lifetime is preserved by heredity₁ (generation) and transmitted to that individual's progeny.

1. H. Graham Cannon, "What Lamarck Really Said", Proceedings of the Linnean Society of London, vol.168, (1957), p.74. Lamarck, in his book Zoological Philosophy, had previously presented his views on naturalism in the form of two laws:

First Law: In every animal which has not passed the limit of its development, a more frequent and continuous use of any organ gradually strengthens, develops and enlarges that organ, and gives it a power proportional to the length of time it has been so used; while the permanent disuse of any organ imperceptibly weakens and deteriorates it, and progressively diminishes its functional capacity, until it finally disappears.

Second Law: All the acquisitions and losses wrought by nature on individuals, through the influence of environment in which their race has long been placed, and hence through the influence of the predominant use or permanent disuse of any organ; all these are preserved by reproduction to the new individuals which arise, provided that the acquired modifications are common to both sexes, or at least to the individuals which produce the young.

These two laws appeared as three and four in his later version. Zoological Philosophy translated by Hugh Elliot (New York and London: Hafner, 1963), p.113.

No doubt, Lamarck's studies of fossils, his collection of shells, and his lectures on invertebrates motivated him to devise his theory of evolution, an attempt which he could not support by sound reasoning in the face of opposition from the somewhat autocratic authorities of the Academie Francaise de Sciences, such as George Cuvier (1769 - 1832) who utterly rejected the theory of transmutation without offering an alternative.

In England, Lyell and Richard Owen (1802 - 1892), an authority in anatomy and physiology at the time, followed Cuvier's approach¹ in rejecting Lamarck's views on the question of species and the transmutation theory. Lyell's views differed from those of Lamarck in that he believed that the adaptations were "a manifestation of design in nature",² and following the Newtonian view of the eighteenth century, considered that the design of natural laws was established by God. However, the term 'biology' itself was the product of the early nineteenth century, and Lamarck was the first to use it in 1802.³ It became popular in the 1830's and was introduced into English by Harriet Martineau (1802 - 1876), a Comtist pioneer in England.

Apart from the coinage of the term, Lamarck defined the concept of biology by pointing out that:

Biology: this is one of the three divisions of terrestrial physics; it includes all which pertains to living bodies and particularly their organisation, their developmental processes, the structural complexity resulting from prolonged action of vital movements, the tendency to create special organs and to isolate them by focusing activity in a centre, and so on.⁴

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1. Alvar Ellegard, Darwin and the General Reader (Göteborg, 1958) pp. 11, 48, 53.
 2. L.G. Wilson, op. cit. "Introduction", P.XXIV.
 3. The writer of the article on "Biology" in The Encyclopaedia Britannica states: "Indeed Lamarck was the first to use the word biology in 1802", (15th Ed., 1974) Vol.X. P.617.
 4. W. Coleman, Biology in the Nineteenth Century: Problems of Form, Function and Transformation (U.S.A: John Wiley & Sons, Inc., 1971), P.2.

This definition seems to be in accord with the modern implications of this science: the organisation of living beings, their development, and their vital function within their environment. Lamarck explored many fields in his biological investigations such as the origin of species, the inheritance of acquired characters, the principle of use and disuse of the organs, and the influence of environment on the living being. Doubtless, Lamarck's biological information must have been carefully examined by Lyell during his geological investigations, for though he was opposed to the French scientist, he was not opposed to making use of his work for the purpose of his own research.

The geological investigations disclosed the existence of animal and plant remains which were found in dry lands and seas in different positions, horizontal, inclined, and vertical. The similarities of fossils in many levels of the earth and the extinction of some species suggested two things: first, successive changes in the surface of the earth, which had taken place a long time ago; secondly, the catastrophic theory in geology. Doubtless Lyell had absorbed all that had been written about fossil discoveries in France, England, and America before writing his Principles of Geology, for in an article, which appeared in the Quarterly Review* in 1826, Lyell pointed out that:

An opinion entertained soon after the commencement of the study of organic remains, that in ascending from the lowest to the more recent strata, a gradual and progressive scale could be

*The Quarterly Review: W.E. Houghton asserted that The Quarterly Review was a Tory organ which "defended the old order in Church, in State, and in Society, with varying degrees of vehemence or conciliation as party issues flared or smoldered".^a It was established in 1809 and its editorial staff for nearly 15 years consisted of J. Barrow, J.W. Croker, J. Murray, with William Gifford at the top. Distinguished men of letters such as Sir Walter Scott, R. Southey, and Matthew Arnold contributed to the periodical. It attacked the subjective and Romantic literature of the early 19th century and appreciated, or even defended, the "Lake school" criticism. According to Walter Graham's point of view, The Quarterly supported faith in Christianity against the growing doubts of contemporary generations.^b

a. Walter E. Houghton, The Wellesley Index to Victorian Periodicals 1824-1900 (University of Toronto - Routledge & Kegan, 1966), Vol.1., P.697.

b. Walter Graham, English Literary Periodicals (London: Frank & Cass Co., 1966), pp. 247 - 248.

traced from the simplest forms of organisation to those more complicated, ending at length in the class of animals most related to man.¹

In most of his statements about the theory of evolution, Lyell did not clearly show his point of view. Even his later statements of the 1860's were not straightforward.²

In the tenth edition of the Principles of Geology, Lyell incorporated Darwin's law of natural selection which became prevalent in the last third of the Victorian age. Commenting on Lyell's work, William Irvine remarked that: "The Principles are perhaps the most important link in the long, tenuous, precarious chain that leads up to The Origin of Species."³

Lyell's interest in the history of man appeared in his work entitled The Antiquity of Man which was published in 1863. This book with Huxley's Man's Place in Nature (1863) and Darwin's The Descent of Man (1871) will be studied in the following chapter.

III. VESTIGES OF THE NATURAL HISTORY OF CREATION

A book entitled the Vestiges of the Natural History of Creation published anonymously in 1844 dealt with the theory of evolution on a speculative basis. The author, who was later known to be Robert Chambers, founded his exposition of natural evolution on what was supposed to be scientific facts accumulated by the vast investigations in natural history. Chambers himself asserted the originality of his work and how

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1. L.G. Wilson, op. cit., "Introduction", p. XXIV.
 2. Ibid., p.278; Coleman's Biology in the Nineteenth Century, op. cit., P.68.
 3. William Irvine, Apes, Angels, and Victorians: A Joint Biography of Darwin and Huxley (London: Weiden and Nicolson, 1955), P.47.

it was associated with the history of nature. He said: "The book as far as I am aware, is the first attempt to connect the natural sciences into a history of creation."¹ The author presented life as it had existed on the earth in a cosmic framework which included the genesis of the solar system. The scientific speculations he exhibited rated against his belief in the special creation by God. In his closing chapter Chambers mentioned two things: first, that his purpose in writing his book was to improve "the knowledge of men, and through that medium their happiness";² secondly, that his work would stimulate many new philosophical doctrines. Perhaps, his expectations were true.

The early history of the Vestiges showed that it was widely read, vehemently denied, and warmly received. The appearance of nine editions between 1844 and 1853 proved its success. Alexander Ireland, in his introduction to the twelfth edition of the book, remarked that the 23,750 copies of the eleventh edition were sold, but he did not tell how long they took to be sold out. The eleventh edition appeared in 1860 and the next one was edited by Alexander Ireland who disclosed in 1884 the responsibility for writing the Vestiges on Robert Chambers. Alexander Ireland concentrated in his introduction on two principal points: first, that the Vestiges was unquestionably the work of Robert Chambers, secondly, that Chambers was a believer in God and Christianity.

Alexander Ireland was one of Chambers' intimate friends who knew the secret of the anonymous publication of the Vestiges. He formally disclosed the secret by assuring that he was the mediator

1. Robert Chambers, Vestiges of the Natural History of Creation, a reprint of the first edition (1844), edited by Gavin de Beer, (Leicester U.P., 1969), P.388. Hereafter cited as Vestiges.

2. Ibid., P.387.

between Chambers and his publisher, and by offering as evidence more than three hundred letters in his possession, resulting from a correspondence extended almost over twenty years. In a conversation with Chambers before the latter's death, Ireland said that Chambers told him that:

As science progressed, he was convinced that his endeavours, along with those of other thinkers, to extend the conception of the province of Law in the Universe, and to establish the Theory of Development, would become more generally appreciated - that every discovery of a new scientific truth was but a stepping-stone to something beyond, leading to a more accurate knowledge of the august laws by the Divine Mind acts in the material and moral world. He expressed his belief that this earth would never be without a succession of earnest Truth-seekers devoted to the following of truth and of the God of Truth whenever He shall lead them; and that a continued and increasing human progress was an assured certainty.¹

Most books on evolutionary theory assert that the Vestiges was the closest forerunner of Darwin's Origin of Species in Britain. Darwin himself maintained its significant role in spreading the new notion over England. Commenting on the Vestiges in his historical introduction, Darwin pointed out that: "It did excellent service in this country in calling attention to the subject, in removing prejudice, and in thus preparing the ground for the reception of analogous views."² He considered the then anonymous writer of the Vestiges to be a 'Natural theologian'. But he referred to the contradiction between Chambers' conception of immutability of species and his view of creation by two impulses: a Divine one which was imparted to every form of life, and a vital impulse by which the adaptation of the organism to its external

1. Alexander Ireland, "Introduction", Vestiges of the Natural History of Creation (1884), P.X - XI.

2. Charles Darwin, The Origin of Species, a reprint of the first edition (1859), edited with introduction by J.W. Burrow (Penguin Books, 1974), P.56.

circumstances was realized. Darwin said:

But I cannot see how the two supposed "impulses" account in a scientific sense for the numerous and beautiful co-adaptation which we see throughout nature.¹

The reception of the Vestiges was enthusiastically depicted by Alexander Ireland who tried to indicate in his examples both the appreciation and denunciation which the book received from the theologians, scientists, and men of letters. Alexander Ireland wrote:

The book was reviewed in every newspaper and magazine of the day, and within a short period after its publication it had provoked a multitude of tracts, pamphlets, essays, sermons, addresses, disquisitions, and lectures - all of them mainly hostile and deprecatory - some attacking it on scientific and others on religious grounds.²

George Combe³ and Francis W. Newman⁴ appreciated the book. In his Essay on the Constitution of Man (1828), Combe considered the Vestiges a bold speculation on the origin of man. It was attributed to many distinguished men such as Thackeray, Lyell, and even Combe himself. F.W. Newman wrote of the author of the Vestiges that "he had done much to excite inquiry, and to help on the advance of unbiased philosophical thought ... Philosophy will be freer in research, and more fertile, for his having written."⁵

Ireland said that Sir John Herschel attacked the Vestiges at a scientific meeting in London in 1845, where Chambers himself was among the audience. He also quoted Rev. Tuttitt, one of Chambers' friends, in order to reveal the clerical prejudice and hypocrisy present

1. Ibid., P.58.

2. R. Chambers, Vestiges, op. cit., edited by A. Ireland, "Introduction", P.XXI.

3. George Combe (1788-1858) was a phrenologist besides his work as a lawyer.

4. Francis W. Newman (1805-1897) was a scholar of classics at Manchester and the writer of Phases of Faith (1850) and a dictionary of modern Arabic.

5. R. Chambers, Vestiges, op. cit., P.XXIII. Quoted from F.W. Newman's review of the Vestiges which appeared in The Prospective Review of 1845-46.

in the latter's sermon at Chambers' funeral:

But certainly, in his conversations with myself, he (Chambers) ever evinced the clearest recognition of a Personal God moving, amidst His own creation, and ruling it constantly by His word.

Henry Morley in his introduction to the Vestiges, published in 1890, asserted Chambers' interest in scientific speculation, geology, and the study of man. He spoke of the prejudice by which the book was met, and the misconception of its end as well. In Morley's own words: "It was a book written by a religious, earnest man who had seen and felt the harmony of order in the works of God."² He said that the critique of both the Vestiges and The Origin of Species was based on a misunderstanding of the theories of evolution. He held that these theories "can only add strength to our sense of the infinite wisdom of the Creator"; and that the faith of those Christians who accepted them had not been affected.

In his work Just Before Darwin, Milton Millhauser ascribed the success of Chambers' Vestiges to two reasons: firstly, because the writer included "a multitude of divergent post-Newtonian facts"³ in his work, and, secondly, because it was a unique work and that no contemporary competition existed to detract from its appeal. Professor Howard E. Gruber in his recent book, Darwin on Man, similarly testifies to the success of the Vestiges by pointing out that: "By 1853 it had gone through eleven editions and sold nearly 24,000 copies".⁴ Professor Gruber attributed this success to the significance of the themes which the Vestiges contained. He remarked that:

1. Ibid., P.XXIV.

2. Henry Morley (editor), Vestiges of the Natural History of Creation, (London: 1890), "Introduction", P.7.

3. Milton Millhauser, Just Before Darwin: Robert Chambers and Vestiges (Connecticut: Middletown, Wesleyan U.P., 1959), P.117.

4. Howard E. Gruber, Darwin on Man (London: Wildhouse Ltd., 1974), P.45.

The book collected the evidence for the occurrence of evolution, advanced a theory of sorts, and covered the whole span of evolutionary possibilities: the evolution of the solar system, of the physical character of the earth, of organisms, and of man and his civilization."¹

Millhauser stated that although the Vestiges was vehemently criticised by reviewers of various schools of thought, it held its ground since it appeared in several editions and the very fact that it engendered considerable criticism from many distinguished scholars, attested to its value and furthered its popularity. He mentioned a good number of the reviewers and quoted many of them to point out the significance of the work. Among the reviewers were William Whewell (1794 - 1866), a teleologist philosopher, Thomas Huxley (1825 - 1895), the biologist, Adam Sedgwick (1785 - 1873), a geologist whose hostility towards the Vestiges was expressed in a number of invective statements: "From the bottom of my soul, I loathe and detest the Vestiges."² Charles Kingsley's review of the Vestiges in the North British Review, which was expanded, later, into a booklet called Glaucus, was critical of the theory of transmutation, although he was later to become one of the "exponents of evolution"³ attempting to reconcile the two powers, God and Nature.

Millhauser referred to Huxley's hostile attitude to the Vestiges because of Chambers' non-scientific analysis of the important questions of life, but added that Huxley later regretted his harsh review. Perhaps, because of his sympathy for Chambers, Millhauser deliberately failed to quote Huxley's severe criticism, although he highlighted Chambers' subsequent polite response to Huxley, and to the evolutionists as a whole.

1. Ibid., pp.44-45.

2. Milton Millhauser, Just Before Darwin, op. cit., P.122.

3. Ibid., P.148.

In the closing chapter of his splendid work entitled Darwin and the General Reader, Alvar Ellegard offered a comparison between the reception of the Vestiges and the Origin. He pointed out that:

In a sense the Vestiges acted more strongly on the popular mind than the Origin... The Vestiges was a popular success, but no more. No scientific authority ever came forward to support its thesis... The broad public perhaps did not realise precisely in what way Darwin was more significant than Chambers, but the stir he caused in the intellectual world showed that he was.¹

With regard to the Vestiges, Millhauser found that those with radical tendencies, although they may well have participated in the criticism of the work, such as George Henry Lewes, the free thinker, Baden Powell, the liberal clergyman who collaborated in the authorship of the Essays and Reviews (1860), and the radical contributors of The Westminster Review,² all, more or less, appreciated the book and held its author in great estimation. On the other hand, the more conservative advocates of traditional thought, both scientists and theologians, tended to be more offensive and polemical in their attacks.

Millhauser denounced the prejudice implied in Adam Sedgwick's continued attack of the Vestiges. Commenting on Sedgwick's attitude, Millhauser pointed out:

Sedgwick felt his failure; for years he made a target of Vestiges in his lectures, treating it as the archetype of that shallow materialism that brings geology into disrepute; he was still grumbling about it in his correspondence even after The Origin of Species.³

Millhauser referred to the fact that Sedgwick's criticism of the Vestiges

1. Alvar Ellegard, Darwin and the General Reader, op. cit., P.333.
2. For The Westminster Review, see P.49 of this thesis.
3. Millhauser, op. cit., P.123.

amounted to half of the latter's enormous work entitled: A Discourse on the Studies at the University of Cambridge which first appeared as "a rather school teacherly sermon" in 1833, but its fifth edition (1850) was deliberately designed to refute the evolutionary theory, particularly the principle of transmutation of species. But Millhauser indicated the bluntness of Sedgwick's refutation by remarking that "It was like a lance thrust at a flowing river."¹ On the basis of the evidence one feels one must agree with his conclusions.

Millhauser's treatment of Robert Chambers and his work is valuable in two ways: firstly, it shows, despite its popular success, how rudely Chambers' Vestiges was received by the critics, not only before, but also after the publication of Darwin's Origin of Species, and, secondly, it reveals the extent to which Chambers' speculative attempt acted as a precursor to the establishment of the scientific theory of evolution. Millhauser's admiration of Chambers can be seen in his concluding statement that:

If The Origin of Species was reviewed as Science and not as heresy, some of the credit for this change of intellectual climate must go to the clumsy stubbornness of "Mr. Vestige":.. (but) some infinitesimal part of the spirit in which free minds pursue truth today is the accomplishment of Robert Chambers.²

Probably, Millhauser's work is the most interesting and scholarly treatment on the reception of the Vestiges, and he, like Alexander Ireland, had considerable sympathy and admiration for the writer. He rightly assigns Chambers a historical place among the forerunners of scientific naturalism in Britain.

A recent valuation of the Vestiges also appeared in William Coleman's Biology in the Nineteenth Century, published in 1971.

1. Ibid., P.124.

2. Ibid., P.190.

Coleman pointed out that the books "is a bizarre, eclectic, and dogmatic work. Its author sought to trace the development of all things from cosmic nebulae to animals and man, and assigned the lot to the "sublime simplicity" of law. The Creator was, at most, an indistinct and uninteresting First Cause. In matters of organic evolution Vestiges largely reproduced Lamarck."¹ But Coleman could not ignore its vigorous influence which was not by its scientific characteristics but by its comprehensive "evolutionary issues".² At any rate, the Vestiges stimulated the interest of the naturalists and others in examining the phenomenon of life, particularly the problem of species which was worked out by Darwin's theory of natural selection. This book was followed by Tennyson's semi-religious poem In Memoriam which was also considered a close forerunner of the scientific theory of evolution because it dealt with the same issues of life in a framework of art.

IV. In Memoriam

The fact of man's conscious knowledge of his final destiny has aroused his preoccupation with the matters of his existence, origins, the nature of mortality, and the idea of immortality. For death, undoubtedly, whether ending the individual's life or depriving him of his closest and dearest company, is probably the single greatest phenomenon that faces man. It can also be the most painful reality, reducing man from his normally rational state to that of purely emotional creature, his tears expressing his weakness, and indeed frustration, when faced with a mystery, if not beyond his imagination, then, beyond his understanding. It was this state of perplexity that occupied Tennyson's mind as a result of the untimely death of his intimate friend, Arthur Hallam (1811 - 1833). A separation which was to require seventeen years to elapse before he could publicly express the loss in a philosophical work of art.

1. William Coleman, op. cit., P.70.

2. Ibid., P.71.

Tennyson met Arthur Hallam at Trinity College, Cambridge, where they were both students, from 1828 - 1830, a period during which Arthur Hallam was engaged to Tennyson's sister Emily. They were both members of a society called the "Apostles" which was founded by Frederick Maurice (1805 - 1872). This society embraced a considerable number of intellectuals who read papers and discussed a wide range of topics.¹

In 1833, Arthur Hallam went to Vienna:

To where he breathed his latest breath,
That City. All her splendour seems
No livelier than the wisp that gleams
Or Lethe in the eyes of Death. (98)²

This disaster was to be the theme of Tennyson's poem In Memoriam which went beyond its traditional limits by not only detailing the merits of the dead but also the characteristics of the period. It represented a philosophical innovation as well as an article of faith.

In Memoriam was first published in 1850, and, in many ways, documented a conflict that existed on two levels, the internal and the external. The conflict between the poet's heart and mind reflected the external conflict between traditional and naturalistic thought, an opposition which had begun with the emergence of geology, palaeontology, and natural history. However, the significance of the poem lies in the fact that its arguments represent the historical situation prior to the dispute between philosophy, science, and traditional thought that was to begin after the appearance of Darwin's Origin of Species in 1859.

The publication of In Memoriam generated a wide range of criticism, some of it, it must be admitted, was contradictory in nature.

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1. Hallam Tennyson: Alfred, Lord Tennyson: A Memoir (London: Macmillan & Co., 1897). Vol. I. P.43.
 2. Arabic numerals refer to the sections of the poem.

One group of contemporary critics, including F. Maurice and F. Robertson, regarded it as an attempt at the: "unification of the highest religion and philosophy with the progressive science of the day".¹ Other critics such as Henry Sidgwick and John Tyndall appreciated the poet's love of Nature and his interest in the then recent scientific discoveries, as well as his search for truth. An obscure critic found that the tone which underlay the poem was that of a sad "widow of a military man".²

Among the contemporary critics, Sidgwick's statements were perhaps the most prominent. In his letter, of 1888, to Hallam Tennyson about his father's masterpiece, In Memoriam, Henry Sidgwick declared that he intended to present his criticism as a historical document rather than a mere impression.³ He was to speak in his notes of the poem's effect on himself personally as well as its effect on his generation as a whole. He asserted that Clough's⁴ sceptical views were more attractive to his turn of mind than those of Tennyson. Nevertheless, he announced that, for him, the influence of In Memoriam "lay in the unparalleled combination of intensity of feeling with comprehensiveness of view and balance of judgement, shown in presenting the deepest needs and perplexities of humanity. And this influence, I find, has increased rather than diminished as years have gone on, and as the great issues between Agnostic Science and Faith have become continually more prominent".⁵

Henry Sidgwick appreciated Tennyson's defence of "honest doubt", a phrase which was to become very popular in the 1860's and after, as well as his expressed desire for a brighter future for humanity. He also referred to the phenomenon of death by saying that at a time when

1. Hallam Tennyson, op. cit., P.298.

2. Ibid., P.298.

3. Ibid., P.300.

4. Arthur Hugh Clough (1819 - 1861) was a sceptical poet who was educated at Rugby and Oxford.

5. Hallam Tennyson, op. cit., P.301.

intellectual men were looking for a basis for the belief in God and immortality, they found themselves "in the midst of the "fight with death" which "In Memoriam" so powerfully presents".¹ Sidgwick liked the manner in which Tennyson struck a balance between what he called "the lessons of science" and faith by intuition. He cites Tennyson's words which presented that equilibrium, and which are worth recording here:

If e'er when faith had fall'n asleep,
I heard a voice 'believe no more'
And heard an ever-breaking shore
That rumbled in the Godless deep;
A warmth within the breast would melt
The freezing reason's colder part
And like a man in wrath the heart
Stood up and answered 'I have felt'. (124)

This apparent defeat of reason by feeling was not Tennyson's final word on the subject, said Sidgwick, because the poet realised that it was not enough to base knowledge on feeling alone. Therefore, knowing nothing of the realities of life, the poet, like a child, appealed to his tears when argument would no longer suffice:

No, like a child in doubt and fear,
But that blind clamour made me wise;
Then was I a child that cries,
But, crying, knows his father near;

And what I am beheld again
What is, and no man understands;
And out of darkness came the lands
That reach thro' nature, moulding men. (124)

"These lines", Sidgwick remarked, "I can never read without tears. I feel in them the indestructible and inalienable minimum of faith which humanity cannot give up because it is necessary for life".² That mankind would never submit to a "godless world" was Tennyson's conviction

1. Ibid., P.302.

2. Ibid., P.303.

which led him to believe in the existence of a spiritual power which realised itself in a kind of Christianity imbued with a mystical element which enchanted the poet:

What keeps a spirit wholly true
 To that ideal which he bears?
 What record? not the sinless years
 That breathed beneath the Syrian blue: (52)

Relating Tennyson's latest statements on his belief in God, his son remarked that his father said to him a week before his death that: "I shall infinitely rather feel myself the most miserable wretch on the face of the earth with a God above, than the highest type of man standing alone."¹ However, Tennyson's faith as represented by his son included a belief in God, the soul, and the future life comparable to that of the traditionalist, though one may feel when reading the poem that the poet was, more or less, influenced by the "honest doubt" ensuing from the facts confirmed by the sciences.

Many authors referred to the scientific sources which influenced Tennyson, though very few identified the poet's views with those of Charles Lyell and Robert Chambers. George O. Marshall, for example, pointed to Tennyson's attempt at "compromise between science and religion before Darwin's The Origin of Species (1859) called out the main argument,"² an attempt which can fairly be considered a historical phase in the debate on scientific naturalism.

In order to understand the questions raised in Tennyson's In Memoriam, it is necessary to examine the sources from which the fears and doubts of the Victorians had emerged. The Victorians were aware that

1. Ibid., P.311.

2. George O. Marshall, Jr., A Tennyson Handbook (New York: Twayne Publishers, Inc., 1963), P.123.

the biblical doctrines were seriously threatened by the hypotheses and conclusions of the contemporary sciences. Although Tennyson implicitly accepted the arguments of the new sciences as his sympathetic exposition revealed, he tried hard, sometimes by artistic charm and sometimes by emotional touches, to demolish those fears and suspicions by maintaining the Christian faith.

The Principles of Geology which Tennyson read in 1837, as asserted by Eleanor B. Mattes¹, was one of several scientific works that influenced the poet. The other important book which most influenced the poet was Robert Chambers' Vestiges. Mattes suggested that "Tennyson's reading of Lyell apparently disturbed him profoundly and led him first to doubt whether life has any meaning, then to reach out for new, firmer foundation for a faith he could not bear to abandon."² But she proceeded to point out that Tennyson, in contrast to his son's assertions, never found "a satisfying faith."³ The significance of In Memoriam to Mattes, emerged from the fact that it reflected the "spiritual bewilderment" of the Victorians, "in a new scientific age."⁴ In her analysis of the poem, Mattes traced the poet's religious tendencies back to his family background, to Arthur Hallam, and to the effect of the "Apostles" society which was influenced by Frederick D. Maurice, its founder.

1. Eleanor B. Mattes, In Memoriam: The Way of a Soul (New York: The Exposition Press Inc., 1951) pp.XIV,64.

2. Ibid., P.XIV.

3. Mattes remarked that: "The retracing of Tennyson's quest for meaning and value from 1833 to 1850 confirms recent delineations of him as a confused, disturbed seeker after a satisfying faith which he never found, and reveals him in the act of searching during his most interesting creative years." - Ibid., P.XV.

4. Ibid., P.XV.

Eleanor Mattes also referred to Carlyle's influence on Tennyson who read the Critical and Miscellaneous Essays (1839) in company with Edward Fitzgerald, particularly the article entitled the "Signs of the Times" in which Carlyle, suspecting the new sciences, adhered to a transcendental point of view. Mattes connected Tennyson's idea of separating knowledge from wisdom, which appeared in section 114 of the In Memoriam¹, with Carlyle's view that knowledge was subordinate to wisdom, an attempt which led her to conclude that section 114 was written in 1839². She also associated section 123, in which Tennyson demonstrated the truth of belief in God by means of feeling, with Thomas Carlyle's (1795 - 1881) view contained in Sartor Resartus³ (1838) and J.C. Hare's The Victory of Faith (1840), though she did not offer strong evidence for the influence of the latter work.

Tennyson began section 123 by presenting a history of the geological changes which the earth had undergone, but ended it with an assertion of his faith, he wrote:

There rolls the deep where grew the tree
 O earth, what changes hast thou seen!
 There where the long street roars, hath been
 The stillness of the central sea.

The hills are shadows, and they flow
 From form to form, and nothing stands;
 They melt like mist, the solid lands,
 Like clouds they shape themselves and go.

But in my spirit will I dwell,
 And dream my dream, and hold it true;
 For though my lips may breathe adieu
 I cannot think the thing farewell. (123)

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1. Tennyson wrote: For she (knowledge) is earthly of the mind,
 But Wisdom heavenly of the soul (section 114).
 2. Mattes, op. cit., P.121.
 3. Mattes cited Carlyle's words: "Feel it in thy heart, and then say whether it is of God! This is Belief; all else is opinion". - Ibid., P.69; (cited from Sartor Resartus (1870's ed.), P.186).

Mattes compared these lines with Lyell's words that: "Many flourishing inland towns, and a still greater number of ports, now stand where the sea rolled its waves."¹ Hallam Tennyson asserted that the sections dealing with evolution were written by his father before the appearance of the Vestiges (1844), though he did not specify which sections.² Mattes refuted Hallam Tennyson's claim that his father's sections on evolution had been written some time before Chambers' Vestiges by saying that "This note is ambiguous, however, since it does not state which sections. And the evidence for the date of the Epilogue (December 1844 - The Summer of 1845)³ indicates that it, at least, was not written 'some years before' Tennyson saw Chambers' book."⁴ However, Tennyson was conveying with approbation Lyell's views as displayed in the Principles; and his son asserted that during 1837 Tennyson "was deeply immersed in ... Lyell's Geology"⁵, though he stressed his father's belief in God as Lyell himself had done.⁶

Eleanor Mattes stated that both the Epilogue and section 118 were influenced by Chambers' Vestiges by arguing that the Epilogue which connected the early presentations of death with the marriage of his sister, Cecilia, to Edmund Lushington, and with the poet's anticipation of a forthcoming child-birth, certainly reflected Chambers' optimistic views, despite Tennyson's religious interpretation of development.

Probably sections 54, 55 and 56 of In Memoriam represent the greatest influence of the contemporary sciences on the poet's mind. In section 54, there is a conflict between the perfect world of Design,

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1. Quoted in Mattes, op. cit., P.61.
 2. Hallam Tennyson pointed out that: "The sections of "In Memoriam" about Evolution had been read by his friends some years before the publication of the Vestiges of Creation in 1844". - A Memoir, op. cit., vol.I. (1897) (2nd ed.), P.223.n.1.
 3. Mattes, op. cit., "Chronology of In Memoriam", P.124.
 4. Ibid., P.88.n.26.
 5. Hallam Tennyson, op. cit., P.162.
 6. Lyell stated: "But in whatever direction we pursue our researches, whether in time or space, we discover everywhere the clear proofs of a Creative Intelligence, and of His foresight, wisdom and power". - Charles Lyell, op. cit., vol.iii, P.384.

on the one hand, and on the other, the imperfect phenomena of nature's rawness and man's own sinful and doubting attitudes. But the poet's optimism, stemming from his belief in God's design, suggests a promising future for the world. Tennyson writes:

Oh yet we trust that somehow good
 Will be the final goal of ill,
 To pangs of nature, sins of will,
 Defects of doubt, and taints of blood;

That nothing walks with aimless feet;
 That not one life shall be destroy'd,
 Or cast as rubbish to the void,
 When God hath made the pile complete;

That not a worm is cloven in vain;
 That not a moth with vain desire
 Is shrivell'd in a fruitless fire,
 Or but subserves another's gain. (54)

The poet, however, was aware that his optimistic view may have been nothing more than a "dream" and that his statements, concerning the realities of life, were akin to those of "an infant crying for the light".

In section 55, the conflict between the Supernatural power and Nature is emphasized. In its struggle, Nature appears to favour and to preserve the species without regard for the individual.

Are God and Nature then at strife,
 That Nature lends such evil dreams?
 So careful of the type she seems,
 So careless of the single life; (55)

It seems that the idea of nature's power over production and preservation dominated Tennyson's mind for a while, and suggested to him various expressions, which appear in this poem, such as the "lame hands of faith" and "I... faintly trust the larger hope", which certainly reveal the poet's inner doubts.

Tennyson, in section 56, deals with some doctrines of scientific naturalism, particularly the laws by which nature produces types of species through the mechanics of birth and death. It also

implies the doctrines of spontaneous generation and the extinction of species. Nature, as portrayed by Tennyson, is indifferent and cruel, possessing no sense of morality for it punishes the just and rewards the wicked. It is this implacable force of nature, the poet suggests, that denies man the knowledge of death and it is only through faith that man can approach and accept death. It is worth citing this section in full, for it accurately portrays the loss of man, the source of his misery, and the basis of his suspicion and agnosticism. Tennyson writes:

'So careful of the type?' but no.
 From scarped cliff and quarried stone
 She cries, 'A thousand types are gone:
 I care for nothing, all shall go.

'Thou makest thine appeal to me:
 I bring to life, I bring to death:
 The spirit does but mean the breath:
 I know no more'. And he, shall he,

Man, her last work, who seem'd so fair,
 Such splendid purpose in his eyes,
 Who roll'd the psalm to wintry skies,
 Who built him fanes of fruitless prayer,

Who trusted God was love indeed
 And love Creation's final law -
 Tho' Nature, red in tooth and claw
 With ravine, shriek'd against his creed -

Who loved, who suffer'd countless ills,
 Who battled for the true, the Just,
 Be blown about the desert dust,
 Or seal'd within the iron hills?

No more? A monster then, a dream,
 A discord. Dragons of the prime,
 That tear each other in their slime,
 Were mellow music match'd with him.

O life as futile, then, as frail!
 O for Thy voice to soothe and bless!
 What hope of answer, or redress?
 Behind the veil, behind the veil. (56)

The idea of the extinct species presented in the first four lines rejects the idea of nature's care for the preservation of species that appeared in the previous section. The contrast between "good" and "evil" reaches its climax in the poet's argument that though

nature is "red in tooth and claw", God's law of love will be stronger in the end. But the poet fails to explain how this will occur, and, eventually, is forced to assert that the answer remains "behind the veil". Given the nature of empirical logic, Tennyson cannot defend his belief on a rational level, and to alleviate this problem, he points out the limitation of rational enquiry in order to fall back on the bastion of intuitive faith. Perhaps it is interesting to note, however, that more than a century after Tennyson declared his views, the dark veil still exists and that which lies concealed still remains largely inexplicable.

The influence of Chambers' Vestiges on the poet appears in several arguments implies in the In Memoriam. In a letter, dated November, 1844, to Ed. Moxon, his publisher and friend, Tennyson wrote: "I want you to get me a book which I see advertised in the Examiner: it seems to contain many speculations with which I have been familiar, and on which I have written more than one poem. The book is called Vestiges of the Natural History of Creation."¹

The doctrines embodied in the Vestiges probably did not shock the poet who had already become acquainted with the ideas of organic creation and of natural law. In his concluding chapter on the "purpose and general condition of the Animated Creation", Chambers stated that there were two conflicting systems in the universe: God's benevolent system and Nature's malevolent laws. "To reconcile this to the character of the Deity", Chambers added, "it is but a part of the whole, a stage in a Great Progress, and that the Redress is in reserve".² We note the

1. Hallam Tennyson, A Memoir, op. cit., vol.I.pp. 222 - 223.

2. Robert Chambers, Vestiges, op. cit., (12th ed. 1884), P.417.

coincidence in Chambers' usage of the term "Redress" here, which refers to the cruelty of nature with Tennyson's popular aphorism which describes nature as "red in tooth and claw"; yet we are aware that Chambers' views and statements preceded those of Tennyson. Moreover, both Chambers and Tennyson attempted to solve this conflict, the former by anticipating the disappearance of evil at a later stage, and the latter by incorporating nature into a universal and moral power.

However, Tennyson, in section 130, unifies the two conflicting powers of God and Nature, combining their characteristics in one immortal world where he presumes that he will meet his dead friend, Hallam, if not in terms of the body, at least in terms of the soul. He writes:

Tho' mix'd with God and Nature thou,
I seem to love thee more and more.

Far off thou art, but ever nigh;
I have thee still, and I rejoice,
I prosper, circled with thy voice;
I shall not lose thee tho' I die. (130)

Apart from the emotional and passionate love, these lines reflect the poet's attempt to combine God and Nature thereby immortalizing the principle that God is love as well as both Arthur Hallam and himself.

Tennyson's optimism, his trust in a progressive world, and a subsequent brighter future for man were similar to the views held by Chambers. His belief in evolution and progress, for example, is implied in his statements that man is "The herald of a higher race" (section 118), and that his gradual perfection will undoubtedly result in "the crowning race" (The Epilogue). Both Tennyson and Chambers made use of the term 'crowning'¹ which indicates the idea of progress and perfection which was popular in the intellectual circles long before Darwin's Origin. This concept of a perfectable humanity may well have been engendered by, and developed out of, the reverent attitude generally adopted when dealing

1. In Chambers' words: "Is our race but the initial of the grand crowning type?" Quoted in Mattes, op. cit., P.80.

with the eminent figures of history, a kind of hero-worship that was fostered by many able writers, such as Carlyle, Charles Kingsley, Thomas Hughes, and even Samuel Smiles, throughout the nineteenth century. The great man is applauded and regarded as a corollary and even surrogate for the perfectability of man. In Memoriam illustrates both tendencies where a view concerning the gradual perfection of man is combined with a celebration of the heroic qualities of Arthur Hallam.

Charles Kingsley (1819 - 1875) was among the early writers who warmly welcomed In Memoriam, though he disliked the reiteration of some sceptical utterances which he presumed would tempt the university undergraduates of his time. His appreciation of the poem culminated in his description of it as "the noblest Christian poem which England has produced for two centuries".¹ Perhaps because of Tennyson's mystical approach to understanding the divine power underlying nature, Kingsley found him "the greatest naturalistic poet which England has seen for several centuries".² As far as we know, Kingsley himself was a lover of nature, who believed that all natural phenomena were the embodiments of the supernatural power. He was an intimate friend of Philip Gosse (1810 - 1888), a Christian naturalist and the writer of Omphalos in 1857.

The review of In Memoriam in The North British Review announced the historical significance of the poem by pointing out that:

Our immediate impression upon the perusal of "In Memoriam" was that it claimed a place in the very highest rank, and that it was the first poem of historical importance which has appeared since the "Excursion".

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1. John D. Jump, Tennyson: The Critical Heritage (London: Routledge & Kegan Paul, 1967), P.173.
 2. Ibid., P.175.
 3. Edgar Finley Shannon, Jr., Tennyson and the Reviewers 1827 - 1851, (U.S.A: Archon Books, 1967), P.145.

The majority of the critics, old and new, admitted the truth of this evaluation and even found it an epoch-making poem. G.H. Lewes, for example, prophesied that: "We shall be surprised if it does not become the solace and delight of every house where poetry is loved. A true and hopeful spirit breathes from its pages... All who have sorrowed will listen with delight to the chastened strains here poured forth In Memoriam."¹ Recently, E.F. Shannon has remarked that while the treatment of In Memoriam in the Westminster Review was devoted to "a fulsome eulogy of both author and work",² the reviewer for The Times 'pompously' declared that Tennyson's "faults of taste and language are stereotyped, and he now writes his affections in Capitals", in addition to two defects: "The enormous exaggeration of the grief", and "the tone of amatory tenderness".³ Shannon believes that the reviewer's criticism did not have a great effect on Tennyson, though he does point out that the poet altered a few words in the revised editions of In Memoriam. Shannon's conclusion on the poet's position in the literary tradition is that: "Tennyson won the hearts and minds of his contemporaries, both great and small; but by catering to the tastes of one age, he jeopardised his reputation with the next (age)".⁴

In a letter to Hallam Tennyson, John Tyndall (1820 - 1893) recalled his early acquaintance with the poet whose words, he said, were cited by the greatest men of the Victorian age, such as Thomas Carlyle,⁵ for example. Comparing Tennyson with Carlyle, Tyndall pointed out that each had drawn from the prevalent sciences of his period: Carlyle from physics and chemistry, and Tennyson from biological researches. "These

1. Ibid., P.142.

2. Ibid., P.147.

3. Ibid., P.156.

4. Ibid., P.166.

5. Tyndall remarked that it was Carlyle's citation of Tennyson's line: "There dwells the great Achilles whom we knew", that drew his attention to the poet's talent; Hallam Tennyson, op. cit., vol.ii, P.470.

latter", said Tyndall, "fell in your father's hands, and he had made noble use of them from "In Memoriam" onward."¹ He referred to Tennyson's interest in the contemporary sciences and to his attitude towards materialism, which was Tyndall's own philosophic creed, by saying to Hallam: "Your father's interest in science was profound, but not, I believe, unmingled with fear of its "materialistic" tendencies."²

Tyndall referred to Tennyson's poem "The Ancient Sage", in which the poet argued, in metaphorical language, against materialism. In this poem Tyndall recognized the truth of the portrayal of his own pessimistic and materialistic philosophy. He largely quoted the words of the young man who represents materialistic thought in the poem only to assert that the truth of life was unknown. It is worth quoting a few lines of this poem which was first published in 1885 and which was considered by Tennyson himself to be "one of his best later poems",³ as his son recorded in the notes. The young lover relates:

"The years that when my Youth began
 Had set lily and rose
 By all my ways where'er they ran,
 Have ended mortal foes;
 My rose of love for ever gone,
 My lily of truth and trust -
 They made her lily and rose in one,
 And changed her into dust.
 O rosetree planted in my grief,
 And growing, on her tomb,
 Her dust is greening in your leaf,
 Her blood is in your bloom.
 O slender lily waving there,
 And laughing back the light,
 In vain you tell me 'Earth is fair'
 When all is dark as night." ⁴

1. Ibid., P.475.

2. Ibid., P.469.

3. The Works of Tennyson, ed. by Hallam Tennyson, vol.6.(1908),P.397.

4. Ibid., vol.6.P.243.

Tyndall's reference to this poem reveals that even in his old age he still adhered to his blend of materialistic and agnostic beliefs.

In his book entitled Theme and Symbol in Tennyson's Poems to 1850, Clyde de L. Ryals maintains that Tennyson was an anti-rationalist who - like the Romantics - preferred to believe in noumena rather than in natural phenomena. He also arrived at a conclusion similar to that of Tyndall's that Tennyson feared the influence of the natural sciences which seemed to support materialism. He stated that "From the time of his earliest verse Tennyson had feared that the advance of science would bring about the decay of "natural" life and would lead to belief in a materialism which was opposed to poetry."¹ On one occasion when Tennyson was called to vote on the question of the deducibility of a First Cause from natural phenomena, he voted in the negative.²

G.M. Young, the historian, accords priority to Tennyson in putting the question of evolution before a wide public in the mid-nineteenth century. In his book, Victorian England: Portrait of An Age, Young remarks that In Memoriam is not only "nine years older than The Origin of Species", but also its forerunner in answering, or apparently answering, "all the doubts of Christianity, of providence, of immortality, which the advance of science had implanted in anxious minds."³ Moreover, he asserted that the poet, as well as many educated men of the period, had lost his faith in Christ's divine personality, as is implied by his use of agnostic terms and Butlerian mockery.⁴

1. Clyde de L. Ryal, Theme and Symbol in Tennyson's Poems to 1850, (Philadelphia: University of Pennsylvania, 1964), P.216.

2. Hallam Tennyson, A Memoir, op. cit., vol.i., P.44.

3. G.M. Young, Victorian England:Portrait of An Age (Oxford: O.U.P., 1969), P.75.

4. Ibid., P.76.n.1.

In Memoriam is characterised by its discussion of the more important issues of life in the light of the contemporary sciences, particularly natural history. Yet, it still retains all the passion of a romantic poet whose love manifested itself in a form of Christian faith which implied a belief in the immortality of the soul, and also in the fraternal love that he felt for Arthur Hallam, an attitude which later has been interpreted by some recent critics as implying a homosexual relationship, which is, of course, in the nature of criticism in these days.

The appearance of a number of free thinkers in England who found a new source of speculation in Comte's Religion of Humanity can be seen as a reaction to the belief, which so characterized Tennyson's work, in a transcendental world in which human spirits are immortalized.

August Comte's secular philosophy reached the intellectual circles in England long before the appearance of Darwinian naturalism. The pioneers of this school included Harriet Martineau, George Eliot, and George Henry Lewes in the mid-nineteenth century, whilst Frederic Harrison was the most distinguished scholar and popularizer of Positivism in the second half of that century. Each of these writers adopted their own methods of conveying positive thought to the English reader. Martineau, for example, translated Comte's Philosophie Positive¹ during the lifetime of the philosopher who appreciated Martineau's free and condensed translation of his work. It was published in three volumes of moderate size in 1853, the same year in which G.H. Lewes published Comte's Philosophy of the Sciences,² an occurrence which suggests to the reader that some degree of collaboration existed between the pioneers of the impact in

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1. The Positive Philosophy of Auguste Comte, translated by Harriet Martineau with an "Introduction" by Frederic Harrison, 3 vols., (London: George Bell & Sons, 1896).
 2. G.H. Lewes, Comte's Philosophy of the Sciences (London: Henry G. Bohn, 1853).

England at a time when Comtism had lost much of its attraction in France, and when Comte himself was being financed by his English admirers.¹

There can be no doubt that many English writers derived their doctrines, philosophies, and attitudes from either German or French sources. Comtism as well as Higher Criticism were introduced to Britain by distinguished secularists who found no harm in drawing from foreign sources less traditional and less conservative in thought and character than their own. English Positivists, as a rule, did not blindly adhere to this school of philosophy and were generally discriminating in their approach to it, although there were some men who were Comtists to the core, particularly when they adopted the system not as a philosophy but as a religion with its own rituals, prayers, and god. Distinguished positivists gave the system a genuine English character by selecting from the French philosophy that which was logical in terms of rationalization and that which they considered appropriate for the English scene. The proportional failure of positivism in England was, and can still be, largely attributed to its development into a religion which, although seemingly secular in its claims, was, in reality, similar to other religions in its speculative nature. By incorporating such a religious tendency, positivism lost the sympathy of the scientists whose methodology exercised a dominant influence over the thought of the time. So, Thomas Huxley, in particular, did much harm to the school more than any competing movement. In spite of the conflicts with traditional and secular systems of thought, positivism did, however, indirectly contribute to the advancement of the sciences by claiming to adopt scientific methods in its search for truth within human history.

However, the apparent facts of the life science were discussed by Chambers, Tennyson, and even Comte on a speculative basis. Only Lyell's geological investigations and suppositions concerning the appearance of

1. H. Martineau, op. cit., "Introduction", P.XV.

man proved to be sound and scientific. Nevertheless, "Lyell himself," as William Coleman points out, "was a temperate creationist who denied the mutability of species."¹ In fact, the hypothesis of species transmutation did not receive any recognition until the publication of The Origin of Species in 1859.

V. THE QUESTION OF SPECIES

The exchange of letters between Darwin and Lyell, in addition to Lyell's new published journals, indicate that the question of species was the subject matter of a meeting held by Thomas Huxley, Joseph Hooker (1817 - 1911), botanist, Thomas Wollaston (1822 - 1878), entomologist, and Lyell at Darwin's house in 1856.² Perhaps it never struck Lyell that Darwin's views on species would affect Christian doctrines, therefore, he urged him to publish them as soon as possible. Darwin was fully in agreement with Lyell's views that the distribution of species must be explained in the light of geological facts, while Lyell's attitude towards Darwin's views on the origin of species was not decisive. F.H. Rhodes, in his inaugural lecture³ delivered at the University College of Swansea, on 23rd January, 1958, asserted that Darwin's reasoning in The Origin was mainly based on geological evidence, and that Darwin's book, The Geology of the Voyage of the Beagle which appeared in 1842, had already established his position among the professional geologists. Perhaps the doctrine of 'special creation', which Darwin had observed while studying to be a clergyman at Cambridge University, was first shaken by his geological pursuits, particularly

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1. William Coleman, Biology in the Nineteenth Century, op. cit., P.68.
 2. L.G. Wilson, Sir Charles Lyell's Scientific Journals on the Species Question, op. cit., "Introduction", pp. xlvi - xlvii; Francis Darwin, The Life and Letters of Charles Darwin (London: John Murray, 1887), vol.ii., pp. 67 - 68.
 3. F.H.T. Rhodes, Life, Time, and Darwin (Oxford: O.U.P., 1958).

his discoveries of a few fossils in the muds of Punta Alta¹ during his voyage on the Beagle. Contrary to the conventional belief that the creatures which had been extinguished before the catastrophic 'Flood' were created anew after it, Darwin found no explanation for the similitude between the fossils of extinct monsters and living animals except by a concept of evolution, the development of which he was to establish as a glorious scientific success for the British nation.

On 1st July 1858, the combined paper of Darwin and Wallace "On the Tendency of Species to Form Varieties; and On the Perpetuation of Varieties and Species by Natural Selection", launched the case before the members of the Linnaean Society. The story of the coincidence between the two scientists has been narrated in almost every work concerned with the subject, and Wallace's honourable and dignified attitude was always appreciated. Both scientists were influenced by Robert Malthus' Essay On The Principle of Population,² which maintained that human beings increased in population according to a geometrical progression while the means of subsistence grew according to an arithmetical one. As a consequence of this hypothesis, Malthus implied that if human societies wanted to avoid famines, they must adopt birth control; otherwise, famine, misery and vice were ineluctable consequence of natural law.

Various authors have emphasized that Darwin's labours to accumulate evidence for his theory of species took more than twenty years; and they have provided us with rich information about the man who invaded the world of thought and whose work seems to have penetrated the mind of every scientist, philosopher, and artist of the Victorian Age.

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1. Dorothy Laird, Charles Darwin, Naturalist (Glasgow: Blackie, 1958), P.16.
 2. Thomas Robert Malthus (1766 - 1834) was the first Professor of Political Economy in England. His theory on population appeared in two subsequent treatises: An Essay on the Principle of Population (1798) and A Summary View of the Principle of Population (1830). These essays have been recently published with a genuine introduction by Professor Antony Flew, in one volume (Penguin, 1976).

Just before the public appearance of The Origin of Species its proof sheets were sent by John Murray at Darwin's request to Lyell who read them and wrote a letter to Darwin on 3rd October 1859, in which he stated:

I have just finished your volume (The Origin), and right glad I am that I did my best with Hooker to persuade you to publish it without waiting for a time which probably could never have arrived...

It is a splendid case of close reasoning and long sustained argument throughout so many pages,... when, as I fully expect, a new edition is soon called for, you may here and there insert an actual case, to relieve the vast number of abstract propositions... So far as I am concerned, I am well prepared to take your statements of facts for granted,... and I have long seen most clearly that if any concession is made, all that you claim in your concluding pages will follow.

It is this which made me so long hesitate, always feeling that the case of Man and his Races and other animals, and that of plants, is one and the same, and that if a Vera Causa be admitted for one instant, of a purely unknown and imaginary¹ one, such as the word 'creation', all the consequences must follow.

No doubt these encouraging words were among the earliest reception of the theory by a learned man whose scientific authority was indisputable at the time. However, they also reveal caution as much as support, a hesitancy which stamped Lyell's attitude towards the evolutionary theory for a considerable time. Ellegard asserts that this hesitant stand made of Lyell a pro- and anti-Darwinian simultaneously for he was quoted by both exponents and opponents of evolution. Ellegard notes, by citing the Westminster Review which first called attention of the public to the matter, that Lyell only publicly accepted the evolutionary theory when his Principles of Geology went into the tenth edition in 1868.²

It was on 24th November 1859 that The Origin of Species first appeared to the world and the 1,250 copies of this edition were sold out on the same day.³ The main questions discussed in the book were:

1. Variations, or the principle of divergence from previous types.

1. Life, Letters, and Journals of Sir Charles Lyell, Bart., edited by his sister-in-law, Mrs. Lyell (1881), vol. II, p. 325.
 2. Alvar Ellegard, Darwin and the General Reader (Göteborg, 1958), P. 53.
 3. F.H.T. Rhodes, op. cit., P. 4.

2. The principle of natural selection.
3. Laws of heredity.
4. The tendency of species to progress.

A brief analysis of these questions as expounded by Darwin will help us to understand the forthcoming arguments for and against the theory of evolution.

Darwin pointed out that offspring tend to depart from their parental types in structure or character, and that such deviations of the members of a species were called 'variations'. He applied the principle of variation to both worlds of plants and animals, not excluding man. He confirmed that there was no one individual in domesticated and natural species which was absolutely identical with its parents, sisters, or brothers. He argued that there were no intermediate species because of the tendency of species to variations, and that it was difficult to obtain an intermediate race from two distinct species by breeding, apart from the fact that there was no evidence for a single case which was thus obtained. Moreover, he found no substantial difference between the phenomena of monstrosity, as a character, and variation, nor saw he any reason to admit the view then held by naturalists that domestic animals reverted to their primitive stocks when they were put in a wild environment.

Speaking of the causes of variations, Darwin initially agreed with Andrew Knight (1759 - 1838), a botanist, that variability was partly due to the excess of food, though he found that the direct effect of the external circumstances such as light, food, and climate was very slight.¹ He attributed variations to the intricate laws of

1. Charles Darwin, The Origin of Species, op. cit., P.74.

inheritance as well as to the influence of habit by referring to the difference in the bone structure between the domestic and the wild duck. He held that these variations were preserved by the law of natural selection.

By the principle of natural selection Darwin explained the process of evolution in the organic world. This doctrine, which remains as valid today as it did more than a hundred years ago, argues that there is a process of selection in nature which is very similar to that in domestic breeding where man selects certain characteristics, and aims at their preservation. In the process of selection, nature acts to preserve the advantageous peculiarities of each single species which serve the species itself and the species to come according to the laws of the "struggle for existence". In Darwin's own words: "Natural selection can act only by the preservation and accumulation of infinitesimally small inherited modifications; each profitable to the preserved being."¹ It is "This preservation of favourable variations and the rejection of injurious variations",² that was termed 'natural selection' by Darwin.

In order to demonstrate the truth of this principle, Darwin furnished scientists with a huge number of facts which explored both the animal and plant worlds. He showed how nature strikes a balance between the production of organisms and the availability of their food supply according to the principle of the survival of the fittest. There is a constant competition between the individuals of one species as well as between the various species, the result of which is determined by the efficacy of their characteristics which are developed through the influence of external conditions. These beneficial peculiarities of the individuals will pass to the offspring according to the laws of heredity, and the

1. Charles Darwin, The Origin, op. cit., P.142.

2. Ibid., P.131.

accumulation of these peculiarities in variations will produce new species in the course of a prolonged time. This process of accumulation of peculiarities and variations and the production of species is administered by the law of natural selection. In his concluding chapter Darwin expounded the nature of this evolutionary process by saying: "As natural selection acts solely by accumulating slight, successive, favourable variations, it can produce no great or sudden modification; it can only act by very short and slow steps."¹ Thus, the principle of natural selection has been considered the only constant physical cause for the origin of species.

Darwin, in The Origin of Species, accords little space to the treatment of the issue of inheritance, indeed his treatment might even be called cursory or indecisive. Darwin himself recognized the difficulty of presenting a satisfactory explanation of the hereditary laws, and he himself announced that they were "quite unknown."² He was unable, for example, to explain why offspring inherit certain characteristics from their grandparents or even from remoter ancestors, or "why a peculiarity is often transmitted from one sex to both sexes, or to one sex alone, more commonly but not exclusively to the like sex."³ He presented some crucial facts on hereditary phenomena which can be summed up in the following points:

1. The peculiarities of male individuals are often inherited by the male offspring alone.
2. The time of the occurrence of an inherited peculiarity, in the offspring, will approximately correspond to the time of its prior appearance in the ancestor.
3. The fact of the corresponding period is also applicable to hereditary diseases which tend to appear in the offspring at the time it first appeared in the parent.

1. Ibid., P.444.
 2. Ibid., P.76.
 3. Ibid., P.76.

Darwin refuted the idea that a variety might revert to its parental stock, arguing that it was difficult to decide the identity of the original stock, and that some domestic varieties failed to live in a wild state, and, in any case, the reversion would occur under new conditions of life, but the law of natural selection "will determine how far the new characters thus arising shall be preserved."¹

The precepts that Darwin adopted with regard to inherited peculiarity and disease led him to assert that in these principles lay the secret of understanding the laws of embryology. Some seven years later, he, perhaps unfortunately, put forward his embryological views in the "Pangenesis",² a theory which proved to be speculative. Darwin, however, did include some embryological facts in his morphological study of species as revealed in chapter 13 of The Origin³.

The celebrated doctrine of progress, or perfection, was included by Darwin in his theory of evolution. Thus Tennyson's poetic vision was provided with a scientific basis in The Origin of Species.

Darwin's own words reveal his belief best:

Hence we may look with some confidence to a secure future of equally inappreciable length. And as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection.⁴

On the conceptual plane, the doctrine of perfection is the optimistic view of the intellectual man about his future. In a sense, it is very similar to the traditional view of immortality in its anticipation of a better future for man, but on earth, of course, not in heaven. The old schools of immortality seek perfection of mind and manner in place, in some distant heaven, while the new school searches for

1. Ibid., P.78.

2. Darwin's theory of "Pangenesis" appeared in his book entitled The Variation of Animals and Plants (1868); F. Darwin, The Life and Letters of Charles Darwin, op. cit., vol.iii., P.75.

3. Charles Darwin, The Origin, op. cit., P.419.

4. Ibid., P.459.

perfection in time by presuming a prolonged period of time for nature to complete her process of perfection. What follows perfection is not the evolutionist's concern.

"Philosophy has always had one aim, that of furnishing an Explanation of the World, of Man, and of Society; but it has sought this aim by various routes. To solve the problems of existence, and to supply a rule of life, have constituted its purpose more or less avowed."

H.G. Lewes, The History of Philosophy
vol.ii. (1971),P.689.

C H A P T E R T W OTHE CONFLICT BETWEEN RELIGION AND SCIENTIFIC NATURALISM IN GREAT BRITAIN

The literature of scientific naturalism was an important subject in the periodicals of the second half of the nineteenth century. With the appearance of Darwin's The Origin of Species, some of its scientific supporters pictured a conflict between the traditional religion and the new. The theory of evolution turned out to be the most vigorous antagonist to orthodoxy. In this chapter we shall see the implications of the new doctrine for the old conceptions of creation, faith, revelation, miracles, death, resurrection, and immortality. The writings of men of letters, scientists, and theologians will indicate how the new "religion" was received. The natural scientists will be represented by pure scientists like T.H. Huxley, John Tyndall, and W.K. Clifford; Positivists like Frederic Harrison, and free thinkers such as Herbert Spencer and Leslie Stephen.

In the First Principles published in 1852, Herbert Spencer outlined his conception of evolution in which sciences were combined to make up an integral unity of growth and progress. It was in "the Development Hypothesis", a paper which appeared in The Leader in 1852, that Spencer stated his belief in two principles: the gradual development of organisms including man, and the process of modification of species which was assigned to the change in circumstances. In his historical sketch to The Origin of Species, Darwin appreciated Spencer's "skill and force" in displaying his principles which were in contrast with the traditional theories of evolution and creation. Spencer and Huxley were the outstanding figures among those who believed that this secular doctrine provided solutions to the problems of human life. This scientific religion was described by Beatrix Webb, who was an intimate

friend of Spencer and Huxley, as:

an implicit faith that by the methods of physical science, and by these methods alone, could be solved all the problems arising, out of the relation of man to man and man towards the universe.

I. THE EARLY RECEPTION OF DARWINISM

To Darwin's delight and satisfaction on 26th December 1859, The Times² assigned more than three columns to the review of his work on the species. Knowing nothing about the reviewer, Darwin wrote to Huxley telling him that: "The author is a literary man and a German scholar. He has read my book attentively; but what is remarkable, it seems that he is a profound naturalist... Who can it be?"³ Cyril Bibby^{also} cites Huxley's letter to show a disguised role played by Huxley in writing this article. It appears in The Times under the title of "Darwin on the Origin of Species", while in Huxley's Collected Essays it is reprinted as "The Darwinian Hypothesis". Perusing both texts, one finds that only the poetic opening which decorated the earlier text with an interesting Homeric stanza has been cut out.⁴ Perhaps the reason lies in the three lines which reflect the meaning of rise and fall which may be connected with Darwin's theory itself. No doubt, Huxley, by publishing his review in The Times, was aiming at popularizing the theory of evolution. However, the main ideas of the reviewer are our concern here.

1. Quoted in Frank M. Turner, Between Science and Religion, op. cit., P.12.

2. T.H. Huxley, "Darwin On the Origin of Species", The Times, (Monday, Dec.26th,1859), pp.8 -9.

3. Cyril Bibby, Scientist Extraordinary, The Life and Scientific Work of T.H. Huxley 1825 - 1895. (Oxford: 1972), p.39.

4. The stanza runs as such: "Cities of men
And manners, climates, councils, governments;
Yet we must end by confessing that
The windy ways of men
Are but dust which rises up
And is slightly laid again."

The Times, op. cit., P.8.

Huxley first tackled the old definition of species which he found far from helpful in solving many problems, such as the aspects of fertility and sterility ensuing from the union of the members of a certain species, and of two different species which produced hybrids. Huxley quoted both the Rev. Herbert (1778 - 1847) and Gaertner (1772 - 1850), German botanist, whose experiments proved that fewer hybrids were as fertile as the distinct species. He also asserted that the traditional views, both scientific and religious, did not offer any reasonable explanation for the useless rudimentary organs such as the teeth in the calf and the whale, the jaw and wings in insects which neither bit nor flew, and the rudimentary eyes in blind animals. He referred to the fact that all plants and animals, including man, started life from the very beginning in similar and undistinguished forms and gradually developed into distinct creatures, and that none of them came into being in its perfect form at all. By this statement Huxley explicitly refuted special creation, the doctrine which was adopted by many distinguished scientists of the epoch, particularly Richard Owen.

Huxley appreciated the earlier contributions of Lamarck and Cuvier to the question of species but he rejected the former's laws of adaptation which maintained that the effect of environment was the main cause for descent with modification, and that the modifications were transferred to the offspring in the succeeding generations. He did not allow that the laws of adaptation could be the reason for the appearance of variations, one of which would later become a species. For him the laws of natural selection and the struggle for existence were more reasonable for producing variations. With regard to the law of struggle he asserted that a balance between the processes of birth and death was a distinct phenomenon in Nature. Confirming the existence of this principle, Huxley remarked that:

It is mathematically certain that, on the average, as many are killed by natural causes as are born every year, and those only escape which happen to be a little¹ better fitted to resist destruction than those which die.

He expounded, afterwards, how the law of natural selection was at work within the framework of competition among the creatures. He showed, in a simple language, how the offspring B, for instance, was derived from the parental stock A, in order to constitute a new variation by its better fitting to the place, and how the offspring C, equipped by new peculiarities which seemed much fitter, came to take the place of the former, and so on, while the remaining variations were not strong enough to resist the competition, therefore, extinction was their inevitable destiny. This process continued generation by generation by the instrumentality of natural selection, the hypothesis which seemed to him more acceptable than any other preceding one.

In this article Huxley dealt rather mildly with the religious issues to which the evolutionary doctrine seemed to be in contrast. Speaking of the scientists who believed in the special creation, he pointed out that none of them could offer any acceptable evidence. Commenting on this type of man, he wrote:

They believe that the writer of the Pentateuch was empowered and commissioned to teach us scientific as well as other truth, that the account we find there of the creation of living things is simply and literally correct, and that anything which seems to contradict it is, by the nature of the case, false.²

Among these men Huxley referred to Lamarck and Cuvier who wrongly held the doctrine of the final causes though their distinguished contributions to the realm of zoology and botany were not devalued. While he was appreciating Darwin's labours and describing his scientific qualities as a lover of truth and a researcher of the first order, Huxley hinted at Richard Owen's attitude by showing the contrast between the

1. The Times, op. cit., P.8.

2. Ibid., P.8.

old and new doctrines of life in the following words:

The path he bids us follow professes to be not a mere airy track, fabricated of ideal cobwebs, but a solid and broad bridge of facts. If it be so, it will carry us safely over many a chasm in our knowledge, and lead us to a region free from the snares of those fascinating but barren Virgins, the Final Causes, against whom a high authority has so justly warned us. "My sons, dig in the vineyard," were the last words of the old man in the fable; and, though, the sons found no treasure, they made their fortunes by the grapes.

In order to know from this review whether Huxley accepted the evolutionary theory at this stage or not, we must examine his statements, particularly those which were connected with the elements of philosophy and wisdom. In fact, he did not claim the full correctness of the theory though he launched a few arguments in its favour. His attitude appeared in taking Goethe's aphorism, "Thätige Skepsis" - active scepticism - as a guide to truth. He remarked that: 'It is doubt which so loves truth that it neither dares rest in doubting, nor extinguish itself by unjustified belief.'² Perhaps it was the wisdom of the propounder himself that reflected doubt as a means to wisdom in the manner of exposing his arguments and inferences in a form of hypothesis.

Moreover, Huxley in this article, touched upon the notion of racial discrimination by pointing to the difference between the white nations and the negroes. He even went beyond the ordinary level once entertained by the slave merchants to the scientist's assertion that the white and the negro were of different species. "In these islands", he wrote, "we are in the habit of regarding mankind as of one species, but a fortnight's steam will land us in a country where divines and savants, for once in agreement, vie with one another in loudness of assertion, if

1. Ibid., P.9.

2. Ibid., P.9.

not in cogency of proof, that men are of different species; and more particularly, that the species negro is so distinct from our own that the Ten Commandments have actually no reference to him."¹ Although there was some reason to believe in the existence of such distinction, it was unfortunate that evolutionists laid stress upon such a phenomenon which resulted in disaster when this doctrine obsessed the minds of the politicians and the rulers of Europe a few decades later. Soon after the appearance of scientific naturalism liberal anthropologists began their labours to support the new approach on fresh grounds. However, so far as the general reader was concerned, the article was quite exquisite in its accurate explanation of the new theory, its simple language, and its expectations which revealed Huxley's profound insight as well as his scientific boldness.

Perhaps Huxley's article entitled "Time and Life"² was his first attempt at calling attention, in a public journal, to Darwin's theory of species. This article was originally delivered as a lecture at the Royal Institute of Great Britain, some time before The Origin had appeared. Although Huxley referred to the originality of his belief in the gradual evolution of species within a long span of time, he did not deny that he was acquainted with Darwin's investigations. In this article Huxley spoke of two important points: the problems and controversy raised by paleontological and geological attempts at dating the appearance of life on earth, and the notion of species modification. He appreciated both the doctrine of uniformity of species and the doctrine of progression which seemed to him to be inherently connected. While he supported the view that existing species were the result of modification within

1. Ibid., P.8.

2. T. Huxley, "Time and Life", Man's Place in Nature, (Everyman's Library, 1927), pp. 287 - 298.

long geological periods, he attacked the doctrine of "special creation" adopted by the traditionalists.

Huxley's essay on "The Origin of Species"¹ which appeared in The Westminster Review* in 1860 was his third attempt at drawing attention to the problem of species by displaying many views and arguments in favour of scientific naturalism which was in its primitive stage. In

1. T.H. Huxley, Darwiniana, Collected Essays (1893), vol.ii., pp.22 - 76.

* The Westminster Review was established by James Mill, father of J.S. Mill, in 1824. It was natural for this review to pose the Utilitarian doctrine which was guided by both the father and son. As a result of financial difficulties, the review was attached to the London Review in 1836. Its possession was transferred to J.S. Mill in 1837, though Sir William Noesworth was the actual editor of the review. It was also transferred from J.S. Mill to the possession of W.E. Hicks and finally it was sold to John Chapman in 1847.

It appeared under the title of The Westminster and Foreign Quarterly Review in 1851. Chapman concentrated on exhibiting the product of very well-known men of letters like James Antony Froude, Walter Pater, Frederic Harrison, and others. George Eliot's contribution to the review was in two ways: first, by acting as an assistant-editor to Chapman for two years, and secondly, by reviewing some famous literary works. The major interest of the periodical was in literary criticism and book reviewing. The reviewers' criticism was distinguished by prejudice, and Mill's reviewing was conspicuous. Politically, the review supported the case of radical philosophy and aimed at "reform within the Church as well as in Society in the State." a

It was a quarterly review until 1887 when it began to appear monthly. It disappeared with the outbreak of the First World War. The review published articles of diverse interests and a section entitled "Contemporary Literature" which appeared at the end of the periodical, was assigned to the literature of Science, Politics, Sociology, Voyage, Travels, History, Biography, and Belles-Lettres.

^a.Walter Graham, English Literary Periodicals, (London: Frank Cass & Co. Ltd., 1966), a reprint of 1930. P.253.

the striking words of his opening paragraph Huxley portrayed how the men of learning with their various interests and turns of mind received the thunderbolt of the epoch. In fact, there is no escape from citing the scene depicted by the writer who assigned his brilliant mind and his literary genius to exposing the case. He wrote:

Everybody has read Mr. Darwin's book, or, at least, has given an opinion upon its merits: pietists, whether lay or ecclesiastic, decry it with the mild railing which sounds so charitable; bigots denounce it with ignorant invective; old ladies of both sexes consider it a decidedly dangerous book, and even savants, who have no better mud to throw, quote antiquated writers to show that its author is no better than an ape himself; while every philosophical thinker hails it as a veritable Whitworth gun in the armoury of liberalism; and all competent naturalists and physiologists, whatever their opinions as to the ultimate fate of the doctrines put forth, acknowledge that the work in which they are embodied is a solid contribution to knowledge and inaugurates a new epoch in natural history.¹

Like an able lawyer who knew all about his case, its strong as well as weak points, Huxley referred to Darwin's multitude qualifications in fields of zoology, anatomy, geology, and the geographical distribution of plants and animals in addition to his ability as a philosopher. He began his review by expounding many essential issues which were of equal interest for the common reader and the specialist.

The issues were either of a scientific nature or philosophical views. Huxley plainly demonstrated that Biology was divided into morphology and physiology, and that what was generally known as species could be spoken of at the level of the two branches. By morphology he meant the part that dealt with the structure and form of the organism, while by physiology he described the part dealing with function. He pointed out that whereas Darwin could demonstrate the morphological concept of species by breeding, he hardly did so concerning the physiological one. Huxley was aware of two facts: first, the similitude of plants and animals in their embryological stages, secondly, the

1. Ibid., pp. 22 - 23.

Aristotelian view that all embryos strove to perfect their parts to the model of their parental form. Although he felt the weakness of Darwin's principles of heredity, which were connected with spontaneity or chance, he expected that further scientific research would disclose this law of similarity between the offspring and the primitive parent. He remarked that scientists held that the similarity which had been preserved in a long series of generations of a plant or an animal entitled it to the rank of a species, but he rejected the conception of 'primitive' which appeared in the physiologists' definition of species as: 'the offspring of a single primitive stock',¹ when it meant 'independent' because he found it baseless on the ground of observation. He asserted that there was no identical similarity between the offspring and the parental organism but, on the contrary, there must have been a continual deviation, no matter how slight it was, and it would count for the question of transmutation.

He explained that when the deviation from the parental stock was substantial, the individual would be considered a variety which, in the course of time, would make a new species. He gave two examples of variation which showed no reason for the appearance of such deviation: an ewe gave birth to a male lamb which largely differed from its parents and a human couple with cramped fingers and toes, called Kelleia, had a son, Gratio, with six fingers and six toes. He asserted that what was counted for as external effects of time, food, or other circumstances had nothing to do with the phenomenon of variety which he described as 'spontaneous' in its manner, though he did not completely deny the external influence which affect size, colour, and construction. He traced the variety of the Kelleias in two succeeding generations, and found that only one out of the four children of the first generation was hexadactyle, while the variety appeared at its full force in the second

1. Ibid., P.32.

generation where seven out of nine departed from the ordinary form of fingers and toes. However, Huxley himself could not work out the hidden laws of heredity as well as the tendency of organisms to variations, though he believed in the existence of a natural law which governed the physiological character in species. His reasoning for the absence of a race of six fingers and toes evolving from the Kelleia family was that no inter-marriage occurred between the sons and the sisters of the first generation nor among the cousins of the second generation, a process which was far from the artificial selection exercised in animal breeding.

Huxley refuted the traditional notion of physiological species which was based on the assumption that the offspring of a species proved to be fertile with each other, and infertile when crossed with other species, or when two species crossed with each other, they produced infertile hybrids, by referring to Darwin's demonstration that some plants were "more fertile with the pollen of other species than their own"¹ and with regard to sterility Darwin's words would speak for themselves:

The sterility is innately variable in individuals of same species, and is eminently susceptible of favourable and unfavourable conditions. The degree of sterility does not strictly follow systematic affinity, but is governed by several curious and complex laws.²

Thus Huxley asserted that any theory of the origin of species should take into consideration the phenomena of infertility between the offspring of a species as well as the sterility of hybrids without which the theory would be imperfect, besides the fact that in the process of crossing "species exhibit every gradation from perfect sterility to perfect fertility."³ These were the main scientific arguments which Huxley laid stress upon in his article.

In his philosophical analysis of the origin of species Huxley aimed at devaluing mythical thought, as well as the religious

1. Ibid., P.46.

2. Ibid., P.47, quoted from The Origin of Species (1st ed. 1859)P.276.

3. Ibid., P.50.

speculations of Judaism and Christianity. To him it was deplorable to see that the majority of the civilised world was still admitting the authority of such superstitions, though every scholar knew that their writers were obscure and unknown. He began his attack by referring to the permanent conflict between religious authorities and the seekers of truth 'whose lives have been embittered and their good names blasted by the mistaken zeal of Bibliolaters', on the one hand, and to the attempts of harmonising between the two extremities by men who wasted their life in enforcing "the generous new wine of Science into the old bottles of Judaism, compelled by the outcry of the same strong party"¹, on the other. He remarked that whenever there was a mental battle between the two opposing groups, the holders of the old cosmology retreated either bleeding or half-slain. He declared that the days of revenge and plotting against scientists had disappeared, and that it was the turn of science to come to the throne of civilisation in the nineteenth century. He portrayed the decline of religious authorities in an artistic scene in which he saw the 'Extinguished theologians lie about the cradle of every science as the strangled snakes beside that of Hercules', while his picture of philosophers and scientists was extremely different because they had no 'aggressive tendencies', malicious wrath, and mischievous manners, and because they knew the right way to truth by aiming first at releasing the human mind from the abyss of illusions, and the fastened souls from the wheels of worn traditions.²

1. Ibid., P.52.

2. Huxley's defence of science readily reminds us of William Draper's account in his book entitled: The Conflict Between Religion and Science (1874) in which he points out: "As to science, she has never sought to ally herself to civil power. She has never attempted to throw odium or inflict social ruin on any human being, she has never subjected any one to mental torment, physical torture, least of all death, for the purpose of upholding or promoting her ideas. She presents herself unstained by cruelties and crimes. But in the Vatican - we have only to recall the Inquisition - the hands that are now raised in appeals to the Most Merciful are crimsoned. They have been steeped in Blood." (Preface, P.xi.) (The 1910 edition)

Huxley, afterwards, examined the contrast between the doctrine of special creation and transmutation. He affirmed that the divine doctrine had neither logical nor scientific basis whereby it could be verified, and that the geological evidence heavily rated against it. He denied the teleological arguments held by those believers who often related the faculties of plants and animals to a Designer, and who announced that instincts could not be understood without a miraculous intervention. Rejecting the teleological view, Huxley declared that such reasoning was the very ignorance and that science must be far from connecting natural causes of life on earth with supernatural powers. "But the hypothesis of special creation," he wrote, "is not only a mere specious mask for our ignorance; its existence in Biology marks the youth and imperfection of the science."¹ In order to detach such a doctrine from the field of scientific research, he referred to the superstitious and foolish interpretations of the natural phenomena of lightning as the angel of God, of plague, pestilence, and famine as "the unavoidable tortures inflicted by wrathful Omnipotence upon His helpless handiwork."² He stressed that science removed such superstitious views from its departments and forced what was considered as divine tortures to the control of man. Attacking the scientists who held the traditional doctrine of creation and denouncing their naive explanation of the origin of species, Huxley pointed out that there were many established facts such as "Man is more like a gorilla than a gorilla is like a lemur," and that when a student of science sought for an explanation of such facts from these scientists, "the reply he receives is, in substance, of Oriental simplicity and brevity - "Mashalla! it so pleases God!"³ Thus

1. T.H. Huxley, "The Origin of Species", op. cit., P.58.

2. Ibid., P.59.

3. Ibid., P.61.

he maintained that the views that creatures were born in certain forms only to please God, and that the rudimentary organs were found only to satisfy His Will, must never be admitted as evidence at all, and that science should be ashamed of herself by accepting "such verbal hocus-pocus" as facts. He wanted to render science respectable by removing it from ecclesiastical influence.

Huxley spoke of the labours of an obscure French diplomat, Benoit de Maillet, who spent about sixteen years in Egypt quietly working on the question of mutability which he displayed in his only scientific book entitled Telliamed which first appeared to the world in 1748, though it was printed in 1735, three years before his death. Huxley appreciated the geological facts presented in this work for they appeared to anticipate the facts which were developed by Charles Lyell in the 1830's. Huxley attributed de Maillet's hesitation in publishing his book some time earlier to the inquisitorial pressure of Catholic France.

Huxley also appreciated Lamarck's observations on the descent with modification, his classification of plants and animals according to their evolution, and his assumption of a long span of time for such development, but he asserted that Lamarck's views of wants in animals on which the latter laid much stress, was the real cause for the failure of his theory. Moreover, Huxley ascribed this failure to Lamarck's unsupported conclusions and to Cuvier's influence as a distinguished holder of the supernatural doctrine of creation and the so-called "Dictator of Science" in the early nineteenth century. In spite of his appreciation of Lamarck's work, Huxley did not accept his theory of modification based on external circumstances and the needs of animals, the phenomena which Lamarck thought to be the natural causes for variations, for he found Darwin's principle of natural selection more reasonable.

Huxley admired Darwin's theory because of two things: first, the easy perception of its principles; secondly, because the evidence offered in its favour was, more or less, scientific and admissible. He illustrated this by arguing that Darwin's evidence was established in three phases: first, that by artificial selection new variations could be obtained, secondly, that such an unartificial selection was found in Nature because of natural laws; thirdly, that the relation between different species had to be seen in the framework of the general doctrine of evolution, and what seemed to be inexplicable for some reason would not necessarily be in contrast to the general rule. Nevertheless, not all of Darwin's attempts to provide evidence of evolution were fully admitted by Huxley, as his critical comments revealed. He asserted that there was no demonstration for the origination of any species by either artificial or natural selection, nor was there evidence for infertility between the variations of a distinct race of animals with their original stock so far as to form species of their own. He remarked that Darwin himself was "aware of this weak point".¹

Huxley's arguments for the law of natural selection seemed to be more deductive than experimental since he held that natural laws had every reason to seem as 'intelligent' in the process of selection as did domestic breeding. In order to show how Nature was intelligent he gave an example of how a shower of rain could separate between the uncountable particles of sand and salt, a process to which man's intelligence was petrified. He supported Darwin's argument against the absence of transitional forms between species, the objection which once brought about the downfall of Lamarck's theory, by finding no need for an intermediate form between two species descended from one common form. Huxley's

1. Ibid., P.75.

doubts concerning the correctness of Darwin's theory appeared in his closing words in which he compared it with the Copernican hypothesis which was succeeded by the excellent labours of Johann Kepler and Sir Isaac Newton, a comparison by which he meant, of course, that someone would, sooner or later, work out the puzzle of the origin of species. Moreover, he stated that if Darwin's philosophical inferences happened to be incorrect, "the book would still be the best of its kind - the most compendious statement of well-sifted facts bearing on the doctrine of species that has ever appeared."¹

The article accurately explains the question of species as presented by Darwin and some of his predecessors and contemporaries. It provides the reader with scientific facts as well as philosophical information which moves from the horizon of biology to the department of religion. With regard to Huxley's attitude towards religion in this article we see that his language is more aggressive and destructive than that of his earlier attempt. The article reveals the conflict between the physical interpretation of the origin of life and the supernatural. It asserts that the logic of religion is absolutely inconsistent with scientific naturalism, and that scientific truth must be the only criterion by which any truth must be judged, not the Biblical. With regard to philosophy the article objects to the teleological interpretation of the morphological and physiological construction of species. Such objection may foreshadow Huxley's adoption of Darwin's view that the relation between species is a mere corollary of blind chance, though Huxley has not treated the issue of chance here. However, the article is exquisite in explaining the facts, defining the scientific terms, and exposing the ideas and arguments. It is one of the best treatises which was ever written in favour of Darwinism in its early reception.

1. Ibid., P.78.

One of the most interesting conflicts between the spokesmen for religion and science was that between Samuel Wilberforce, Bishop of Oxford, and Thomas Huxley over the origin of species as expounded by Charles Darwin. It was in June 1860 that this clash took place at the meeting of the British Association. Later writers came to regard the episode as a triumph of science over religion. It was difficult for the religious authorities within the British Association to submit to secular ideas entertained by a few young scientists of whom Darwin and Huxley were prominent examples. It was also intolerable for them that someone like Huxley, who emerged from an obscure family of neither wealth nor social eminence, should confront the current ideas and the traditions which were based on the teachings of orthodoxy. Huxley's devotion to scientific truth and his moral conduct as seen in his assiduity and love of his career were the real source for his success. In fact, his contribution to the theory of evolution, and eventually to science, not only made a scientific position for him, but also a far-famed glory for the scientific cult of Britain. At the centenary of Huxley's birth in 1925, Julian Huxley, commemorating the occasion, touched upon the multitude of merits and interests of this extraordinary thinker by saying:

He (T.H. Huxley) believed passionately not only in the advancement of knowledge, but also an absolute Truth and an absolute Goodness, ¹ in hard work and rigid morality, in beauty of character and of art.

In this article Julian Huxley defended his grandfather's attitude towards religion, and tried to find justifications for the agnosticism² of his relative. This philsoptic view acted as a thunder-

1. "Thomas Henry Huxley and Religion" by Julian Huxley, Essays in Popular Sciences (1929), P.139.
2. Agnostic is a term coined by Thomas Huxley himself in 1869.

storm over the tranquility of the Christian faith. In fact, Julian Huxley's defence was based on the assumption that if Huxley's 'circumstances' had been different - that is if he had not been a scientist - he would have never been an agnostic, and furthermore, he would have contributed by his 'Catholic Taste' to religious thought which could have been of great value. He added that the domestic attitude of the theologians who adopted inadequate evidence for faith was one of the circumstances which resulted in Huxley's agnosticism. Although such a suggestion may be taken into consideration, it is inconsistent with two facts: first, the nature of science which is in contrast to religion; secondly, Huxley's lifelong controversies with the religious authorities, as our study will show. Yet Julian Huxley sees that Huxley's attitude, in a sense, has contributed to religion. He stresses that Huxley's attack was not aimed at religion but at the theologians. Perhaps this claim makes no *great* difference in the conflict between what is supernatural, ensuing from religion, and what is known as scientific fact.

Julian Huxley's defence goes further by suggesting the substitution of the word 'religion' for 'theology' in a passage cited from Huxley's essay on "The Evolution of Theology", only to show that Huxley wanted to apply scientific methods to religious inquiry. Perhaps it is worth citing what Thomas Huxley wrote about theology:

From my present point of view, theology is regarded as a natural product of the operations of the human mind, under the conditions of its existence, just as any other branch of science, or, the arts or architecture or music or painting, are such a product.

There is no ground to agree with Julian Huxley whether Huxley really wanted such a reform or not, and the passage reveals nothing of the alleged

1. Julian Huxley, Essays on Popular Sciences, op. cit., P.141.

reform, though it tells that theology can be taken as a kind of science or art. Moreover, there is every reason to believe that Huxley's attitude was more destructive to the Christian faith and dogma than that of any atheist thinker at the time. Huxley's perspectives can be traced in his several clashes with the theologians amongst whom Samuel Wilberforce comes first.

Armed with a distinguished background in mathematics, an eloquence at oratory, and an evangelical audience, Wilberforce was prepared to smash Darwin's theory of evolution at the celebrated meeting at Oxford in 1860, the year in which Huxley delivered some lectures to the laymen in Oxford in order to explain to them the facts about "The Relation of Man to Lower Animals".¹ Biographers of Huxley, Darwin, and Lyell stated that it was a mere chance that Robert Chambers, the writer of Vestiges, met Huxley and persuaded him to attend the meeting when the latter was intending to leave for Handwicke, near Reading, to join his wife.

The meeting has a particular importance having been a clash on various levels: a conflict between science and orthodoxy, between science and philosophy, and at a personal level as well; all was in an open debate whose consequences not only affected the large audience at Oxford, but also went beyond that as to maintain the dignity of science in the British society. It was on 30th June, 1860, that the heroes of orthodoxy and scientific naturalism met to discuss the question of species, and, eventually of man's descent from either apes or angels. Historians of the event wrote that there on the platform of the crowded hall at Oxford sat J.S. Henslow,² Samuel Wilberforce, John William Draper, John

1. Leonard Huxley, The Life and Letters of Thomas Huxley, (1900), P.179.

2. J.S. Henslow (1796 - 1861) was Darwin's teacher and friend, Professor of Botany at Cambridge University.

Hooker, John Lubbock, Thomas Huxley, and others. J.W. Draper, the Anglo-American physician, chemist, and man of letters, read a paper on the "Intellectual Development of Europe Considered with Reference to the View of Mr. Darwin". His address was followed by a debate under the supervision of Henslow, the President of the Saturday Meeting, who frequently had to insist that the discussion be based on scientific grounds. Bishop Wilberforce was called upon by the audience to speak his mind. In a spirit of authority supported by an enthusiastic, largely clerical audience, the Bishop tackled the question of species and ended his talk in a personal insult. If recording facilities had been available at the time, perhaps we would have been able to listen to Wilberforce's eloquence, and his rudeness. However, his arguments appeared in the Quarterly Review a few days after the meeting, and it is easy enough to see whether his opposition to Darwinism was of specific importance.

In his review of The Origin of Species¹ Wilberforce cunningly appreciated Darwin's contribution to the literature of natural history by his careful observations and intelligent insight, and described the facts of the book, a 'speculation' of many years, as: 'All sparkle with the colours of fancy and the lights of imagination.'² In this ironic exposition Wilberforce cited certain passages to show how the principle of natural selection was ostensibly at work, particularly in the realms of plants and animals. But he suddenly rushed to discuss Darwin's conclusion in which the latter remarked: "Therefore, ... I should infer from analogy that probably all the organic beings which have ever lived on this earth (man therefore of course included) have descended from some primordial form into which life was first breathed

1. "On the Origin of Species, by means of Natural Selection; or the Preservation of Favoured Races in the Struggle for Life, by Charles Darwin, M.A., F.R.S., London, 1860", Samuel Wilberforce, The Quarterly Review, (July - October, 1860), vol. 108, pp. 225 - 264.

2. *Ibid.*, P.226.

by the Creator,"¹ only to reject it by saying that such inference was incompatible with both the logic of philosophy and the wisdom of orthodoxy. He demanded Darwin to offer evidence like that of Newton demonstrating his theory of gravitation. Although Darwin put forward a vast amount of accumulated data available at the time, his evidence was far from being as plain as the demonstration of gravitation, because, apart from being different in its nature, Darwin's theory needed the support of many sciences which were imperfect. Thus from Wilberforce's point of view, the theory of evolution had no fundamental principles.

In order to devalue Darwin's principle of Struggle for Life, Wilberforce cited Lucretius to show that the principle was an ancient speculation. He stated that if the principle could be seen at work in the worlds of plants and animals, it must be excluded from the world of man. He rejected the view of the gradual and perpetual perfection as depicted in Darwin's principle of natural selection. From Darwin he demanded two proofs: first, to show him how the principle of competition was actually at work concerning the 'favourable variations in the individuals of any species,' secondly, to demonstrate that there was a natural 'power of accumulating such favourable variations through successive descents.'² Assuming no evidence for these two queries, Wilberforce came to the judgement that: failing the establishment of either of the last two propositions, Mr. Darwin's whole theory falls to pieces.³ He denied that Nature itself tended to select distinguished variations in the untamed animals even if such a selection was within a long time different from that needed for domestic breeding. He held that Darwin's arguments for this view were mere assumptions which had

1. Ibid., P.231; The Origin of Species, op. cit., P.484.

2. Ibid., P.234.

3. Ibid., P.234.

nothing to do with accurate observation at all. He argued that Nature provided variations with a quality of 'monstrosity' by which they tended to return to the original type. He also rejected the idea that a variation would excel the original type and change itself by an unreasonable power into a new species. He attributed Darwin's failure to the absence of evidence in support of his contention. Disguising the facts and concealing the proofs adduced by his opponent, Wilberforce offered his own inference by asking: "Is it credible that all favourable variations of turnips are tending to become men?" By such questions Wilberforce tried, of course, to portray natural laws as deformed entities and false concepts. In addition, he aimed at destroying scientific naturalism as it then appeared, by changing its scientific facts into ironic images. Perhaps it is strange to expect such arguments from a thinker with a scientific background unless he is a born theologian and Wilberforce seems to be so.

Wilberforce attacked Darwin's scientific method and his way of deduction by which the latter looked for evidence in the deep strata of the earth as well as in the supposition of a prolonged period of time - 300 million years - in order to make his theory of transmutation acceptable in one way or another, particularly what was related to the difficulty of finding the missing links between animal species. Wilberforce wrote, for instance, that: 'the geological record is absolutely inconsistent with the truth of Mr. Darwin's theory,' and asserted that the absence of such evidence counted heavily against Darwin's theory. He often cited Richard Owen and adopted his arguments and conclusions which seemed to be against the theory of evolution, while he did so concerning Darwin only to show what seemed to him as contradictory in the latter's statements. Moreover, he referred to objections which Darwin himself considered as difficulties encountering his theory.

Wilberforce went further in his attack by quoting Adam Sedgwick's concept of experimental philosophy, a truth from which Darwin's hypothesis was far away. Rejecting the prolonged time proposed by Darwin for evolution, he described its propounder as a 'great magician' who lengthened and shortened the time span according to his will. Moreover, he asserted that a speculative mode prevailed all over what Darwin considered as scientific facts by drawing attention to Erasmus Darwin's humorous treatment of the issues of transmutation and similitude in animals. He added that in such a spirit of humour, evolutionary views were also conveyed by Frere and Canning in the Poetry of the Anti-Jacobin of which Wilberforce once cited a long passage. All that Wilberforce wanted was to dwarf Darwin's work on species and put it under a speculative label, particularly when one traces the recurrence of words denoting this sense in his article. It seems that by the reiteration of words like: 'assumptions, hypothesis, fancy, alleged facts, speculation, shadowy, and image', Wilberforce tries to affect the reader's mind, forgetting that they serve to convey his own agitated temper which appears in many passages of which few specimens are worth quoting. Commenting on a certain passage in The Origin in which Darwin refutes the view of independent creation, Wilberforce wrote:

This passage supplies that the transmutationist endeavours to₁ prop up his utterly rotten fabric of guess and speculation.

He adds:

In the name of all true philosophy we protest against such a mode of dealing with nature, as utterly dishonourable to all natural science... In the 'Arabian Nights' we are not offended as at an impossibility when Amina sprinkles her husband with water and transforms him into a dog, but we cannot open the august door of the venerable₂ temple of scientific truth to the genii and magicians of romance.

Wilberforce maintained that Darwin, by indulging himself in idle speculations, lost his reputation as a naturalist whose previous contributions

1. Ibid., P.253.
2. Ibid., P.250.

to science had been highly regarded. But to the dissatisfaction of Wilberforce the later years turned out to prove the opposite to what Wilberforce proclaimed. No scientist (except Wilberforce) was to think of Darwin's work in terms of fiction and romance, and the theory still enjoys a key position in the hierarchy of natural science today.

At the end of his article, Wilberforce talked of the evolutionary theory as opposing both sound thought and Revelation. He found a contrast between the two concepts: the Old God of Truth and the god of Nature. He fiercely attacked naturalism and the works of those naturalists who 'by fraud and falsehood' tried to show that natural facts were in contrast to Revelation, and he described their attempts as "the ever-ready feeble-minded dishonesty of lying for God."¹ When he was defending Christianity, he found that Chalmers' words were to the point, when the latter announced at the British Association in 1833 that: "Christianity had everything to hope and nothing to fear from the advancement of philosophy."² He wanted to maintain that Christianity was indulgent with the natural philosophy which appeared in the 18th century and the early decades of the 19th, the philosophy which proved to be consistent with Revelation. Nevertheless, he remarked that the principle of natural selection, particularly its application to man, was extremely incompatible with the whole faculties of man, spiritual, moral, and structural. To degrade man, who came to the earth in the image of God, to a bestial origin was, to Wilberforce, a deviation from the right way; and to ignore man's powers of reason, free will, and articulation, was completely inconsistent with the attributes of God who conferred these graces upon His representatives on earth. The notion of natural selection proposed by Darwin was described by Wilberforce as 'a dishonouring view

1. Ibid., P.256.

2. Ibid., P.257.

of nature', because it retained the power of creation from God and delivered it to organisms in a self-developing process. He also denied the notion of a tendency of perfection existing in both worlds of plants and animals, man included. Thus Wilberforce not only rejected the view that man was descended from the ape, but also the whole theory of transmutation.

The issue of man's bestial origin was the everyday fun of meetings, newspapers, and magazines of the time, and it became, later, an inseparable part of the historic cult of the nineteenth century. In a humorous spirit, Punch, for instance, epitomised the quarrel between Richard Owen and Thomas Huxley over the new issue:

Then Huxley and Owen
 With rivalry glowing,
 With pen and ink rush to the scratch;
 Tis brain versus brain,
 Till one them's slain;
 By Jove! it will be a good match!
 Next Huxley replies
 That Owen he lies
 And garbles his Latin quotation ,
 That his facts are not new,
 His mistakes not a few,
 Detrimental to his reputation.
 To twice slay the slain,
 By dint of the brain.
 (Thus Huxley concludes his review),
 Is but labour in vain
 Unproductive of gain
 And so I shall bid you "Adieu!"¹

It was in 1858 that the first conflict between Richard Owen and Huxley occurred. Huxley delivered a paper "On the Theory of the Vertebrate Skull" before the Royal Society whose chairman was Sir Richard Owen himself. In this paper Huxley disclosed the inconsistency of Owen's anatomical views which he accorded with his theological doctrines.

W. Irvine, writer of Apes, Angels, and Victorians, remarked that Huxley's investigations on skulls "enabled him not only to demolish Owen, but to

1. Cyril Bibby, op cit., pp. 47 - 48.

produce his own epoch-making book on Man's Place in Nature."¹

Wilberforce's article is overwhelmed with a furious tone. It aimed at undermining confidence in the scientific facts adduced by Darwin in his treatment of the origin of species. Although it is a long review, it may be justified by the monstrous size of Darwin's abstract and its many issues. One may agree with Leonard Huxley, who remarked about Wilberforce's British Association talk that "From the scientific point of view, the speech was of small value", even if one assumes that the bias of the son to his father is inevitable. For a close examination of Wilberforce's words shows that they employ every hostility and prejudice against the new doctrine, particularly in the ironic manner of its exposition and the militant expressions addressed to Darwin whose modesty was a living example among the Victorian scientists. Wilberforce's arguments are based on the stale facts which were adopted by the scientists before the appearance of the scientific theory of evolution. His account of Lyell's attitude towards the theory and his hope that Lyell might help in refuting it has turned out to be disappointing because Lyell, later, has admitted the theory,² though his fluctuating standpoint was retained for a period.

Wilberforce's rejection of the view of transmutation and that variations became species in the succeeding generations, has been based on the argument that pigeons, for instance, tend to lose their variations as soon as they are far from the breeder's care, and when they are found in new circumstances. In order to support his idea of relapse in animals, Wilberforce credits Prichard's investigations which

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1. William Irvine, Apes, Angels, and Victorians: A Joint Biography of Darwin and Huxley, (London: Weidenfeld & Nicolson, 1955), P.41.
 2. A.R. Wallace, "Sir Charles Lyell on Geological Climates and the Origin of Species", The Quarterly Review (1869), P.381; W. Irvine, op. cit., pp. 186 - 7.

appeared in his work on the natural history of man¹ in which the latter writes that the European horses which were taken to America have become wild in the new environment, a phenomenon which is 'congenial to their nature', and they have lost their characters of domestication. Refuting the transformation of variations into species, Wilberforce argues that dogs of many varieties differ in treating their species from that of a wolf or a fox, and this animal behaviour is enough to teach the philosopher the conception of species. Such an argument does not, I think, work out the question of species and by this unfriendly manner between the dog and the wolf one cannot deny their descent from a common ancestor, apart from the fact that their classification often depend on their resemblance in the form, not on behaviour which is a phenomenon based on animal instinct or perhaps on past experience. It may be argued, but not seriously, that such a hostile enmity between the dog and the wolf, for instance, may go back to their close relation in blood, and that the deviation of an individual from the original type into a variation has been so shocking that it is settled, as an instinctive manner, like that enmity which appears from time to time between the religious sects or the relatives, or the members of one nation. Thus Wilberforce's belief in the fixity of species necessarily leads to the belief in the doctrine of special creation.

One of the most interesting points in the essay is Wilberforce's reference to social discrimination between the black and white which was employed in Darwin's observations in certain animal societies. He associates Darwin's view that the brighter ants and bees instinctively enslave the darker races with the slave trade; and he even goes beyond that to see Darwin's view as a justification for the negro bondage. Although he conceives the danger of applying such a phenomenon

1. J.C. Prichard (1786 - 1848), Lectures on Physiology, Zoology and the Natural History of Man (London: 1819).

in animal societies to human ones, he does not anticipate what will come of it if the race doctrine were adopted by nations, as was the case in the imperial England in the last two decades of the nineteenth century and in the racial Germany of Rosenberg in the early decades of our century. Perhaps it is worthwhile appreciating Wilberforce's insight because he was the first to predict the social involvements of Darwinism, particularly the notion of basing instinctive racial discrimination on scientific grounds. Thus it seems that the notion of race superiority which was once a myth or a religious legend had become a scientific fact supported by the holders of the theory of evolution and progress. Perhaps the view of racial superiority is still enjoying sympathy and power among a few communities and circles, and a close examination of the political regimes in England and the Arab world may prove the significance of my opinion.

Perhaps, Wilberforce felt how far the new doctrine would affect Christianity, particularly its appearance at a time in which atheism began to find its way easily to the masses by the attempts of the positivists and free thinkers. His arguments in search of the truth appeal to sentiment rather than the mind, as do the majority of religious writers. This article, which was supposed to contain Wilberforce's arguments at the Oxford meeting, conceals the personal vulgarity addressed to Huxley, though it lacks no elements of rudeness and offence.

Macmillan's Magazine¹ relates the controversy at Oxford

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1. Macmillan's Magazine was founded by the publishing establishment of Macmillan in 1859 and continued until 1907^a. Walter Graham remarked that the magazine was not mainly literary, for it devoted much space to history, travel sketches, moral articles, politics and fiction. The editors, over this period, were David Masson, George Grove, John Morley, and Mowbray Morris. Walter Houghton asserted that when Morris succeeded Morley, the periodical came to focus on literature rather than on political and religious matters. The serial inclusion of works such as James' The Portrait of a Lady and Hardy's The Woodlanders characterized the magazine till its disappearance.
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- a. Walter Graham, English Literary Periodicals, op. cit., pp. 301 - 302, 303, 335n; Walter E. Houghton, The Wellesley Index to Victorian Periodicals 1824 - 1900, op. cit., pp. 554 - 555.

in an article entitled: "A Popular Exposition of Mr. Darwin on the Origin of Species"¹ which appeared in December, 1860. In this article Henry Fawcett remarked that Darwin's work divided the scientific authorities into two opposing but well balanced camps: Richard Owen, William Hopkins, Sir Benjamin Brodie, and Adam Sedgwick, for instance, on the one side, and T. Huxley, J.S. Henslow, J.D. Hooker, and Charles Lyell, on the other. Tackling the question of species, the subject matter of the difference between the rivals, Fawcett refuted the ordinary definition of species as 'two animals or vegetables belong to different species when they are infertile with each other',² by pointing to the difficulty of applying this definition to the existing organisms and the past ones as well. He expounded that the essential difference lay in the fact that species were arbitrarily classified by most scientists. He stated that according to geological records all the scientists admitted that new species were introduced into the world, and that they were different from the old ones which had been extinguished.

He argued that if one accepted the popular definition of species, one should assume that the development of a species from the parental stock would never entitle it to constitute a new species, and that every new species must be conceived as a result of a miraculous birth. In answer to how one would conceive this special creation, Henry Fawcett wrote: "We are powerless to explain by physical causes this miracle as we are any other."³ He recognized that man's ignorance of the origin was absolute and considered the problem as the 'mystery of mysteries'. Yet he anticipated that, no doubt, someone would work out the puzzle, and serve natural history as did Newton to Astronomy. But, unfortunately, over a century has now elapsed and the mystery is still there as it was left

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1. "A Popular Exposition of Mr. Darwin on the Origin of Species", by Henry Fawcett, Macmillan's Magazine (November 1860 - April 1861), vol.iii., pp. 81 - 92. Fawcett (1833 - 1883) was a professor of political economy at Cambridge.
 2. Ibid., P.82.
 3. Ibid., P.83.

without any scientific or rational solution. He pointed out that religion had embraced the Newtonian theory of gravitation and found it "a hymn of praise" to God, and it would be so concerning the theory of transmutation when the scientists themselves settled the matter. Although he announced at the beginning of his essay that his "object was neither to attack nor to defend," any of the disputing parties, he defended Darwin's method of research and his way of deduction by rejecting the "meaningless phrases" which appeared in the Quarterly Review by which he meant, of course, Wilberforce's words mentioned above. He asserted that Darwin himself presented his theory on hypothetical grounds. Afterwards, Fawcett illustrated how Darwin's method of investigation was in accord with the deductive method maintained by J.S. Mill, the famous logician of the epoch. In support of scientific naturalism he explained how the breeders of animals and the botanists as well availed themselves of two natural laws with which they were familiar, namely, the tendency towards variations and the tendency to inherit the peculiarities of the individual. He remarked that Darwin believed in a similar power of selection existing in nature, a power which was established on the law of struggle for existence. Darwin showed, he said, how this principle of selection was at work in the kingdoms of plants and animals by demonstrating the enormous increase of a pair of elephants in a certain period, an instance which was often cited by the old and recent critics. He summed up that the principle of struggle for life was the agency by which Darwin explained the aspect of variations, while by the process of natural selection the inherited peculiarities were accumulated in an individual which largely deviated from the original type in order to produce a new species.

After the illustrations of the theory, Fawcett presented the main arguments for and against Darwinism. The anti-Darwinians argued, he said, that the animals which were discovered in the ancient tombs as

sculptures and mummies three thousand years ago sustained no difference between the old and new forms of species and that the fossil records in Egypt as well as in the first stratum of the earth in Switzerland, for instance, also showed no change in form for the last three thousand years. Such arguments were refuted by the pro-Darwinians on the ground that the extinction of ancient species and the appearance of new ones could not be conceived except in the light of prolonged periods of time which were considered as geological epochs. With regard to the Egyptian remains, the circumstances of life were not sufficient to produce any change in the kingdom of animals as well as in the physical structure of the Nile itself because a span of three thousand years was too short to show how the laws of struggle for existence and natural selection were at work.

One of the interesting points inferred by Fawcett was that by explaining how natural laws were regulating life, neither Darwin nor his supporters aimed at the detraction of the Supreme Being. He found no harm done to religion by knowing how the laws of generation developed on earth so long as the original species were placed on it by the Will of the Creator. He referred to the personal vulgarity which appeared in Wilberforce's talk at the Oxford meeting. He regretted to see that a professor of science was humiliated by being asked whether through his grandfather or grandmother he knew his ape ancestors. Presenting Huxley's retort and the effect it made on the audience, Fawcett remarked:

The Professor aptly replied to his assailant by remarking that man's remote descent from an ape was not so degrading to his dignity as the employment of oratorical powers to misguide the multitude by throwing ridicule upon a scientific discussion. The retort was so justly deserved, and so inimitable in its manner, that no one who was present can ever forget the impression it made.

1. Ibid., P.89.

Although this scene was reported by many sources in different words, they all agreed on the insolent tone it contained. The biographer of T. Huxley related the incident and largely cited the newspapers, magazines, and the critical works which appeared three decades later. The scene was often conveyed in a dramatic manner as to call attention to its importance. Huxley's son, for instance, cited what the Macmillan's Magazine reported: "He (Huxley) was not ashamed to have a monkey for his ancestor; but he would be ashamed to be connected with a man who used great gifts to obscure the truth. No one doubted his meaning, and the effect was tremendous. One lady fainted and had to be carried out; I, for one, jumped out of my seat."¹

Henry Fawcett exposed the argument which indicated the difference between the geological views of Darwin and William Hopkins by illustrating that the former's view was based on the assumption that denudation in the poor (loose) tertiary strata had been too strong for any remains to be preserved and that the extant remains were too little to record what would satisfactorily show the link between the extinguished forms of the earlier geological ages and the existing ones. Darwin attributed, he said, the imperfection of geological records to two reasons: first, that the remains of animals and plants investigated by geologists covered but a small portion of the forms which really existed in any strata, secondly, that the intermediate species were numerous but they were removed by denudation. Objecting to Darwin's view, Fawcett quoted Hopkins' words which explained that rarely were any sedimentary strata wholly destroyed by denudation, and that denudations were often preceded by upheavals which caused the sloping position of strata, so that the lower parts of strata were far from the false effects of erosion, while their elevated parts were often subject to effective denudation. However,

1. Leonard Huxley, Life and Letters of T.H. Huxley (1900), vol.i.P.184.

the observations of both seemed to be logical but it remained the case that the missing link between the man and the ape, for instance, was still absent, apart from the attempt made by Haeckel to demonstrate it in the later decades of the nineteenth century, as we shall see. Although these observations could not be wholly rejected, they must not be fully taken as scientific facts.

On paleontological grounds, Fawcett believed that Darwin's position was strong because of the latest discoveries of the time which seemed to support the theory of transmutation. It was held, he said, that there was no existence of the Tertiary sessile cirripedes and the Teleostean fishes in the secondary strata but M. Bosquet, a Belgian paleontologist, confirmed their existence by sending to Darwin a drawing of a specimen he found in the Belgian chalk; and so did M. Pictet concerning the Teleostean fishes which were supposed to be suddenly created. Fawcett also suggested that the similitude of organisms in the succeeding generations of the geological periods could not be interpreted without the theory of transmutation.

Fawcett did not find wisdom in Darwin's inference that all organisms had been descended from few species, and recommended that such speculations should not be stressed by Darwin or any of his sympathisers because they would add difficulties to the acceptance of the theory. He stated that the existing fossil records maintained the fact that many organisms had been succeeded by new species and the process was continually taking place. What he wanted to lay stress on was that life had been introduced into our planet by the power of God, and that the scientists should adhere to this fact. His belief was shown in his words: "Transmutationists and non-transmutationists must agree that life was originally introduced by an act of Creative Will, and a transmutationist need not necessarily concern himself with the number of forms which were thus first spontaneously created."¹ His argument for this doctrine was that

1. Ibid., P.91.

neither the breeders of animals nor the botanists could create any new species, in addition to the fact that man was always confronted with sterility when he tried to breed two varieties.

In fact, Fawcett did not join issue with any of the opposing camps. He showed great respect to scientific pursuits and justly denied the non-scientific spirit in the arguments against any scientific attempt which aims at clarifying the truth. His quotations from both Hopkins and Hooker, each supporting a group, reveal his objectivity. He carefully defines the conception of species and accurately exposes the arguments and views for and against the theory concerned. His statements about creation imply a belief in the 'special creation'. His suspicion about the future of Darwin's theory has proved no deep insight, though he appreciates The Origin of Species by describing it as: "One of our most interesting, most valuable, and most accurate treatise on natural history."¹

Darwin and the General Reader is one of the most distinguished works on the reception of Darwinism in the British periodicals from the appearance of the evolutionary theory till 1872. The author speaks of the excitement at the Oxford meeting of the British Association in 1860, and refers to the poor facilities of the journalists at the time who could not provide the full arguments of this historical incident. Both Ellegard and Cyril Bibby quote from a letter written by Huxley to Dr. Dyster, his friend in Wales, which appeared in both the Manchester Guardian and in Nature in 1953. However, the content of the letter maintains the incident in Huxley's own words.² Trying to convey as much as possible of the reports on the clash between Huxley and Wilberforce, Ellegard cites brief comments from the Guardian, Chambers' Journal, the

1. Ibid., P.92.

2. Alvar Ellegard, op. cit., P.68; Cyril Bibby, op. cit., P.41.

Athenaeum, and the Evening Star. He refers, for instance, to the subtle words of the Athenaeum which closes its report that: 'The dispute has at least made Oxford uncommonly lively during the week', and to the wonder of the Guardian about the future of the British Association 'when the Professors lose their tempers.'¹ Ellegard has no substantial comments on this controversy, nor has he assigned much room for its treatment, though he refers to it many times. His statement that: "The Oxford meeting was exceptionally meagrely reported", reveals that the contemporary reader of the daily papers had no idea about the first public quarrel between the authorities of religion and science. Perhaps the case was not as meagre as such because the novelty of the view that man was descended from the ape, its funny aspect, and its scientific seriousness in addition to what was written on it in the periodicals must have attracted the attention of the general reader as much as the specialist. However, the book has been supplied with two appendices and an index in which the author scholarly gives a statistical analysis of the reception of Darwinism in diagrams which have been skilfully designed to show the large number of periodicals involved in the dispute as well as presenting a bird's eye view of the development of the general attitude towards the evolutionary theory, apart from the index which gives a brief information about the writers concerned. The author is a researcher of the first order, an expert in his field, and his critical observations lack no good understanding. Because this work deals with the reception of Darwin's theory in the periodicals between 1859 - 1872, we shall be mainly introduced, in the following pages, to the controversies and contributions of the last three decades of the nineteenth century.

1. Ellegard, op. cit., pp.68 - 69.

In his interesting book on Thomas Huxley, Cyril Bibby refers to Huxley's performance as "Darwin's bulldog" in the clash at the Oxford meeting mentioned above. For this 'famous battle', as he calls it, Bibby assigns less than two pages including Huxley's letter to Dyster. He sees that the 1860's were hard times for scientific naturalism, while the following decade saw the scientific establishment of the evolutionary theory mostly owing to the efforts of the Extraordinary Scientist - Huxley - who made scientism respectable, and in his own words: "'Darwin's bulldog' had done more than any man to compel that respect."¹ Bibby's book covers Huxley's essential elements of life and work. It shows Huxley's making of a scientist, his cast of mind, and his life-long struggle defending the case of scientific naturalism and establishing a new religion and a new concept of morality. In fact, Huxley's labours have been displayed in a literature which is a blend of science, philosophy, and art.

In the 'Preface' to his work, Bibby writes: "If, as a matter of fact, Huxley had done no more than establish the right of a 'dangerous' scientific theory to a fair hearing against the denunciations of orthodoxy, he would still deserve an honoured place in the history of science."² How can we explain this statement compared to that of Julian Huxley concerning the 'Catholic taste' of his namesake? Does it not reveal that Huxley's talent was devoted to destroy orthodoxy in order to establish the scientific religion? Huxley's religious attitude appears in his work entitled Science and Christian Tradition as we shall see soon. However, Bibby refers to Huxley's clashes with the opponents of naturalism, but he hardly analyses the substance of the controversies. The reader of the book may enjoy the narration of events, their occasions, and their

1. Cyril Bibby, op. cit., P.42.

2. Ibid., 'Preface', p.x.

chronological exposition, but he fails to find the critique by which he weighs the originality of Huxley's thought. The work is scholarly arranged and in a spirit of respect and admiration it follows up the development of the Victorian thinker, but it fails to show accurately Huxley's contributions to the world of science. The author himself recognizes that: "the assessment of a scientist is a difficult task,"¹ yet he cites many literary men of whom Leslie Stephen, Bonamy Dobrée, and Houston Peterson are examples. He quotes, for instance, Peterson's words in the latter's work Huxley: Prophet of Science (1932):

Huxley is not only a touchstone for the last half of the nineteenth century. He is a power over us today ... because he happened to be a literary genius, as well as a biologist.²

Moreover, the book reflects the hard labours of its author as well as his love of the "Scientist Extraordinary", a sentiment which he also evokes in his reader.

II. VICTORIAN INTELLECTUALS ON THE QUESTIONS OF IMMORTALITY AND THE SOUL IN THE 1870's.

The Reverend Baldwin Brown acknowledged the "evil days" on which theology had fallen. "The theologians," he wrote, "... are filled with rebuke from all sides. They are bidden to be silent, for their day is over. But some things, like Nature, are hard to get rid of."³ The theory of evolution implicitly supported unbelief in two ways: first, by considering man's creation as a physical process based on chance, secondly, by affirming that the best life was for the fittest, not the most benevolent.

Since controversy is commonly regarded as a characteristic

1. Ibid., 'Preface', p.ix.

2. Ibid., P.152.

3. "A Modern Symposium", The Rev. Baldwin Brown, The Nineteenth Century (Oct., 1877), "The Soul and Future Life", vol.ii., P.511.

of Victorian intellectual life, it is worthy, then, looking at the impact of this scientific doctrine as it was exhibited in several articles and symposiums¹ which appeared in some periodicals of the time.

Frederic Harrison, a Positivist leader, in an article entitled "The Soul and Future Life" which appeared in The Nineteenth Century for June and July, 1877, announced that the positive doctrine was different from both Christianity and Materialism. He said that his creed of immortality was not like that of the drum "so gross, so sensual, so indolent, so selfish,"² by which he meant, of course, the Christian creed. Describing the conception of his school, Harrison stated:

There is ampler scope for the spiritual life, for moral responsibility, for the world beyond the grave, its hopes and its duties; which remain to us perfectly real without the unintelligible hypothesis.³

He rejected the ordinary view of eternity and soul. What was eternal, to him, were those duties and efforts exerted for the benefit of Man on earth, not in heaven. He taught that the future life was: 'the combination of intellectual and moral energy which is the source of religion.'⁴ He believed that the effects of thinking, feeling and acting in the present would never die. His Positivist conception of eternity was eloquently and precisely put in these words: 'As we live for others in life, so we live in others after death, as others have lived in us, and all for the common race.'⁵ Thus the actions of the

1. The symposium was for The Nineteenth Century, a discussion of an important topic by ten thinkers of various trends and interests. Each of them was supposed to have seen all that has been written on the subject concerned before his own contribution; and only the proposer of the topic has the right to conclude the symposium.
2. "The Soul and Future Life", Frederic Harrison, The Nineteenth Century, vol.i., P.841.
3. Ibid., (June, 1877), P.632.
4. Ibid., P.628.
5. Ibid., (July, 1877), P.839.

dead, bad as well as good, live in the minds of the living beings, something which may count against Harrison's view. Harrison insisted on the connexion between the intellectual, emotional, and physical faculties. He defined man's soul as: "the combined activity of the human powers organised around the highest of them we call the soul."¹ He attacked the traditional concept of soul as an indescribable thing which had no place in man's body. The positivist meaning of 'soul', he illustrated, was: "the consensus of the faculties which observation discovers in the human organism."²

Harrison believed in the existence of a spiritual life which he considered as the highest part of man's constitution. He announced that his system of philosophy condemned the pure physical interpretations of human life. He attacked the materialists who held that the end of man was like that of a sparrow. Although he was happy that those 'Professors of grey matter' were rarely found in his country, he described their doctrine, saying: "It is a corrupting doctrine to open a brain, and tell us that devotion is a definite molecular change in this and that convolution of grey pulp, and that if man is the first of living animals, he passes away after a short space like the beasts that perish."³ Harrison argued that the fault of the Materialist School was that it rested the intellectual, emotional, and moral faculties on an exclusively physical basis. Materialists disregarded both philosophy and religion which constituted the history of human traditions and knowledge. He blamed the scientists who had neither a religious mind, nor a spiritual experience. He remarked: "The true Materialism lies in the habit of scientific specialists to neglect all

1. Ibid., pp. 627 - 28 (June, 1877).

2. Ibid., P.834 (July, 1877)

3. Ibid., (June, 1877), P.630.

philosophical and religious synthesis."¹ He also held that it was not the business of science to moralise beliefs and work out the problems of human life, but it was the task of religion and philosophy to do so.

Some vague conceptions and contradictions appeared in Harrison's statements concerning the 'consensus' of faculties in man. He said that his school "affirms that Man loves, thinks, acts, not that the ganglia, or the sinuses, or any organ of man, loves and thinks and acts." But a little later he also asserted that without body there would be no existence of those faculties; he said: "And to talk to us about a body-less being thinking and loving is simply to talk about the thoughts and feelings of Nothing."² It is clear that Harrison regards man as distinct from other beings, almost belonging to another world of creation chiefly because of his intellectual and emotional powers.

T.H. Huxley could not bear Harrison's rude treatment of scientists. He argued that doubtless there would be some men of science who believed in that "corrupting doctrine" which taught that "devotion is a definite molecular change and that convolution of grey pulp". He defended these men by showing how Harrison was irrational and illogical in his argument. He quoted Harrison's sentence: "No rational thinker now pretends that imagination is simply the vibration of particular fibre",³ only to show that Harrison himself fell into the trap of irrationality when he pretended the existence of such vibration in the phenomenon of devotion. Huxley referred to Harrison's unbalanced statements. He was surprised to find Harrison, who denied the molecular theory and attacked the scientific specialists, thus explaining:

To Positive methods, every fact of thinking reveals itself as having functional relation with molecular change. Every fact of will or of feeling is in similar relation with kindred molecular facts.⁴

1. Ibid., (June, 1877), P.631.

2. Ibid., P.632.

3. Ibid., P.627.

4. "A Modern Symposium", "The Soul and Future Life", in The Nineteenth Century (September 1877), P.335.

Huxley commented that the doctrine of molecules was Harrison's, too. Should it be regarded as a "corrupting doctrine" after all?

Huxley criticised Harrison's abilities which did not allow him to discriminate between Anatomy and Physiology, as it implicitly appeared in the latter's utterance that: "A man whose whole thoughts are absorbed in cutting up dead monkeys and live frogs has no more business to dogmatise about religion than a mere chemist to improvise a zoology."¹ Huxley illustrated the difference between the two sciences and exposed his agnostic point of view that it was impossible to conceive how physical actions gave rise to mental performances. He argued that since Harrison confessed that science "established a distinct correspondence between every process of thought or of feeling and some corporeal phenomenon"; and in so far as the "impaired secretions"² could make "hope, love, and faith reel", it was certain, therefore, that religious feelings would, in terms of science, come within the framework of physiology.

Huxley found that the positivists' sympathy towards religion would bring them, sooner or later, within the range of theologians of some metaphysical school. Satirizing Harrison and nicknaming him as the "Priest in Absolution", he pointed out:

If impaired secretions deprave the moral sense, it becomes an interesting and important problem to ascertain what diseased viscus may have been responsible for the Priest in Absolution; and what condition of the grey pulp may have conferred on it such a pathological steadiness of faith as to create the hope of personal immortality, which Mr. Harrison stigmatises as so selfishly immoral.³

1. Ibid., P.336.

2. Harrison said: "Impair his secretions, and moral sense is dulled, discoloured, or depraved; his aspirations flag, his hope, love, faith reel. Impair them still more, and he becomes a brute. A cup of drink degrades his moral nature below that of a swine." (June 1877) P.626.

3. Ibid., P.337 (September 1877)

Huxley's criticism simultaneously handled both Positivists and theologians, as did Harrison towards theologians and materialists.

R.H. Hutton defended the Christian creed of life which was described as selfish by Harrison. Hutton remarked that: "No conception of life can be selfish of which the very essence is adoration, that is wonder, veneration, gratitude to another."¹ He attacked Harrison's conception of the future life as a posthumous activity. Hutton said that such activity must encourage Positivists to hasten death, to commit suicide, for instance, only to incorporate their subjective deeds in the supposed "glorious future of our race", instead of looking for "any reasonable prospect of eliminating or postponing this fatality that waits upon all organic nature."² He argued that even good activity could be bad in its posthumous effect on later generations; Macaulay, for instance, had held that Puritan earnestness brought about Restoration licentiousness. He explained that Harrison's view of the posthumous activity was entirely irrational because every action during man's lifetime could be a posthumous activity as soon as it was performed or left his mind. When Harrison explained his conception of soul within a framework of nebular system, that it was easy for those who held that their souls would become "the immaterial principle of a comet" and take its 'place in space', to long for a personal immortality, Hutton retorted that Harrison talked at random. He defined the Catholic conception of soul as: "the thread of the continuity running through all our chequered life,"³ not a transformed entity in a comet as Harrison thought. Both the words of Harrison and Hutton convey an aggressive mood.

1. Ibid., P.330.

2. Ibid., P.329.

3. Ibid., P.334.

Representing Christian thought in the debate, Frederic Rogers, who signed as Lord Blachford in the Symposium, concentrated on the difference between the Christian and Positivist beliefs in soul and immortality. The difference, he explained, lay in the habits of thinking and methods. He discussed what Harrison often mentioned as the positive knowledge and its scientific logic. Rogers argued that things were either substances or ideas and the English habit of mind distinguished between fiddle, as a substance, and tune, as an abstraction. He ironically handled Harrison's notion of soul as a consensus of man's faculties by wondering what survived in whose memory to be incorporated into the glorious future of Music in the case of a tune played once upon a violin which was then burnt to ashes.

Frederic Rogers differentiated between what was percipient and what was perceptible of things. He believed that man, as a percipient, could conceive things around him, including other men, within the limits of his own experience and the inference of his knowledge. It was difficult for man, he explained, to know the nature of immortality and soul because they were beyond the perceptible substances. He held that the phenomenon of sensation was an extension of bodily vibrations to a world of reflection and volition, which was beyond the limitations of the percipient and the perceptible. He found no homogeneity between intellect and sensation though he admitted their interaction. He submitted two objections: first, that man's faculties of intellect, will, and emotion were not bound to physical laws and consequently his soul and future life, and secondly, that the immortality suggested by Harrison's philosophy of Humanity simply had no existence in the habits of the English mind.

Rogers' metaphysical attitude was illustrated in his view that he could conceive by his habit of mind which was different from that of Harrison, an existence of a Being from whom human beings

derived their knowledge. He held that belief in God was the sole reason for admitting immortality and the existence of soul; neither was possible in a world based on the connection of cause and effect embraced by J.S. Mill, or in Harrison's imaginary world of Humanity. Rogers stated:

Believing in God, I see in the constitution of the world which He has made, and in the yearnings and aspirations of that spiritual nature which He has given to man, much that commends to my belief the revelation of a future life which I believe Him to have made... For myself I believe because I am told.

Roden Noel suggested that the notion which considered man as 'a loose collection of successive qualities', and which was seriously adopted by both the Positivists and Agnostics, was Hume's frivolous treatment of the subject. Noel reiterated what Huxley said of contradictions in Harrison's concepts of soul and immortality, one as biological organs, another as a consensus of all faculties in a unity. He found no correspondence between man's physical structure and his conscious or moral faculty. His reason was the difficulty of finding a datum for identifying material with immaterial. He considered the faculty of thought as superior to all other qualities of body. He believed that consciousness gave man his personality, and that his soul was nothing but his conscious personal self.

He denied the haphazard philosophy of Agnostics which based the faculty of human thought entirely on physical laws. Commenting on this new doctrine, Noel pointed out that:

It is held indeed by the new philosophy that the temporal, the physical, and the composite (elements of matter and 'feeling') are the basis of our higher consciousness: on the contrary, I hold that this is absurd, and that the one eternal consciousness or spirit must be the basis of the physical, composite and temporal: is needed to give unity and harmony to the body.²

1. Ibid., pp. 346 - 347.
2. Ibid., P. 353.

Noel argued that body and soul were two opposite entities of 'one Reality, which is self or spirit'. The terms 'soul' and 'mind' seemed to be identical or synonymous in his treatment. He held that the phenomenon of death explained the full separation between body and soul, the former demolished and the latter transcended. He quoted two lines of verse as to show his conception of the future life:

Death is the veil which those who live call life:
We sleep, and it is lifted.¹

Rejecting the Positivist notion of immortality founded on man's interests in this world, Noel argued that living bodies were phenomena in 'orderly appearances' while dead ones were not, simply because their appearances no longer had any connection with their living personalities; they were used-up materials. However, he did not go in his argument beyond the common religious view that man's existence on earth was temporary, his body was mortal, and his soul eternal.

Roundell Palmer, accepted Lord Blachford's definition of soul as that continuous being of the self, and his contention that man's experience of the nature of his consciousness was limited because everyone had his own moral judgements ensuing from the actions of his body. He also admitted that man's body had no identity of the 'ego' without consciousness. He added that mind might remain fresh and vigorous in spite of a partial loss of some organs. He appreciated the view that the body was a machine provided that it were mastered by soul. He did not like *Bishop* Butler's treatment of body in plants and animals as machines because the latter endowed them with a kind of consciousness. Butler's view of the 'indivisibility and indestructibility' of the soul did not satisfy Lord Selborne either, who argued: 'If the soul during life has a real existence distinct from the body, it is not annihilated by death.' If, indeed, it were a mere 'force', it would be

1. Ibid.,p.352.

consistent with that doctrine, that the soul might be transmuted, after death, into some other form of force.'¹ He rejected Butler's idea of 'force' which seemed to be that scientific quality of matter, by saying that this notion was not applicable to man.

Palmer classified organisms into: bodies without souls which live physical life such as the plants, and bodies of inferior animals which had some 'degrees of consciousness, intelligence, and volition.'² But their intelligence, he maintained, was different from that of man in kind and degree, because they lacked man's judgement, his sense of morality, and his knowledge of good and evil. One may not agree with Palmer regarding the difference in kind between man and animal, simply because one cannot discern the nature of intelligence in man in respect of the limits of consciousness which was suggested by Rogers Noel and agreed by Palmer himself.

Palmer believed in the existence of soul as distinct from body. His evidence was based on the phenomena of intelligence in plants, animals, and man. He did not tell us whether animals had souls or not, or in case they had, whether their souls were immortal or not. He - like the Romantics - established his argument on the orthodox dualism of soul and body, but he only applied it to man. Although he admitted a profound similarity between man and animal, he found no reason for supposing a future life for animals which had no mental abilities. His doctrine of the future life was founded on an untenable statement:

The immortality of the soul seems to me to be one of those truths, for the belief in which, when authoritatively declared, man is prepared by the very constitution of his nature.³

Canon Alfred Barry found that the fight was fierce between Harrison and Huxley and being close to each other in rejecting

1. Ibid., (October, 1877), P.498.
 2. Ibid., P. 499.
 3. Ibid., P. 499.

Christianity, Barry made them his own target. He pointed out that: 'Each of the combatants is far stronger on the destructive than on the constructive side.'¹ Barry related Harrison's view of soul as 'a consensus of faculties' to the Buddhist doctrine, and connected his description of 'a perpetuity of sensation as the true Hell' with the aspiration to Nirvana. He adopted R.H. Hutton's definition of soul as: 'that which lies at the bottom of the sense of personal identity - the thread of the continuity running through all our chequered life', and described the modern doctrine as 'a juggle of ideas', particularly Harrison's sarcastic idea of immortality.

Barry believed that the relation between man's personality and his body would remain a mystery to the future advancement of science. He did not deny the interaction between the physical and the mental powers but he gave priority to the mental causation. He held that there were two powers which mastered man, the physical and the metaphysical; and he described the latter: "For to me it seems clear that there is something existent, which is neither material nor even dependent on material organisation."² This was Barry's conception of soul. He gave the soul a potency not only to hold the living body with its personality in this world but also to resurrect the dead body in the next. He tried to compromise between the two conceptions of soul, the traditional and the scientific. He explained that soul acted as a mediator between body and will, as 'in sleep, swoon, stupor', during lifetime, and in like manner, it would act in respect of the resurrection in the next world. All that Barry wanted was to prove the existence of soul according to the Christian doctrine, for that New doctrine of Humanity was 'a vague and shadowy abstraction', unworthy of worship, and it was like an idol with many heads. He held that man could conceive only two existences: his own

1. Ibid., P.500.

2. Ibid., P.504.

and the 'Supreme Existence'.

W.R. Greg joined the debate as an agnostic. He appreciated Harrison's eloquence and initiative in putting forward a theme of great importance, which tempted many eminent men of various beliefs and ideas to participate. He explained Harrison's attitude towards the religious feeling in men. He said that Harrison wanted to substitute the traditional creed for a new one because, according to Harrison, faith was deeply rooted in man's nature. But Harrison's compensation, Greg added, was a false coin for the real one. Commenting on Harrison's doctrine, Greg pointed out that:

Having no previous metal to pay it with, he issues paper money instead, skilfully engraved and gorgeously gilded to look as like the real coin as may be.

He found that Harrison's religion seemed to be more of a dream than a doctrine. It was like a pagan aspiration appearing in the conception of Nirvana, a Buddhist state of mind. Greg also held that there was no logical reason to make him believe in the ordinary doctrine, simply because it did not give rational solutions for the mystery of life. All proofs for the future life were dark and hazy. All results of the investigations were vague and unpromising. "The more I think", Greg remarked, "and question the more do doubts and difficulties crowd my horizon and cloud over my sky."² He criticised the Christian doctrine of the future life as being entirely based on materialistic rewards of emeralds, palaces, and pleasures. His historical investigations in the ancient religions of Chinese, Hindus, and Hebrews provided him with no reason to believe in the future life. He held that the conception of immortality had no existence in the minds of the primitive and the savage, and even the Chinese rarely regarded it as a religious faith.

1. Ibid., P.507.

2. Ibid., P.508.

Jews, he said, imported their belief. And to explain the Christian belief, Greg exposed the indifferent mood of man towards belief in three stages of life. He said that belief in youth looked like a habit, a solace, and a hope; in the middle age, man's busy career often removed the picture of the future life from his mind; and in the old age, man's belief seemed to be less confident and less desirous than the earlier days. Perhaps this was the conviction of his own and some thoughtful men in his time. One may agree with Greg on the first two stages of his view of eternity, but not the third because history informs us that most sceptics and atheists converted into believers, and even pious men, in their old age. Perhaps, conversion often was a sequence of two things, agnosticism and the horror of death. Thoughtful people - like Greg - constitute a minority in society, their conviction and personal experience would not go so far as to make a common belief. However, Greg himself was pessimistic in his view of the future life simply because he could find no solution for it. He believed that Man's longing for death at the last days of his life was a search for rest.

Baldwin Brown defended Christianity which seemed to him the only living force which "turned the world upside down, that is, right side up, with its face towards heaven and God",¹ not as it was described by Harrison as a base doctrine. He explained that the Positivist definition of Man as "an embodied spirit" was what Christians meant by Resurrection. He said that the phenomenon of resurrection acted as a manifestation for the existence of two worlds, body and soul. He pointed out that:

The risen Lord took up life just where He left it. The things which He had taught His disciples to care about here, were the things which those who had passed on were caring about there, the reign of truth, righteousness, and love.²

In a preaching tone, Brown asserted that the Christian belief in God

1. Ibid., (October 1877), pp. 511 - 12.

2. Ibid., P.514.

and Eternity rests on Christ's Resurrection and Revelation. He criticised the cultivated class of the nineteenth century, who held with Harriet Martineau the view that "the theological belief of almost everybody in the civilised world is baseless."¹ He ironically handled the scientific religion, particularly its concept of immortality as a longing for a future life generated by Nature. He wanted to know why nature made man alone of all creatures feel sad for that longing. He found no evidence in Harrison's idea of human immortality and its progress. "How immortal, if the glorious progress is striving to accomplish itself in a world of wreck?",² he asked. His pessimistic attitude was seen in his notion that life was full of sadness and anguish, and man must strive to get rid of the bodily life which was an implement. His religious mood was performed in every utterance, though he declared at the end of his paper that he was not a theologian but he had an interest in theological themes.

W.G. Ward set forth the Catholic point of view regarding the religious themes concerned. He believed that man was created for reasons that related to his Creator as "to know Him, to serve Him, and love Him in this world, and to be happy with Him in the next."³ He held that belief in God was the principal source for happiness on earth and in heaven as well. The contemplation of God, to him, was a relief for the mind and affections of the believer. He said that earthly religions like Harrison's doctrine of Humanity, had never been as attractive as divine ones. Love of God was, to Ward, the only love that absorbed the whole heart of the theist who would face God and see His beauty and perfection, not that false perfection of Humanity prescribed by Harrison. He denounced Harrison's abusive description of the Christian conception of eternity as "so gross, so sensual, so indolent, so selfish". By

1. Ibid., P. 515.

2. Ibid., P. 516.

3. Ibid., P. 518.

appealing to history, Ward claimed to show that Christianity had never been selfish: the Saints' self-sacrifices and their interest in mankind, for instance, were not selfish acts at all.

His attempt to base the idea of immortality on experience and reason singled him out from the religious party who generally held that eternity was proved either by intuition or by phenomenon. His belief in the future life was founded on certain premises which led him to certain inferences.

In the closing part of the symposium, Harrison asserted in his retort to Hutton that man's posthumous influence was a real immortality which should be comprehended by a positive thinking about the role of consciousness in man. He refused to argue with the theologians who believed in something because they were told. He concentrated in his answer to Huxley on the phenomena of intellect and morality. He spared no efforts to drag Huxley from the field of biology to religion and morality. He recognised Huxley's authority on biological pursuits but questioned his philosophical qualifications. He pointed out that he did not mean Huxley when he attacked materialists in his two articles, but he did so here because he found him in the bottom of the materialistic schools. Harrison retaliated for Huxley's nickname for him as the "Priest in Absolution" by calling Huxley the "Materialist in Philosophy".¹

The arguments of the rivals were based on various methods. Theologians often adopted metaphysical or intuitive ways to explain the conceptions of creation, soul, immortality, and Resurrection. Pure scientists, like Huxley, were clever in destroying the imaginary hypotheses of both the theologians and the Positivists; and their agnostic attitude presented the world as unknowable. The Positivist method was a mixture of philosophy and science. In fact, all the challenging groups sought

1. Ibid., P. 534.

truth but their sources of belief were different; and belief itself was the important foundation for their recognition of facts. But was belief true, after all?

III. ON SPONTANEOUS GENERATION

Many attempts were made to reconstruct information about the origin of life on earth in the 1870's when scientists with brilliant minds devoted themselves to the pursuit of truth in the laboratories of the Royal Institution in Albermarle Street, in University College, Gower Street, and in King's College, Strand, London. It was the materialistic basis of creation that was going to cast a spell over the minds of the refined as well as the common people because of the incredible efforts of a number of distinguished scientists and free thinkers who founded, professed, and propagated the facts of scientific naturalism as opposed to the truth of Revelation, unless objection came through the doctrine of spontaneous generation which, from time to time, met with every sympathy and support.

In the early paragraphs of the essay on "Spontaneous Generation"¹, Tyndall tells us that he himself was one of those who were deceived by the earlier observations that maggots, rats, serpents, and insects were spontaneously created, but he was no longer deceived after his own investigations and experiments. He refuted this doctrine by referring to his predecessors whose experiments turned out to be in favour of the germ theory. He declared that Redi's² investigations in 1668 and those of Réaumur³, some time later, destroyed the belief in the doctrine of spontaneous generation. He related that scientists of the eighteenth century, as a consequence of the conflict over this notion, were divided into two

1. John Tyndall, "Spontaneous Generation", The Nineteenth Century, (January 1878), vol. iv., pp. 22 - 47.

2. Francesco Redi (1626 - 1698) was an Italian entomologist and toxicologist.

3. René-Antoine Ferchault de Réaumur (1683 - 1757), a French scientist.

camps: Buffon (1707 - 1788) and Needham (1713 - 1781) were bracketed together at the head of the first group, and Abbé Lozzaro Spallanzani on the other. While the first group was described by Tyndall as holders of a speculative hypothesis, the second was warmly appreciated for the accuracy of their experiments and their sound conclusions. Speaking of Spallanzani's labours, in particular, whose results appeared in 1777 as opposed to those of Needham in 1748, Tyndall remarked:

Charging his flasks with organic infusions, he sealed their necks with the blow-pipe, subjected them in this condition to the heat of boiling water, and subsequently exposed them to temperatures favourable to the development of life. The infusions continued unchanged for months, and when the flasks were subsequently opened no trace of life was found.¹

The passage implicitly reflects Tyndall's own accuracy in his experiments to whose description he assigned much space in his article.

Nevertheless, Spallanzani was suspicious of the conclusions he arrived at because he thought that the absence of life in the flasks might be due to the lack of air. In order to remove this doubt Tyndall spoke of Schulze's attempts at passing air purified by sulphuric acid through the flasks whose contents of distilled water and organic infusions were subjected to boiling water to destroy the germs, an experiment whose result came out to the satisfaction of the holders of the germ theory. Although Tyndall declared that he himself repeated the same experiment many times and obtained no satisfactory results, he believed in Schulze's conclusion because he attributed the success of his experiments to the purity of air. He added that Schwann confirmed his opposition to the doctrine of spontaneous generation. He asserted that all the attempts which were made to convert Schwann from his belief came to nothing, as if alluding to his own attitude towards Bastian's endeavours to persuade him to save time and trouble over a question whose truth he himself had decided.

1. J. Tyndall, The Nineteenth Century, op. cit., P.24.

Presenting a world-wide conflict over the notion, Tyndall referred to the influence of the French investigator, F.A. Pouchet, who would have decided the question in favour of the doctrine of spontaneous generation as exposed in his book entitled Hétérogénie in 1859, had it not be taken up by Louis Pasteur who confirmed in his paper "On the Organised Corpuscles Existing in the Atmosphere", Schwann's conclusion and rejected Pouchet's ridiculous treatment of the theory of the atmospheric germs. Tyndall disliked the sarcastic exposition, the overpowering manner of argument, and the lack of discipline in Pouchet's inquiry. He did not deny Pouchet's ability for observation and argument in his inquiry, yet he remarked that: "Had Pouchet known that 'the blue ethereal sky' is formed of suspended particles, through which the sun freely shines, he would hardly have ventured upon this line of argument."¹ He, on the contrary, appreciated Pasteur's experiments which not only worked out a complicated subject as a matter of mere inquiry, but also inserted improvements in other fields, particularly surgery. He concluded that Pasteur's labours: "restored the conviction that ... life does not appear without the operation of antecedent life."²

Then Tyndall turned to tell us about his own occupation in the inquiry concerned. He stated that he was engaged from 1859 to 1869 in the study of the "Radiant heat in its relations to the gaseous form of matter", and his conclusions concerning the doctrine of spontaneous generation were in full agreement with those of Pasteur.

Tyndall's clash with Bastian began when the former's letter to The Times appeared on 21st January, 1870, in which he drew the public attention to the problem of spontaneous generation. Bastian immediately reacted by warning Tyndall to avoid such inquiry which was out of his field. Tyndall announced, after an investigation of nearly

1. Ibid., P.26.

2. Ibid., P.27.

eight years, that Bastian was "more adventurous" than Pouchet in his inferences, though he avowed that Bastian succeeded in driving the public mind to "a state of uncertainty",¹ about the doctrine which was previously destroyed by Pasteur's confirmation. He felt that it was his task to remove this state of "uncertainty" from the public mind by delivering his evidence.

The scientific demonstration put forward by Tyndall to refute spontaneous generation was based on his own experiments. He illustrated that sixty flasks were filled with infusions of different organic substances, and were carefully boiled, sealed, and taken to the Alps where they were exposed to a warm sun at daytime and kept in a warm kitchen favourable to putrefaction at night. He declared that after repeating the process for a month he found that the fifty remaining flasks, for ten of them were accidentally broken, were "as clear as at the commencement."² He haphazardly divided the fifty flasks into twenty three and twenty seven; the first group of flasks were snipped off and put in a hayloft, while the other group were also snipped off and exposed to the fresh air at a height of 2,000 feet above the sea. The result was that after only three days twenty one flasks of the first group were full of organisms, while none of the twenty seven were spoilt. Therefore, he concluded that it was not the fresh air that generated life but those suspended particles of dust, which a beam of light would render visible to the naked eye, were the indispensable antecedents for life generation.

Speaking of life-germs, Tyndall stressed two facts: first, that germs varied in their ability to resist heat, secondly, that they were the only power that generated life in 'matter'. He rejected the view held by German investigators and English heterogenists that there was no existence of the bacteria and their germs in the air. He was also in conflict with Bastian over 'the death-point of bacteria'. Moreover,

1. Ibid., P.30.

2. Ibid., P.32.

he refuted Bastian's belief that "the briefest exposure to the influence of boiling water is destructive of all living matter"¹ by pointing to the difference between the dry bacteria of the air and the wet and active bacteria of the organic liquids. According to his experiments, Tyndall assured that Bastian's view of the brief exposure of the bacteria to boiling water proved to be 'a delusion' and that his concept of fermentation was ambiguous, while he appreciated Baron Liebig's view of fermentation as synonymous with the concept of life.

In a rejoinder² which appeared in the February issue of The Nineteenth Century in 1878, H. Charlton Bastian, the propounder of the doctrine of spontaneous generation in England, defended the doctrine by quoting Huxley's view of the vital force in the organic matter as compared with the phenomenon of crystallisation in the organic matter. What Huxley wrote in 1869 was that: "The property of crystallising is to crystallisable matter what the vital property is to albuminoid matter (Protoplasm). ... Crystalline force being a property of matter, vital force is but a property of matter."³ Huxley never confirmed his belief in spontaneous generation though such a statement might suggest so. However, he often denied it, whenever an occasion came into being.

Bastian referred to Tyndall's misrepresentation and misconceptions of the facts concerning the particles contained in the air and the idea of fermentation which was described as 'vague' by this opponent. He asserted that what he meant by 'fermentation' was not different from Liebig's definition that: "a ferment was a portion of organic matter in a state of motor-decay".⁴ He appreciated Liebig's

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1. Ibid., P.43; Bastian wrote in his book, Evolution and the Origin of Life (1874): "Meanwhile it has been shown, and believed by the majority of biologists, that the briefest exposure to the influence of boiling water (212 F.) is destructive to all living matter." P.46.
 2. H. Charlton Bastian, "Spontaneous Generation, a Reply", The Nineteenth Century, (Feb. 1878), vol. iv., pp. 261 - 277.
 3. Ibid., P. 269; quoted by Bastian from The Westminster Review, Feb.1869.
 4. Ibid., P. 265.

obstinate attitude towards the new views on the germ theory by arguing on the latter's behalf that the views were unstable and lacked evidence. He denied what was attributed to him by Tyndall that the dead particles of the air themselves were changed into living matter, the idea which he described as 'absurd'.

Correcting Tyndall's misconceptions, Bastian illustrated that:

The mere organic matter of the air can engender fermentative changes in suitable fluids, leading, though it may, amongst other phenomena, to a new birth of living particles.

He rejected Tyndall's suggestion that there were "ultra-microscopical particles in the air which contaminated infusions", and he also refused to accept that such particles were germs of bacteria. Therefore, he described Tyndall's view of invisible particles as speculative and erroneous.

In order to debase the value of Tyndall's experiments which lasted nearly ten years, Bastian remarked that Tyndall's labours offered neither solution, nor contribution to the question of spontaneous generation, and that his conclusions added nothing to those offered by Schwann in 1837.

Bastian stated that many distinguished thinkers shared his view that the first creation was an independent process of living matter which had occurred on the earth. He asserted that Darwin, Huxley, and Spencer believed that "such a process did take place in the early history of this planet."² Moreover, he was in sympathy with the view that somewhere on the earth life was still spontaneously generated in one form or

1. Ibid., P.267.
2. Ibid., P.269.

another. For instance, he cited G.H. Lewes whose contention appeared in his work entitled: The Physical Basis of Mind (1877), Lewes wrote:

I cannot see the evidence which would warrant the belief that life originated solely in one microscopic lump of protoplasm on one single point of our earth's surface; on the contrary, it is more probable that from innumerable and separate points of this teeming earth myriads of protoplasts sprang into existence whenever and wherever the conditions of the formation of organised substance were present. It is probable that this has been incessantly going on, and that every day new protoplasts appear, struggle for¹ existence, and serve as food for more lightly organised rivals.

The passage suggested nothing but a probability of such an existence of life in an unknown place on earth. Neither Lewes nor Bastian gave reasons for such suggestion. When Bastian was attacking his opponent, he described him as a speculative experimenter who based the germ theory on 'a cloud of witnesses', an 'imagined' testimony, and 'probable guesses'. Perhaps Bastian himself fell in the same pit of speculation by adopting Lewes' view which hardly belonged to a scientific foundation or to a sound philosophy, as the above passage revealed in word and thought.

The controversy did not come to an end at this stage and Bastian's 'reply' drew forth another article which provided more elucidation and criticism. In his "Last Word"² on the doctrine of spontaneous generation, Tyndall retorted several arguments erroneously refuted by Bastian in his rejoinder. With regard to the resistance of seeds to boiling water, Tyndall referred to Pouchet's experiments and cited his words³ to show that seeds, particularly the seeds of *Medicago*, really resisted ebullition for four hours. He pointed out that Bastian had not given proper attention to this important observation in his work. He demolished the claim of Bastian's care in his experiments by affirming

1. Ibid., P.270; quoted from The Physical Basis of Mind (1877) P.122.

2. John Tyndall, "Spontaneous Generation: A Last Word", The Nineteenth Century, (March 1878), pp. 497 - 508.

3. Pouchet wrote: "Les semences de ce medicago du Brésil résistaient à une ébullition de quatre heures de durée. Où cela s'arrête-t-il? Je n'en sais rien, n'ayant pas expérimenté au delà." (The seeds of this Brazilian medicago resisted four hours' boiling. Where will this end? I do not know, having done no further experiments.) Ibid., P.498.

that he himself applied Bastian's method to his own experiment, but the result was contrary to that of Bastian whose flasks teemed with organisms. Tyndall remarked that his flasks were critically examined by Thomas Huxley on behalf of the Royal Society and proved to have no trace of organisms after their exposure to pure air for six months. He added that when the dust of dry hay was allowed to visit the open flasks for only two days, the result was that the infusions swarmed with living matter. Therefore, he concluded that the organisms were formed by the germs of the hay themselves as the nature of germs revealed when they were put to test.¹

Resisting descriptions of himself as a speculative thinker and a narrow-minded scientist, Tyndall harshly attacked his opponent by using similar accusations such as : "He (Bastian) speaks of my 'setting the seal upon nature's possibilities' when I am merely setting it upon his own illicit wanderings. Indeed he plainly shows himself to be unacquainted with the real basis of scientific inference ... His words seem the words of knowledge, but his knowledge is really nil."² In order to show Bastian's lack of scientific wisdom, Tyndall referred to the industrial art of canning which proved to be a living witness against the former's contentions. Tyndall's absolute belief in the germ theory appeared in his closing statement:

While expressing, therefore, unshaken 'belief' in that form of 'materialism' to which I have already given utterance, I here affirm that no shred of trustworthy experimental testimony exists to prove that life, in our day, has ever appeared independently of antecedent life.³

1. Ibid., P.502.

2. Ibid., pp. 501,504.

3. Ibid., P.507.

However, the main difference between the views of Bastian and Tyndall lies in the fact that the former believed in the vital force of living matter and the vital self-multiplication of organisms, while the latter held that the whole vitality of life existed in the germs themselves. Besides, there is a difference in defining the nature of the particles in the air; while Bastian considered them desiccated organisms, Tyndall affirmed that particles were bacteria germs. Confirming his belief in the spontaneous generation of living matter, Bastian announced:

As I have everywhere pointed out, living matter, like crystalline matter, can originate or come into being only by a synthesis of its elements; but because organisms (owing to the intrinsic properties of living matter) have well-known powers of self-multiplication, the obviousness of these modes of reproduction has sufficed to cast doubts upon the reality of the independent origin of the lowest units.

Although Tyndall's experiments came to confirm in 1878 what had been disclosed by Pasteur in 1869, they indicated his love of experimental evidence as well as the spirit of personal verification in such important questions. His communication with Pasteur, as seen at the end of his first article, might suggest that there was a continuous exchange of opinion between the two scientists, and that the French scientist exercised some influence on Tyndall's refutation of the doctrine concerned. Tyndall's methods of research, his accurate execution of the experiments, and his inductions and inferences which characterised his experiments, had every reason to convince the public mind and stabilise the germ theory against Bastian's attempts.

With respect to the materialistic view of life, I find no difference in the conclusions of both scientists for the matter is

1. H. Charlton Bastian, The Beginning of Life (1872), vol. ii., P.77; Evolution and the Origin of Life (London: Macmillan & Co., 1874), P.57, fn., with a little change in the text.

there, either in the form of a germ or a self-generating substance, or even in the combination of both. None of the rivals has explained the nature of life itself which is, in fact, neither a process of fermentation, nor a phenomenon of self-multiplication. Moreover, neither scientist has told us how life exists in the germs themselves, nor how they engendered life into the infusions. The facts about the real nature of life and its cause, says Bastian, will remain beyond the reach of human knowledge, while Tyndall, no less materialistic than Bastian, confers the power of generation upon the germ alone. In fact, living matter has been the target of almost every microscopical research since the early decades of the nineteenth century until the present day.

It was the belief of the scientific naturalists in the second half of the nineteenth century that the protoplasm was responsible for any creation of life on earth. The term 'protoplasm' was introduced into England by Lindley in 1848.¹ The writers of the essay on 'the protoplasm'² in the Encyclopaedia Britannica pointed out that Max Schulze (1825 - 1874) was the first scientist who suggested that this living matter was the basis of all phenomena of life because of its similarity in both worlds of plants and animals. Scientists often illustrated the qualities of this substance, such as irritability, growth, adaptability, reproduction, and stability. Perhaps the property of adaptation stored in the protoplasm was a key to the theory of transmutation, while the property of stability had some bearing on the laws of heredity. The conflict over the faculties of this substance was not only between the scientists themselves, but also between the scientists and the doctrinaires, particularly William Thompson, the Archbishop of York, Frederic Harrison, a Positivist, and Huxley.

1. The Oxford Dictionary of English Etymology, ed. by C.T. Onions (1966)
 2. 'The Protoplasm', R.Ch; K.G.St., Encyclopaedia Britannica, (Edition of 1962), vol. 18, pp. 616 - 621.

The protoplasm theory led to a controversy between Huxley and the Archbishop of York, when the former was invited to deliver a series of lectures on miscellaneous topics in Edinburgh in 1868. It happened that a day before Huxley's first address "On the Physical Basis of Life"¹ which was going to take place on 8th November, the Archbishop's article "On the Limits of Philosophical Inquiry" appeared in the local newspaper, an occasion which gave Huxley an opportunity to enlarge his philosophic arguments only to show the line of difference between the scientific concept of the origin of life and that of theology. With regard to Huxley's address, there are few alterations between the original text which appeared in The Fortnightly Review, February 1869, and the one enclosed in the Collected Essays in 1893.

In this address, Huxley called the attention of his audience to the conception of life as an inseparable integrity between matter and the process of life by explaining that the powers of reproduction and multiplication existed in "the microscopic fungus" of a living animal or a plant. The multitudes of jelly specks, he remarked, "could dance upon the point of a needle with the same ease as the angels of the Schoolmen could, in imagination".²

In the face of the difficulties of connecting the diversity of life with a single basis, Huxley tried to demonstrate that there was a three-fold unity in the protoplasm: power, form, and construction. He cited Goethe in support of the view that there was no difference in the faculties of living matter except in degree, not in kind. Accordingly he classified these faculties into three kinds: first, those which maintained the development of the living body; secondly, those which produced transitory changes in the body like the muscular contraction; and thirdly, the faculties which tended to the preservation of species.

1. T.H. Huxley, Collected Essays, Methods and Results (1898) vol.i., pp.130-165; Lay Sermons, Addresses and Reviews (1899), pp. 105-127.
 2. Collected Essays, op. cit., P.132.

Perhaps because of the similarity of the structural units of the protoplasm in plants and animals, Huxley considered the distinction between these two worlds as a traditional classification when he remarked that: "It is a mere matter of convention whether we call a given organism an animal or a plant."¹ In order to support this statement, he touched upon the characteristics of the Aethalium Septicum, a living matter of decaying vegetables, which entitled it to be either a plant or an animal. He added that the chemists of the time affirmed that the chemical structure of the protoplasm consisted of hydrogen, oxygen, carbon, and nitrogen, the elements which formed the essence of life. Thus he concluded that the:

Protoplasm, simple and nucleated, is the formal basis of all life. It is the clay of the potter: which, bake it and paint it as he will, remains clay, separated by artifice, and not by nature, from the commonest brick or sun-dried clod.²

Speaking of the chemical transmutation of living matter, Huxley saw that the death of a being was a life for another, by which he meant, perhaps, the cyclic conception of life, a view which was adopted by the materialistic philosophers and physiologists, old and new. With regard to his own view of the protoplasm as representing the scientific conception of his day, Huxley remarked:

Under what ever disguise it takes refuge, whether fungus or oak, worm or man, its mineral and lifeless constituents, but is always dying, and, strange as the paradox may sound, could not live unless it died.³

No doubt that such statements reflected a materialistic view of life on which Huxley concentrated in this lecture, particularly in the manner of his demonstration by putting a specimen of protoplasm on his table and

1. Collected Essays, T.H. Huxley, op. cit., vol. i., P.141.

2. Ibid., P.142.

3. Ibid., P.145.

indicating that there lay the whole basis of life. To elucidate the last statement, Huxley pointed out that living matter in its simple structure was found in the realm of vegetable, while its complex nature underwent a change from the dead protoplasm into the living one in the process of assimilation. Thus he saw life as a mutual interaction between the chemical constituents of living matter which had nothing to do with any speculative views. Moreover, he stated that the constituents themselves were lifeless substances but their compounds under certain conditions gave rise to the protoplasm which presented the vital force of life. He even went further in his materialistic tendency by arguing that so long as the properties of water were considered as resulting from its molecular constituents, the vital actions of living matter should be the properties of protoplasm, apart from the fact that both aspects were made by an unknown power in Nature. It was strange to see, after all, that Huxley denied that he was a materialist though he exclusively used the materialistic terminology. "Two things are certain," he wrote, "The one, that I hold the statement, to be substantially true; the other, that I, individually, am no materialist, but, on the contrary, believe materialism to involve grave philosophical error."¹ Thus he turned to discuss materialism on philosophical grounds.

He pointed out that the article he read "On the Limits of Philosophical Inquiry" brought about his philosophic argument in which he objected to the view displayed by the Archbishop of York. Huxley refused the Archbishop's identification between the evolutionary philosophy, or scientism, and that of Auguste Comte. In order to differentiate between the two doctrines, Huxley sharply attacked Positivism; and not failing to kill two birds with one stone, he remarked:

In so far my study of what specially characterises the Positive Philosophy has led me, I find therein little or nothing of any

1. Ibid., P.155.

scientific value, and a great deal which is as thoroughly antagonistic to the very essence of science as anything in ultramontane Catholicism. In fact, M. Comte's philosophy, in practice, might be compendiously described as Catholicism minus Christianity.¹

What could be more hostile to Christianity and more destructive to Positivism than this brief formula, 'Catholicism minus Christianity', which also revealed a scientific mentality in a state of contempt? Perhaps Huxley was cunningly dragged to a side-battle with the Positivists² whose representatives in Britain rushed to defend their case. He explained that the Victorian mind was in a state of perplexity because of the progress of science which, day after day, realized a new triumph by illustrating the probable connection between matter and natural laws. He prophesied that the science of physiology would, sooner or later, provide the necessary information about the nature of life. Thus he described the worries of the Victorians who were aware of the coming facts and afraid of their consequences by saying:

They watch what they conceive to be the progress of materialism, in such fear and powerless anger as a savage feels, when, during an eclipse, the great shadow creeps over the face of the sun. The advancing tide of matter threatens to drown their souls; the tightening grasp of law impedes their freedom; they are alarmed³ lest man's moral nature be debased by the increase of his wisdom.

Huxley revealed his attitude by making fun of such fears for he found no reason for them to appear among highly educated institutions. He asserted that nothing was yet known about the truth of matter more than that of spirit. He remarked that "matter and spirit are but names for the imaginary substrata of groups of natural phenomena."⁴ This statement, of course, implied his inability to decide whether in the spiritual or the materialistic world lay the truth of life. Perhaps the unknown source of life was Huxley's own perplexity which eventually led him to

1. Ibid., p.156.

2. Huxley's clash with Positivists will be seen later.

3. Ibid., p.160.

4. Ibid., p.160.

the dark paths of agnosticism, the doctrine to which he adhered for his lifetime. Perhaps this hesitant attitude or the unsettled mind brought about Huxley's assault on both materialism and spiritualism, apart from the fact that by taking a different line he wanted to establish a philosophy based only on scientific facts. He pointed out that: "the materialistic position that there is nothing in the world but matter, force, and necessity is as utterly devoid of justification as the most baseless of theological dogmas."¹

Huxley himself justified his agnostic view of the origin of life by affirming that neither he nor anybody else could know the truth, and that it was honesty and trustfulness, on his part, to tell that he did not know the truth. In support of this view of the unknown he cited David Hume's famous words² which reflected his own philosophic learning. Hume's words expressed his sceptical attitude towards all metaphysical or supernatural doctrines. Commenting on Hume's statement, Huxley remarked that it was the 'most wise advice' to sensible men to refrain from such impractical philosophies which bound man's interests to imaginary worlds. In order to show the usefulness of the scientific outlook on life, he announced that anyone who aimed at mitigating the phenomena of misery and ignorance overwhelming the world must hold two doctrines: "The first, that the order of Nature is ascertainable by our faculties to an extent which is practically unlimited; the second, that our volition - or, to speak more accurately, the physical state of which volition is the expression³ - counts for something as a condition of the course of events."⁴ He argued that these two beliefs could be

1. Ibid., P.162.

2. Hume remarked: "If we take in hand any value of Divinity, or school metaphysics, for instance, let us ask, Does it contain any abstract reasoning concerning quantity or number? No. Does it contain any experimental reasoning concerning matter of fact and existence? No. Commit it then to the flames; for it can contain nothing but sophistry and illusion." Ibid., P.163.

3. This phrase was added in 1892.

4. Ibid., P.163.

proved by experiment. He considered thought, for instance, as a property of matter, and added that science, by its rapid progress, would supply the world with the knowledge which would definitely show the dominance of physiology over intelligence. Perhaps Huxley was too optimistic concerning the progress of science in the earlier days of his career, but time and experience taught him to be less optimistic, if not fully pessimistic, when he reached old age.

In fact, this pure scientific trend, which constitutes one of the most important foundations of scientific naturalism, invaded all branches of knowledge and gradually proved to be influential and practical in many ways, educational, social, and even political, while the conventional doctrine was poor and stagnant. Huxley described the spiritual view of life as "utterly barren", and considered that it "leads to nothing but obscurity and confusion of ideas."¹ It was true that the traditional schools of philosophy, whether theological or metaphysical, never ventured forth from the isles of imagination, but the nature of scientific philosophy itself was no less speculative in its methods of reasoning and inferring than traditional schools. John Tyndall's materialism as presented in the "Belfast Address" may testify to the truth of my assertion. The materialistic tendencies of English scientists can be fairly associated with their German origins. In fact, there can be little doubt that Germany formed the main centre for the revival of materialist philosophy in the early nineteenth century, most obviously perhaps when Ludwig Feuerbach began to criticise his master, Hegel, in the late 1830's. But the greatest, and most influential authority in Europe of the Mid-Victorian period was considered to be Ludwig Büchner whose Kraft und Stoff,² which first appeared in 1855, gave a new direction to materialism owing to its adoption of scientific methodology and conclusions.

1. Ibid., p. 164.

2. Louis (or Ludwig) Buchner, Force and Matter, translated by J. Frederick Collingwood (London: Trubner and Co., 1870).

With regard to the first appearance of the organic being, Büchner asserted its natural origin and its spontaneous generation, a phenomenon he attributed to "peculiar circumstances."¹ These "peculiar circumstances" were not explained by Büchner and the hypothesis of spontaneous generation itself remained as vague as that of special creation. What he did explain was that there were natural laws which determined the existence of the organism, its life, and its death, and that these laws operated within a mechanical framework. His argument against the special creation of the universe was based on the principle of mechanism. He illustrated, for example, his conception of thought or spirit by referring to a resemblance between the steam engine and man's spirit in terms of their effects which differ from their constituting matter. "In the same manner as the steam engine produces motion", Büchner remarked, "so does the organic complication of force-endowed materials produce in the animal body a sum of effects, so interwoven as to become a unit and is then by us called spirit, soul, thought."² This view reminds one of "spiritual machines", a term which was largely used in mediaeval technology.³ It seems that the contemporary industry was so influential that it led the German philosopher to consider man's body as a machine in motion, and his spirit as the air, or steam, the process of breathing in or out producing forces different in nature from the material itself.

Speaking of Büchner's reputation and achievement, F. Gregory states that Kraft und Stoff attained twenty one editions in its original German, and was translated into seventeen other languages,

1. L. Büchner, Force and Matter, op. cit., p.liv.

2. Ibid., P.136.

3. My review of Tagi ad-Din's work on The Sublime Methods of Spiritual Machines, edited by Ahmad Y. Hassan, will appear in the magazine History of Science, as Dr. R.S. Porter, the editor, has informed me.

including Arabic.¹ Gregory's comments on the work are worth reproducing; he remarks that:

The Kraft und Stoff was a conscious attempt to bring together into one place and to make explicit all the implications of the materialistic tendencies others had been expressing... Its aim was general and philosophical, and it was written in a way that did not put off the lay reader with its erudition. Due to its popularity it soon earned the reputation as the Bible of materialism.²

Scientific materialists, Gregory says, are not against philosophy but they believed, particularly Büchner, that philosophy would become more scientific and natural science more philosophic if they exchanged experience and knowledge. Gregory has not told us whether the German materialists, by criticising traditional philosophy, were anxious to subordinate philosophy to science as was the case with certain English scientists in the late nineteenth century.

In 1874, being the President of the British Association for the Advancement of Science, John Tyndall delivered his famous "Belfast Address", in which he treated some unsolved questions such as the origin of life, the nature of soul, and man's intellectual faculty. He stated that the origin of things had been man's preoccupation from the earliest generations. Democritus was especially interesting to Tyndall. Tyndall appreciated the principles suggested by Democritus and Epicurus. His materialistic tendency appeared when he quoted Democritus' axioms such as: "from nothing comes nothing; the only existing things are the atoms and empty space; all else is mere opinion; and the soul consists of fine, smooth, round atoms like those of fire. These are the most mobile of all: they interpenetrate the whole body, and in their motions the phenomena of life arise."³ Tyndall admitted Democritus' doctrine of

1. No complete Arabic translation of Kraft und Stoff exists. It appears only in condensed form. However, it should be recognized that the translator exploited and incorporated many of Büchner's ideas and arguments in his own work entitled Kitab an-Nushu' wa'l-Irtiga', vol. I. 2nd ed., (Cairo 1910).

F. Gregory, Scientific Materialism in the Nineteenth Century Germany, (U.S.A: D. Reidel Publishing Co., 1977) P.105, fn. 25, P.238.

2. Ibid., P.105.

3. John Tyndall, Fragments of Science (1876), 'Belfast Address', P.454.

atoms except the 'fine atoms' of soul. He explained that Democritus attributed the combination and separation of atoms to mere mechanical laws. He agreed with F.A. Lange, the writer of The History of Materialism, that Empedocles was the first thinker who speculated the doctrine of the survival of the fittest.¹

Tyndall showed that Epicurus, like Democritus, considered soul as superior to body and treated the phenomenon of death with indifference. Epicurus argued that when man was alive there would be no sensation of death and vice versa. Epicurus' view that gods never interfered in natural laws was approved by Tyndall. He said that both Epicurus and Lucretius rejected superstitions and demanded their destruction. Tyndall embraced Lucretius' notion of the spontaneous interaction of atoms 'without the meddling of the gods.'² In a poem entitled 'Lucretius', Tennyson well-depicted the materialistic trend of science at the second half of the nineteenth century. The atomic theory of creation was recalled from the remote past to take part in the new doctrine. Tennyson said:

..... perchance
 We do but recollect the dreams that come
 Just ere the waking: Terrible! for it seem'd
 A void was made in Nature; all her bonds
 Crack'd; and I saw the flaring atom-streams
 And torrents of her myraid universe,
 Ruining along the illimitable inane,
 Fly on to clash together again, and make
 Another and another frame of things
 For ever

The Gods, the Gods!
 If all be atoms, how then should the Gods
 Being atomic not be dissoluble,
 Not follow the great law?

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1. Friedrich Albert Lange, The History of Materialism, translated by Ernest Chester Thomas, (3rd edition, London: Routledge & Kegan Paul Ltd., 1950), pp. 32 - 33.
 2. Ibid., P.524.

And therefore now
 Let her, that is the womb and tomb of all,
 Great Nature, take, and forcing far apart
 Those blind beginnings that have made me man,
 Dash them anew together at her will,
 Thro' all her cycles - into man once more,
 Or beast, or bird or fish, or opulent flower.¹

Christians, to Tyndall, looked to heaven and scorned the earth; their science was founded on their spiritual conceptions. He remarked that 'The Scriptures which ministered to their spiritual needs were also the measure of their Science'.² He also asserted that their scientific perception was limited to what was retained in the Bible. He agreed with Renan, the writer of Antichrist, who attributed the Christian tolerance to 'an extraordinary exaltation of mind'.

Tyndall was objective in judging the Arab intellectuals of the Middle Ages. He demonstrated the scientific nature of their thought and their contributions to the development of science in Europe. He spoke of Al-hazen's conceptions of gravity, light, and weight, as appeared in the latter's book entitled Book of the Balance Wisdom.³ He appreciated Draper's attitude towards the European unfaithfulness to history, Tyndall pointed out:

If all this be historic truth, (and I have entire confidence in Dr. Draper), well may he deplore 'the systematic manner in which the literature of Europe contrived to put out of sight our scientific obligations to the Mohammedans'.⁴

Tyndall explained that astronomical facts which were based on observation and experience contributed to the advancement of science. Copernicus' theory of astronomy, which appeared a year before his death,

1. Tennyson's Poetry, Ed. by Robert W. Hill, Jr. (1971), 'Lucretius', pp. 278 - 281.
2. Tyndall, Fragments of Science, op. cit., P.482.
3. Ibid., P.487.
4. Ibid., P.488.

converted, Tyndall said, this old Aristotelian view that the earth was the centre of the universe, into a moving solar system in which the earth moved around itself, on the one hand, and around the sun, on the other. Giordano Bruno accepted the Copernican doctrine and applied it to stars. Bruno believed that stars were suns, and that the satellites were connected to stars in the same manner as the earth was connected to the sun and the moon to the earth. Bruno's importance lay, to Tyndall's mind, in his statement that: 'Matter is the universal mother who brings forth all things as the fruit of her own womb.'¹

Bruno was burnt in 1600 because of his various heresies. Three decades later, Galileo almost had the same fate because of his heliocentric belief. Copernicus, Bruno, and Galileo, who devoted their mature days to the study of the universe and life, were all of religious stock. Later, Newton elucidated the principle of gravitation. But Newton believed that beyond the mechanism of Nature stood a Creator. Descartes also believed in God, though life, to him, was the sequence of blood diffusion from the heart. Tyndall said that Julius Robert Mayer also considered the diffused blood as 'The oil of the lamp of life.'²

Tyndall appreciated Goethe's approach to Nature. Goethe's verses were quoted by Tyndall to show the former's rejection of the notion that there was a God beyond the natural laws. Goethe was described as a great lover of nature by Tyndall who shared his agnostic view of life. Tyndall also expounded Gassendi's theory of atoms and molecules. Gassendi had held that God provided the earth with a number of atoms in order to constitute all creatures. He believed that it was the law of change that existed in matter, by which things would be produced in the future.

Thus this bold ecclesiastic, without incurring the censure of the church or the world, contrives to outstrip Mr. Darwin.³

1. Ibid., P. 490.
 2. Ibid., P. 492.
 3. Ibid., P. 495.

Tyndall said that Gassendi considered 'body' as the basis for 'soul' and the brain for the mental power. He added that, in 1873, Clerk Maxwell came to the same conclusions as Gassendi by saying that 'atoms were prepared materials which had been formed once by the Eternal'.¹ Tyndall refuted Maxwell's logic by which the latter related the phenomena of atoms to a Supernatural Power. The only difference between Gassendi and Maxwell, said Tyndall, was that: "the one postulates, the other infers his first cause".² As a retort, Maxwell put the Belfast Address in a humorous poem of which the following lines might reveal how Tyndall conferred intellectual and emotional faculties upon matter:

Thus the pure elementary atom, the unit of mass and of thought,
By force of mere juxtaposition to life and sensation is brought;
So down through untold generations, transmission of structureless
germs
Enables our race to inherit the thoughts of beasts, fishes, and
worms.³

Proceeding to the theme of soul. Tyndall said that Bishop Butler spoke of souls as 'living power' and 'moving agents' instead of postulating them as wandering things over bodies. This instrumental conception of soul as it was seen in the Bishop's Analogy of Religion was appreciated by Tyndall. The Bishop explained that the eye received all visible objects as exactly as the glass, as to be transferred to the self. He also held that all other senses would be, like the eye, means of communication for the self. Tyndall quoted Bishop Butler at large and happily received his liberality, and considered him as 'a disciple of Lucretius'.

Tyndall's materialistic tendency and his conception of life appeared most prominently in these words:

1. Ibid., P. 496.

2. Ibid., P. 496.

3. A.S. Eve and C.H. Creasey, Life and Work of John Tyndall, (1945), P.186.

Divorced from matter, where is life? Whatever our faith may, our knowledge shows them to be indissolubly joined. Every meal we eat, and every cup¹ we drink, illustrates the mysterious control of Mind by Matter.

He illustrated that his belief was a consequence of long scientific investigations which turned out to be unfruitful because it did not provide him with reasonable facts about the origin of life, the nature of soul, and even the essence of the intellectual faculty, the thing which made him pass from scientific evidence to philosophical hypotheses which superseded experimental ones. He said:

Believing, as I do, in the continuity of nature, I cannot stop abruptly where our microscopes cease to be of use. Here the vision of the mind authoritatively supplements the vision of the eye. By an intellectual necessity I cross the boundary of the experimental evidence, and discern in that Matter which was 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.²

This statement was subject to many attacks by many theologians and scientists as well. Notwithstanding his friends, Tyndall's notion provoked anger in the most cultivated circles and resulted in enmity and hate. Such an excitement implies that Tyndall had considerable authority. In the face of these attacks he confirmed in his "Apology" what he had said in his address:

I reaffirm here, not arrogantly, or defiantly, but without a shade of indistinctness, the position laid down at Belfast - The Book of Genesis, has no voice in scientific question.³

One may admit the fact that the origin of life on earth and the nature of mind are still problems which challenge man's experience, intuition, and his scientific advance.

1. J. Tyndall, Fragments of Science, op. cit., P.523.
 2. Ibid., P.524.
 3. Ibid., P.548.

IV. THE DEBATE OVER DARWINIAN MAN

The questions of man's origin, constitution, faculties, and races were probably the most dominant themes which preoccupied the minds of Victorian intellectuals. Scientists, theologians, philosophers and men of letters, despite their traditions, were involved in the debate, each contributing what his field of speciality allowed him to offer of information, interpretations, and deductions about the issues concerned. In fact, Darwin's Origin of Species opened fresh horizons in the evergreen discussion by relating man to the world of lower animals, basing his arguments, as much as he could, on scientific grounds.

In this treatment we shall be introduced to the main problems which formed the body of controversies over the Darwinian Man¹ which concerned the Victorians in the second half of the nineteenth century. The hypothesis of the ape-like man was sharply refuted by traditional thinkers, while it was warmly welcomed by the scientific circles which maintained the close similitude between man and animal, not only in structure but also in mental and apparently in moral faculties.

Issues of the Debate: 1. Form

Morphological investigations on the vertebrates had begun much earlier than Darwin's hypothesis; and probably Linnaeus was the first to classify man (Homo) with the tailless apes in his work, Systema Naturae² (1735). Nearly twenty years later, Linnaeus used the term Primates as the genus which includes the species of Homo sapiens. Many nineteenth century authors saw that Darwin's Origin was essentially concerned with the origin of man, but that he deliberately disguised this fact. This view has been recently asserted by both W.F. Bynum and

1. By "Darwinian Man", I mean the ape-like man, or the man whose remote ancestry had been ape-like.

2. Dr. W.F. Bynum, Times Noblest Offspring: the Problem of Man in the British Natural Historical Sciences, 1800 - 1863 (Thesis, 1974), P.24.

Professor Gruber.¹ Bynum, an historian of London University and a medical doctor, believes that although Darwin deliberately avoided revealing his real aims, his work was about "the origin of man and his history."² Unfortunately, he does not deal with Darwin's motives which justify that disguise. Professor Gruber, in his work Darwin on Man, bridges the gap by presenting a psychological portrait of the scientist, his cautiousness and fears, and thus attempts to explain his reticence. Professor Gruber offers essential reasons for Darwin's reticence in The Origin and his delay in publishing his second enormous work, The Descent of Man in 1871, by demonstrating, using recently available manuscripts of Darwin's notes which he publishes for the first time, that the issues of man's origin and faculties had been Darwin's concern from his earliest investigations.

In his thesis, Bynum confines himself to the year 1863, the time during which the discussion of the ape-like ancestors of man was at its greatest in Britain. During the very year, two distinct works came into being: Man's Place in Nature³ by T.H. Huxley, and The Antiquity of Man⁴ by Charles Lyell.

In the section entitled "On the Natural History of the Man-like Ape", Huxley traced back the literature on the apes from 1598, the time of the earliest information he found, up to the 1860's. He quoted descriptive accounts about the chimpanzee, mandrill, and the baboon. For instance, he offered William Smith's account on the mandrill which appeared in the latter's work entitled: A New Voyage to Guinea (1744).

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1. Howard E. Gruber, Darwin on Man: A Psychological Study of Scientific Creativity, (London: Wildhouse Ltd., 1974).
 2. Dr. Bynum, op. cit., "Introduction", p.vi.
 3. T.H. Huxley, Man's Place in Nature and other Essays (London: Everyman's Library 1927). With introduction by Sir Oliver Lodge.
 4. Charles Lyell, The Antiquity of Man, (London: John Murray, 2nd ed. 1963).

He appreciated Buffon's description of a chimpanzee which was the only one found in Europe at the time (1766), as Huxley asserted. He also cited the opinion of both Geoffroy St. Hilaire and Cuvier on apes, in addition to Richard Owen's physiological study of skulls, muscles, and the brains of different species of the apes.

Huxley referred to the similar characters of form common in man and the ape. Both have, he said, the same number of teeth (32) "four incisors, two canines, four false molars, and six true molars in each jaw."¹ All the apes have the forearms which end in hands with thumbs. The ape's great toe is moveable and more helpful to it than it is to man. None of the orang outang, the gibbon, or the chimpanzee has a tail. Although a detailed exposition is not our concern here, a comparison shows how close similarity is in the fields of the skeleton, the number and the form of the bones, the muscles, the organs as a whole, and in particular the rudimentary organs in both man and lower animals, apart from the distinct fact that the vertebrae of the neck are seven in number in both man and the giraffe.

Eight years after Huxley's treatment, Darwin asserted that man's bones are in correspondence with those of "monkey, bat, or seal",² so are his muscles, nerves, and blood vessels with the lower animals, particularly the mammals.

Thus after nearly four centuries of investigations on the apes, scholars arrived at the conclusions that there were four distinct races (species) of apes, namely, the gibbon, the orang-outang, the chimpanzee, and the gorilla.

1. T.H. Huxley, Man's Place in Nature, op. cit., pp. 22 - 23.

2. Charles Darwin, The Descent of Man (1871) (2nd ed. London: John Murray, 1888), P.6.

Huxley's essay on the man-like apes presents, in a historical survey, the travellers' unsystematic descriptions of the apes on the one hand, and on the other, the contributions of some of the professional scholars to scientific knowledge. He devalues bizarre and local descriptions, while he appreciates the investigations of Buffon and Owen. His own treatment shows little originality, though he himself asserted that none of the nineteenth century scholars offered fresh insights, except that concerned with the bodily difference between the apes and their classification into four kinds.

In his discussion of man's relation to the lower animals which he called "the question of questions",¹ Huxley spoke of the segmentation of the yolk in the vertebrates and of their resemblance, particularly in the earlier stages of development. He stressed the close resemblance of the embryo in these animals, not excluding man, because he found that man's development underwent the same mechanism and formation as that of the animals. In his own words, Huxley stated:

"Without question, the mode of origin and the early stages of the development of man are identical with those of the animals immediately below him the scale; without a doubt, in these respects, he is far nearer the apes, than the apes are to the dog." 2

After dividing the vertebrates into fishes, amphibians, reptiles and mammals, Huxley illustrated the fact that man and the ape were of the same order by comparing the structure of several species of apes with those of man, particularly in terms of the pelvis, the spine, and the skull. He stated that the proportional difference between man and the gorilla was very similar to that between the gorilla and any of

1. T. Huxley, Man's Place in Nature, op. cit., P.52.

2. Ibid., P.60.

the other apes, basing his view on the facts demonstrated by the close resemblance in form, weight, and number. However, Huxley concluded that there must have been a "physical causation" by which the development of all animals, including man, had been determined. To him, this causation was to be found in Darwin's principle of natural selection on which he commented:

"If the animated world presented us with none but structural differences, I should have no hesitation in saying that Mr. Darwin had demonstrated the existence of a true physical cause, amply competent to account for the origin of living species, and of mass among the rest."¹

Huxley's investigations of the fossil skulls, which were found in Belgium and Düsseldorf resulted in an accurate description of the Neanderthal² skull - a description which reflected the difference in size between the fossil and the living skull. His study of the Engis³ skull showed no difference between this skull and that of the contemporary European. This conclusion was in contrast to that of earlier scholars who thought it to be a skull of a degraded race. "It is, in fact," Huxley asserted, "a fair average human skull, which might have belonged to a philosopher, or might have contained the thoughtless brains of a savage",⁴ while he found that the characteristics of the Neanderthal skull were ape-like. He, nevertheless, asserted that these remains did not show the modifications assumed by the evolutionists. In his conclusion Huxley was unable to decide whether the ape-like man belonged to the Pliocene or to the Miocene period. However, Huxley's study revealed that the Neanderthal and Engis skulls were substantially different from those of the anthropoids.

1. Ibid., P.99.

2. Neanderthal is a cave near Düsseldorf where a human skeleton was found in 1857, and explored by Dr. Fuhlrott.

3. Engis is a cave near Liege, Belgium, where a fossil human skeleton was found and described by Dr. Schmerling.

4. Ibid., P.147.

Cyril Bibby's heroic view of Huxley appears in his discussion of the scientist's work, Man's Place in Nature, which he uses as a title for Chapter 15 of his book, Scientist Extraordinary.¹ He assigns some fifteen pages to this treatment which has no substantial analysis of the important issues of man's physical features and mental faculties. Moreover, Dr. Bibby's book includes eighteen photographs of the hero, something which shows the author's extraordinary devotion to the scientist. He, for example, describes Huxley, in entering the Sheldonian Theatre to deliver a lecture, in the same manner of a commentator might use about a Roman gladiator entering the amphitheatre or a Greek warrior proceeding to a battlefield; he writes:

By all accounts, Huxley presenting a striking figure as, still slim and commanding, the leonine squareness of his features topped by long silvery locks, robed in D.C.L. scarlet, he strode on to the platform.²

No doubt, the other extraordinary scientist of the Victorian age was Charles Lyell, who was the real pioneer of the debate on man's antiquity.

2. A Geological Argument

In his work entitled The Antiquity of Man³, Charles Lyell utilized the methods of geological thought whose principles he himself had founded in England in the first half of the nineteenth century. His views of man's antiquity were, more or less, consistent with the theory of evolution which, then, claimed to be based on scientific grounds. Probably the most important argument in Lyell's book was derived from the fact that the nineteenth century geologists were suspicious about the

1. Cyril Bibby, Scientist Extraordinary: T.H. Huxley, (Oxford: Pergamon Press 1972).

2. *Ibid.*, p. 136.

3. Charles Lyell, The Antiquity of Man, (London: John Murray, 2nd edition, (1863), with an Appendix, (pp. 528)).

traditional vision of man's history simply because their findings of man's skeletons and hand-made remains side by side with the fossils of extinct mammals revealed to them a new world of facts which was to prove to be inconsistent with the Genesis version of history.

Lyell's argument involved the study of fossil skulls which apparently belonged to earlier races that might be considered as providing the link between civilized man and the apes, his ancestors. Thus the cases of the Engis and the Neanderthal skulls were brought to light. The Engis skull was found in the same stratum as the remains of extinct mammals. Dr. Schmerling¹ believed that the Engis skull must have belonged to an adult of "small intellectual development",² basing his view on the narrowness of the forehead, the characteristic which, though significant, did not separate it from the European pattern.

The Neanderthal skull was called so because it was found in the Neanderthal cave, near Düsseldorf, Germany. On Lyell's visit to this cave in 1860 in order to study the case on the spot, he was given a cast of the cranium by Dr. Fuhlrott, the owner of the original skull and the first scholar who described it. Lyell stated that as soon as he returned to England, he showed the cast to Thomas Huxley who immediately pointed out that: "it was the most ape-like skull he had ever beheld."³

This cranium was first studied by Schaaffhausen⁴ who maintained its divergence from the skull of the ordinary man. Appreciating Schaaffhausen's observations and reinforcing their significance, Huxley remarked:

This skull is the most brutal of all known human skulls, resembling those of the apes not only in the prodigious development of the

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1. Dr. Schmerling (1791-1836) was a medical doctor and paleontologist who accidentally discovered the Engis skull in Belgium.
 2. Lyell, The Antiquity, op. cit., P.80.
 3. Ibid., P.79.
 4. T. Busk's translation of Schaaffhausen's memoir appeared in the Natural History Review, No. 2, April, 1861, P.160; Ibid., P.79.

superciliary prominences and the forward extension of the orbits, but still more in the depressed form of the brain-case, in the straightness of the squamosal suture, and in the complete retreat of the occiput forward and upward, from the superior occipital ridges.¹

Lyell largely cited Huxley's statements on the Engis and Neanderthal skulls for Huxley's investigations were mainly carried out in order to provide the geologist with an anatomist's views about the skulls concerned.

The Engis skull was seen by Lyell as similar to that of the Caucasian type, while the Neanderthal was removed from "normal standard of humanity."² Although Lyell's statements, or even Huxley's, were not dissimilar to those of Schaufhausen, he concluded that there was no geological evidence to prove that the lower human races had preceded the higher ones, or that the study of the fossil skulls resulted in the conclusion that there was no difference between man's highest or lowest races, neither in the shape of the skull nor in the brain except in degree. However, he was to differentiate the human brain from that of the ape.³

Lyell's Antiquity of Man contained rich material about the latest geological investigations which were taking place virtually all over the world and which he utilized in his judgements for and against the current views on the questions of variation, species, and the theory of transmutation, particularly those of Darwin.⁴ He also laid great stress on the imperfection of the geological records which had been referred to by many scientists including Darwin. In a word, Lyell's work represents an accumulation of geological facts and unsettled philosophical inferences.

Commenting on Lyell's work, Sir Arthur Keith pointed out

1. Quoted in The Antiquity, op. cit., P.84.

2. Ibid., P.89.

3. Ibid., P.90.

4. Ibid., Chapter XXII., pp. 424 - 453.

that: "His book became a classic; the geologist came to be regarded as the official historian of ancient man. The modern successors of Sir Charles Lyell have maintained the position he established for them."¹ In 1915, Sir Arthur Keith offered an anatomical picture of man's antiquity basing his views on a detailed study of the structure, bones, and the skulls of both man's races and those of the apes, as Huxley had attempted to do in Man's Place in Nature. Keith acknowledged in the preface of his book that his attempt was "supplementary" to Sir John Lubbock's "Classical work - Prehistoric Times,"² a work whose conclusions are therefore of interest.

3. An Archeological Argument

Lyell's geological interpretation of man's antiquity had been followed by Sir John Lubbock's archeological treatment of man's culture and civilization which appeared in his work entitled: Prehistoric Times,³ 1865. In this work Lubbock explored the world of contemporary savages whose crafts, customs, and manners he considered essential for the purpose of understanding the remote history of man. Although his method was mainly established upon archeological consideration, he never omitted to exploit the fruits of geological investigations. Commenting on the geologist's calculations of man's existence and comparing them with the Biblical speculations, Lubbock remarked:

The geologist reckons not by days or by years; the whole six thousand years, which were until lately looked on as the sum of the world's existence, are to him but one unit of measurement in the long succession of past ages.⁴

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1. Sir Arthur Keith, The Antiquity of Man (London: Williams & Norgate, 1915) P. v.
 2. Ibid., "Preface", P.vi.
 3. Sir John Lubbock, Prehistoric Times (London: Williams & Norgate, 2nd edition, 1869).
 4. Ibid., P.2.

Although he asserted that the geological facts were "as definite as those of zoology, chemistry, or any of the kindred sciences", he saw that "Archaeology forms, in fact, the link between geology and history,"¹ simply because anatomical investigations failed to distinguish whether the fossil skeletons belonged to a savage or a philosopher, and because man in contrast to the animal, had left behind him collections of objects, houses, temples, ornaments, and implements by which their level of civilization could be determined.

In his work Lubbock studies several races of contemporary savages in America and Australia. For example, in his treatment of the Fuegians, he cited observations about them by many travellers. He also referred to anthropological studies of traditional societies and suggested that the Fuegians were one of "the lowest human races because they had no knowledge of pottery, nor of vessels."²

Man, to Lubbock's mind, had learnt to construct houses by drawing on the example of the animals. In his concluding chapter he pointed out that "the chimpanzee builds himself a house or shelter quite equal to that of some savages", and that our ancestors during the hunting stage "could not fail to observe, and perhaps to copy, the houses which various species of animals construct for themselves."³ This statement was followed by the most important assertion which was, in fact, the axis on which the whole six hundred pages of the volume rotated, namely that:

"The lowest races of existing savages must, always assuming the common origin of the human race, be at least as far advanced as were our ancestors, when they spread over the earth's surface."⁴

Commenting on this barbarous stage of man's social development, Darwin pointed out that it was treated "in so full and admirable a manner by Sir John Lubbock."⁵

1. Ibid., P.2.

2. Ibid., P.532.

3. Ibid., P.573.

4. Ibid., P.573.

5. Charles Darwin, The Descent of Man, op. cit., P.143.

Lubbock believed in the doctrine of the unity of human races, and supported his belief by referring to the ancient Egyptian monuments, which bore evidence that the races of the Egyptians, the Arabs, and the negroes of his time were similar to those portrayed on the monuments some three thousand years before, and that this span of time was insignificant compared to the slow and gradual change of races predicted by the evolutionists.

Lubbock discussed Alfred Russel Wallace's article on "The Origin of Human Races and the Antiquity of Man deduced from the Theory of Natural Selection,"¹ whose views he sometimes accepted and sometimes refuted. For instance, he remarked that Wallace himself was of his own opinion in adopting the doctrine of the unity of human races. Wallace in this article diverged from Darwin by not applying, in toto, the principle of natural selection to man, an argument which was rejected by Lubbock who remarked that:

The great principle of natural selection, which in animals affects the body and seems to have little influence on the mind, in man affects the mind and has little influence on the body.²

However, his attitude towards this principle was not only sympathetically presented, but also defensively argued by asserting that the law of natural selection was to biology what 'gravity' was to astronomy. He regretted, or was even surprised, to find that "a theory which thus teaches us humility for the past, faith in the present, and hope for the future, should have been regarded as opposed to the principles of Christianity or the interest of true religion."³

Wallace argued that man was no longer "influenced by natural selection", and that his structure became 'stationary' after slow and gradual changes had taken place in the course of a long period of time.

1. Quoted in Lubbock's Prehistoric Times, op. cit., P.578.

2. Ibid., P.590.

3. Ibid., P.581.

Perhaps there is some exaggeration in Wallace's statement that "man has not only escaped 'natural selection' himself, but he is actually able to take away some of the power from nature, which, before his appearance, she universally exercised."¹

Lubbock was optimistic about the future of humanity because he held that the "happiness" of mankind was increasing. He attributed this "happiness" to two basic reasons: the existence of a more favourable natural environment and the increase in population which had resulted from the advancement in scientific fields. He cited many examples of increasing populations in several countries in order to show that the improving conditions of civilization offered every reason to predict a happier future for humanity.

The "Preface" to Primeval Man informs us that the argument of the work was originally published in the Good Words, but it had been expanded so as to incorporate an examination of the conclusions drawn from the contemporary sciences which had bearing on the study of early man. The Primeval Man deals with the most important questions of life as seen by the Duke of Argyll who attempted to analyse the nature of the connections between physical and mental phenomena, between intellectual and moral faculties, and between man's inclination to progress or degradation.

In his introductory chapter, the Duke referred to Sir John Lubbock's paper on "The Early Conditions of Mankind" which was read at the British Association for the Advancement of Science in 1867 and was considered to be a reply to Dr. Whately's article "On the Origin of Civilisation".² R. Whately, the Archbishop of Dublin, held that it was

1. Quoted in Lubbock, op. cit., P.580.

2. The Duke of Argyll, Primeval Man: The Examination of Some Recent Speculations (London: Strahan & Co., Publishers, 1869), P.22.

impossible for early man to have advanced without the aid of Divine instruction. This attitude, which was refuted by Lubbock, was, in part, revived by the Duke of Argyll who generally followed the Archbishop's line of argument, although he elaborated upon it with enthusiasm whilst somewhat modifying it in the process. He considered both Lubbock's 'Savage theory' and Whately's argument as "inadequate and incomplete", largely because they ignored the Genesis version of creation. He remarked that both Whately and Lubbock claimed that their methods were conducted on scientific foundations, but he suggested that he would offer a better method. In order to illustrate his method, Argyll does indeed refer to the limits of reason, but he refused to accept any statement such as G.H. Lewes' that "Whatever is inaccessible to reason, should be strictly interdicted to research."¹

With regard to the issues of the origin of man, Argyll held that "The creation of man was a special act - which indeed, whatever may have been its method, it must in sense have been."² Argyll argued that the Genesis version of creation contained no mention of the existence of primitive man. He accused the exponents of primitive theories, particularly Lubbock, of being "guilty of oversight" in their concepts of "civilised" and "uncivilised". He agreed with Whately that the division of labour was originally divinely revealed to man, as it was told that Cain was a tiller and Abel a flock-keeper. Even man's acquaintance with cultivation was presumed to be divinely inspired, either directly as a result of Divine instruction, or indirectly as the result of an intuitive knowledge possessed as a result of divine creation.

In his account on Huxley's conclusion in Man's Place in Nature, that a great difference existed between the mental faculties of

1. Richard Whately, "On the Origin of Civilization", Young Man's Christian Association Lectures, 1854 - 1855 (London: James Nisbet & Co., 1855), pp. 11 - 14.

2. The Duke of Argyll, *op.cit.*, p.28.

man and those of the gorilla, Argyll asserted that differences existed not only in terms of mental power, but also in terms of physical attributes. In his own words Argyll pointed out that:

Whatever may be the anatomical difference between Man and the Gorilla, that difference is the equivalent, in physical organization of the whole mental difference between a Gorilla and a Man. This is the measure of value which Nature has set upon the kind and degree of divergence which separates these two Material Forms.¹

He refused to accept any analysis or system of thought which distinguished between mind and body, though he confessed that the connection between matter and mind was inconceivable. Refuting totally the principle of natural selection and in part that of the struggle for existence, Argyll argued that compared to beasts, man's characteristics of "unclothed and unprotected" body, of slow feet, of non-defensive teeth, of weakness in hands and of "the bluntness of the sense of smell", were defects which removed him from the field of struggle for existence and proved that natural selection had never been at work, apart from the fact that these physical disadvantages were in harmony with his distinguished mental faculties which compensated man for his lack of brute strength.²

Dealing with the theory of transmutation in general, Argyll found that it faced great difficulties in explaining man's divergence from the animal world, a divergence which was described by Huxley as "immeasurable - practically infinite" as maintained in the latter's investigations on two ancient skeletons. Argyll commented that: "It needs only to be added to this sketch (of Huxley's), that such as Man now is, Man, so far as we yet know, has always been."³ Moreover, he also suggested that: "This most ancient of all known human skulls is so ample in its dimensions that it might have contained the brains of a philosopher."⁴

1. Ibid., P.52.

2. Ibid., pp. 65 - 67.

3. Ibid., P.72.

4. Ibid., P.73.

Speaking of the antiquity of man, the second point he wished to raise, Argyll stated that only history could deal with the real concept of time, or as he called it "Time-absolute", while all other sciences such as archeology, geology, and ethnology, which were considered to offer evidence for dating the origin of man, could only provide relative information about time, or "time-relative".¹ As such the Duke found the estimation of some purely biblical interpreters suspect and incompatible with the findings of geological investigations and the geographical distribution of human races. He considered that the question of man's antiquity was within the reach of scientific research and that in the face of such research the biblical interpreters could not and should not continue in their rigidity. By means of differentiating between "time-absolute" and "time-relative", he thus sought to reconcile the biblical scholars and the scientific naturalists.

Argyll asserted that there was no evidence to support the view that man's structure had changed within the historical limits available to human research. He referred to the speculations of the anonymous writer of Genesis of the Earth and of Man² in which it was suggested that the black race (the daughters of the Adamites) had already existed on earth when God created the white Adamites (or the sons of God)³, and that the existing races were the result of inter-marriages between the two. Admitting this view, Argyll arrived at the conclusion that all human races derived from common ancestors, a view by means of which he aimed at reconciling the biblical doctrine and that of the contemporary scientific naturalism.

In his geological argument concerning man's antiquity, Argyll claimed that geologists in general maintained three conclusions:

1. Ibid., P.79.

2. It was written by E.W. Lane and edited by R.S. Poole (2nd ed., 1860).

3. The Duke of Argyll, op. cit., pp. 104 - 105.

"First, that Man appeared in Northern Europe at a time when it was covered with great quadrupeds now wholly extinct; second, that the surface of the Earth has since that period been subjected to modifications, which imply great changes in physical geography; and third, that the period when those animals flourished, and when Man co-existed with them, was one when a colder climate prevailed."¹

It is interesting to find that the Duke, whose main views accord with biblical doctrine, stressed the significance of scientific conclusions in a manner very similar to secular writers. Nevertheless, the reader of Argyll's work cannot fail to recognize his support for the orthodox version, which underlies his attitude of compromise and is also found in the 'biblical spirit' which pervades the work. Argyll was not a literal or conventional interpreter of biblical statements, but a liberal thinker who apparently admitted the scientific argument concerning man's appearance on earth. An attitude which may also explain his reluctance to derive human morality from religious origins. One must agree, however, with the majority of the critics that Argyll must be treated primarily as a theologian and not as a scientist.

His argument throughout the work can be summarized in the following principle that in order to conceive of the unknown, man begins reasoning from the known. By applying this principle he arrives at the theory of man's degradation. He supposed that degradation occurred in many fields: knowledge, industrial arts, and morals. Yet he believed that mental faculties were essential elements in the construction of civilizations; in his own words: "It is by moral and intellectual force that all the triumphs of civilization are achieved."²

1. Ibid., P.119.

2. Ibid., P.157.

The causes of degradation were attributed by Argyll to the decline of man's moral and intellectual qualities. He considered the destruction of the ancient civilizations by barbarians as accidental, a view which was not supported by any reasoning and which seemed to me erroneous and unsound. He held that the original external conditions had been suitable for early man and provided him with knowledge and civilization, but as soon as man settled down, other factors affected his course of progress. The natural law of increase, for example, Argyll said, was one of the important causes which necessitated migration. He argued that the emigrants who were forced to leave the centres of rich conditions of living because of the want of subsistence, always constituted the "weaker tribes" and "the rudest", and Argyll assumed that the lands to where such tribes went "less hospitable in climate and productions."¹ Such a view, to the twentieth century intellectual, is not entirely convincing, for he might well argue the converse that the emigrants constituted more adventurous and intelligent populations and that the virgin lands to which they settled must have been more hospitable and fruitful than the ones they left. It can also be argued that the westerners themselves were immigrants who achieved the highest levels of civilization in terms of knowledge and industrial arts.² His argument that the Eskimo could be an example in favour of his hypothesis of degradation, seems unconvincing for to suppose that "the rudest" tribes were pushed to the extremities of the land-mass is to already accept the premises of his argument as a predicative basis for analysis, and his premises themselves are suspect. The view that the hardship of external conditions adversely affected the advancement of primitive nations appears another weak point when compared with the principle that hard conditions stimulate struggle and, eventually, man's victory over nature

1. Ibid., P.162.

2. The colonization of the American West might also seem to justify the point of view.

as the existence of most ancient Mediterranean civilizations would seem to prove.

Argyll also rejected Lubbock's statements on primitive religion. When Lubbock argued, for example, man's constancy in religion, Argyll replied that there were highly distinguished men in his time who not only lost their faith in the Supernatural world, but also scorned their religion. He also objected to Lubbock's statement which appeared in the Prehistoric Times in which the latter, commenting on the savage, concluded that: "Thus his life is one prolonged scene of selfishness and fear; even in his religion, if he has any, he creates for himself a new source of terror, and peoples the world with invisible enemies."¹ Argyll italicised the words only to call attention to Lubbock's anti-religious attitude implied in his "savage hypothesis". Argyll, presumably in answer to this attitude, associated the existence of religions with the appearance of moral corruption among human nations. Moreover, he stated that moral corruption was one of the causes which determined the character of a religion. Man's corruption seemed to Argyll as an indisputable fact independent of man's beliefs or of any theoretical interpretation. In support of his theory of degradation he cited Max Müller's words that: "... Whenever we can trace back a religion to its first beginnings, we find it free from many blemishes that affected it in its later stages."² He held that man's nature possessed both capacities of degradation and progress, and that the power of imagination acquainted man with both the laws of Nature and the attributes of the Unknown. He considered imagination as "One of the most effective causes and instruments of Degradation."³ While he partly objected to Whately's argument, he utterly refuted Lubbock's conclusions by asserting that it was possible to find primitive nations who were ignorant of the arts but definitely aware of God, that

1. Quoted in - Ibid., P.187.

2. Quoted in - Ibid., P.190.

3. Ibid., P.193.

barbarism could be attributed to changes in external circumstances, and that the potential for corruption was ever present in man's nature.

Argyll's views on primitive man were refuted by Charles Darwin who, agreeing with Lubbock, remarked that man's fashioning of a tool for a special purpose was accidental, and it must have taken primitive man a great deal of time to design their implements from broken flint-stones.¹ In fact, Darwin refused to accept Argyll's theory of man's perfect creation altogether by declaring that:

The arguments recently advanced by the Duke of Argyll and formerly by Archbishop Whately, in favour of the belief that man came into the world as a civilised being, and that all savages have since undergone degradation, seem₂ to me weak in comparison with those advanced on the other side.

Darwin argued that the still-existing traces of low customs, beliefs, ways of enumeration, and language in the civilized world, all weighed against Argyll's argument.

In his recent article on the Duke of Argyll³, Neal C. Gillespie discusses the conflict between Lubbock and Argyll which originally began at the 1867 meeting of the British Association of Science at Dundee. He correctly sees that Argyll's argument was directed against two assumptions: first, that Lubbock was at fault when he associated the absence of technology in primitive man with the lack of moral and mental faculties, and secondly, that Lubbock's view that: "the more coarse and vicious a custom, the older it was"⁴ had no ground of validity. Argyll's reply to Lubbock's view of the "barbarism" of primitive man as seen in the corruption of his religion seems to appeal to Gillespie, implicitly concurring as he does with Argyll's view that modern Hinduism offers good evidence for "the corruption of a pure religion like that of the Vedas."⁵

1. Charles Darwin, The Descent of Man, op. cit., P.82.

2. Ibid., P.143.

3. Neal C. Gillespie, "The Duke of Argyll, Evolutionary Anthropology, and the Art of Scientific Controversy", Isis, 1977, 68 (No.241), pp.41-54.

4. Ibid., P.44.

5. Ibid., P.46.

To Gillespie, Lubbock's replies to Argyll's criticisms, which appeared in a later work entitled Origin of Civilization, have not sufficiently answered Argyll's objections, for "He offered no systematic justification of the equation of modern savages with primeval man and of the inference of mental and moral capacity from material culture, nor did he justify the assumptions underlying the doctrine of survival."¹ It may, then, safely be concluded that Gillespie feels a great deal of sympathy for Argyll's theory of degradation. He rightly considers that the Duke has been consistently misinterpreted, and advocates at least a partial rehabilitation of his work, claiming that: "Contrary to his critics, the Duke's point was not that primeval man was civilized but that not being so did not necessarily make him a savage."² It is a view which I can readily appreciate, although I do not myself, for reasons already stated, agree with Argyll's theory of degradation.

In a gigantic volume printed in small type, Darwin put forward his arguments in favour of The Descent of Man³ from lower animals. Unfortunately, there was nothing in his exposition of similarity between man and the animals concerning their structure and the embryological facts of growth which had not already been discussed. In their comments, on the Descent the authors of the Darwin Reader stated that when Darwin's book was brought to light in 1871, "the ideas were neither surprising nor shocking,"⁴ because the implications of the theory of natural selection contained in The Origin of Species (1859) did not exclude man from the animal world. Darwin quoted, for instance, Von Baer and Huxley, the former to stress the morphological similarities, and the latter to assert the embryological resemblance. After arriving at the conclusion that man developed from the lower animals and that both man and the animals had

1. Ibid., P.49.

2. Ibid., P.49.

3. Charles Darwin, The Descent of Man and Natural Selection in Relation to Sex (1871) (2nd edition, London: John Murray, 1888).

4. The Darwin Reader, edited by Marston Bates and Philip S. Humphrey (London: Macmillan & Co. Ltd., 1957), P.271.

descended from a common stock, Darwin attributed man's denial of these facts to his arrogance and prejudice.¹

Darwin stated that man's closest allies in the genealogical tree were the quadrupeds, particularly the apes, but man's desire to walk erect and his repeated attempts to do so had made this habit an inherited reality, and he, eventually, became a biped. He referred to the similar structure of the tail in man and the ape by saying that it was "constructed on exactly the same pattern in both."² Afterwards, he proceeded to speculate about the birthplace of man's ape-like ancestors by arguing that it must have been somewhere in Africa where a species of apes, now extinct, had, supposedly, lived and that these apes must have been closely related to the chimpanzee and gorilla since these were the closest species to man. "It is somewhat more probable," Darwin remarked, "that our early progenitors lived on the African continent than elsewhere."³ The link was still missing and Darwin's argument that geological records were imperfect in reply to the objection directed against his theory of descent was not convincing. In fact, his argument was based on Lyell's account, then conjectural, that the geologists had not yet explored the region where the ape-like man first originated.

At the end of the nineteenth century, Ernst Haeckel delivered an address at the International Congress of Zoology, Cambridge, which was published in 1899 under the title of The Last Link, Our Present Knowledge of the Descent of Man.⁴ In this little book Haeckel supported Darwin's view by asserting that only Darwin's theory was scientific.⁵ His evidence was founded on then recent discoveries of fossils such as

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1. "It is only our natural prejudice," Darwin remarked, "and that arrogance which made our forefathers declare that they were descended from demi-gods, which leads us to demur to this conclusion." - The Descent of Man, op. cit., P.25.
 2. Ibid., P.58.
 3. Ibid., P.155.
 4. Ernst Haeckel, The Last Link: Our Present Knowledge of the Descent of Man, ed. by Hans Gadow, F.R.S. (2nd ed.) (London: Adam & Charles Black, 1899).
 5. Ibid., P.7.

the Pithecanthropus erecta which was discovered by Dr. Eugene Dubois, in Java, 1894.¹ Haeckel considered these remains as belonging to a "Pliocene Primate", for they were found beside some extinct animals. The discussion of these remains at the International Zoological Congress at Leyden, Haeckel pointed out, resulted in the view that "they belonged to an Intermediate form, which directly connected primitive man with the anthropoid apes." Commenting on this result, Haeckel remarked that:

This last view is the right one, and accords with the laws of logical inference. Pithecanthropus erectus of Dubois is truly a pliocene remainder of that famous group of highest Catarrhines which were the immediate pithocoid ancestor of man. He is, indeed, the long-searched-for 'missing link', for which, in 1866, I myself had proposed the hypothetical genus Pithecanthropus, species Alalus."²

His refutation of Virchow's claims that the fossil remains were those of abnormal individuals was convincing. Haeckel also disclosed the fact that fossils of lemurs, whose absence had been asserted by Cuvier, were found in 1862 and after. He also reinforced his paleontological evidence by embryological statements which maintained that the early stages of man's embryological development were similar to those of other vertebrates, a fact which gave greater validity to the idea that there was a common ancestor for all the vertebrate species.³

Haeckel's tone in this address was assertive and revealed great confidence in the conclusion he arrived at, particularly in his statement that "the direct descent of man from some extinct ape-like form is now beyond doubt, and admits of being traced much more clearly than the origin of many another mammalian order."⁴

However, the majority of the arguments concerning man's

1. Ibid., P.22.
 2. Ibid., P.26.
 3. Ibid., P.44
 4. Ibid., P.74.

morphological and physiological characteristics as compared with those of the lower animals, in particular the ape, maintained that man belonged to the animal world despite his erect posture, and the soft features of his hands and face. Geological, archeological, paleontological, and ethnological evidence indicated that man's origin went back to a remote period very much beyond the theological hypothesis of some six thousand years, yet the definite time is still unknown, though Sir Arthur Keith's investigations favoured the Pliocene period. In his own words, Keith perhaps here drawing on Huxley's work, remarked:

I am thus presuming that before the middle of the Pliocene period there was in existence a type of man sufficiently high to serve as¹ a common ancestor for the Neanderthal and modern species of man.

Perhaps the most interesting aspect of the debate, however, is that which deals with the distinct differences existing between man and the animals in terms of their respective mental and moral faculties. This is to form the subject matter of the following section.

However, the controversy over man, which was initially limited to the spheres of the sciences, was extended to other areas. The controversy thus inevitably involved the question of man's doctrines in terms of scientific philosophy versus religion, and itself produced a new attitude, agnosticism.

V. THE PHILOSOPHY OF AGNOSTICISM

Agnosticism, a term which was first coined by T.H. Huxley in 1869,² is a philosophic concept which came into being as a result of the controversy between science and theology over certain fundamental issues which continued to concern the greatest minds in metaphysical debate.

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1. Sir Arthur Keith, The Antiquity of Man, op. cit., (1915), P.502.
 2. Leslie Stephen, An Agnostic's Apology (the 1893 edition, republished by Gregg International Publishers Ltd., Hants, 1969), P.1.

The issues of controversy deal with the vague and unknown nature of the Supreme Being, the soul, and the existence of a future life. The scientist's ignorance of such unobserved phenomena often leads him to assert that the door is locked to scientific knowledge, that is to say, that the issues lay outside the scope of rational enquiry.

In the Encyclopaedia Britannica Jaroslav Jan Pelican points out that: "The inventor of the word agnosticism was himself responsible for its nontechnical use as a designation for one of the combatants in the 19th century 'warfare of science with theology'".¹ The author of this article, a Professor of Ecclesiastical History at the University of Yale, New Haven, suggests that the agnostic trend has lost its value in the twentieth century because of its hostility to Christian tradition. Such a judgement, of course, is hardly acceptable outside theological circles. However, Agnosticism, which emerged in the last three decades of the nineteenth century, was in conflict not only with theology but also with many metaphysical schools of philosophy such as the spiritual and the psychological. Students of Positivism were not less opponents to the agnostics than the theologians, though Positivism itself was looked upon as an agnostic philosophy of some kind as E.L. Mascall writes: "The Positivism of Auguste Comte, which condemns both theology and metaphysics as past phases of human thought, is essentially agnostic, but the arch-agnostic is probably to be found in Herbert Spencer, whose attempt to write philosophy in terms of 19th century physical science has been as impermanent in its effects as it was popular among his contemporaries."² Although agnostic philosophy appeared, more or less, in the writings of Hume, Kant, Sir William Hamilton, and Herbert Spencer, it was popularised by Huxley and Leslie Stephen in the second half of the nineteenth century.

1. "Agnosticism", J.J. Pelican, Encyclopaedia Britannica, vol.I. (U.S.A: 1967), P.331.

2. "Agnosticism" by E.L. Mascall, Encyclopaedia Britannica, vol. I. (London: Pergamon Press, 1967), P.152.

The controversy surrounding this philosophic concept between Huxley and his opponents such as Henry Wace, Frederic Harrison and Gladstone, is the concern of this study.

Huxley adopted the agnostic attitude in an attempt to distinguish himself from other thinkers with whom he used to discuss such philosophic topics at the meetings of the Metaphysical Society.¹ His article on "Agnosticism" was a reaction to the public exposition of this philosophic trend by Henry Wace, the Chairman of King's College, Manchester, and the Bishop of Peterborough at the Church Congress held in Manchester, 1888. Henry Wace was the first to declare that the agnostic was an 'infidel' because he believed neither in the 'unseen world' nor in the authority who brought Christianity to this world. "It is," said Wace, "and it ought to be, an unpleasant thing for a man to have to say plainly that he does not believe in Jesus Christ".² This statement and the Bishop's pronouncement of a 'cowardly agnosticism' were specifically cited by Huxley who considered them implicitly, as well as explicitly, addressed to him. Therefore, he defended himself on a personal ground, not as a 'prophet or pope' of agnostics as his opponents seemed to regard him.

Replying to Wace's statement of the agnostic's open disbelief in Christ, Huxley remarked that the question of what Jesus 'really said and did' had already preoccupied some of the best European minds in the eighteenth century. In a footnote Huxley referred to the works

1. Huxley himself asserted this attitude at "that remarkable confraternity of antagonists, long since deceased, but of green and pious memory, the Metaphysical Society. Every variety of philosophical and theological opinion was represented there, and expressed itself with entire openness; most of my colleagues were -ists of one sort or another; and however kind and friendly they might be, I, the man without a rag of a label to cover himself with, could not fail to have some of the uneasy feelings which must have beset the historical fox when, after leaving the trap in which his tail remained he presented himself to his normally elongated companion." Quoted from The Nineteenth Century "Agnosticism", T.H.Huxley, (February, 1889), vol.25, P.187.

2. Ibid., P.170.

of Strauss, Reuss, and Volkmar on the topic and demanded evidence for Renan's 'practical surrender' assumed by Henry Wace. He argued that the 'trust and faith' which made the Islamic world was similar to that which had made the Christian world, though, to Wace, Mohammad was an 'infidel' who committed millions of people to 'everlasting punishment'. Citing Henry Wace, Huxley concluded that "the 'trust and faith' which have made the Mohammedan world', in just the same sense must be trust and faith in falsehood."¹ Thus Huxley touched upon the matter of faith which is the essence of the whole Christian tradition. In order to assess the value of that faith in the teachings and actions of Christ, Huxley put the statements of the Gospels to a test of a scientific nature.

Huxley rejected the belief in demons and condemned the clergy who believed and forced people to believe in such witchcraft and superstitions. He first referred to the story of the Gadarene swine which were taken over by the devils supposed to have been cast out by Jesus from a possessed man. He declared that according to physiological and pathological information, the phenomenon of possession might have been similar to that of smallpox.

Referring to St. Mark's version of the evil spirit and citing his words, Huxley wrote:

'Come forth, then unclean spirit, out of the man' are the words attributed to Jesus. If I declare, as I have no hesitation in doing, that I utterly disbelieve in the existence of 'unclean spirits' and, consequently, in the possibility of their 'coming forth' out of a man, I suppose that Dr. Wace will tell me I am disregarding the testimony 'of our Lord'.²

In order to support his view of disbelief in demons, Huxley cited the 'Biblical Cyclopaedia' (Vol.i., P.664, note) whose writer argued that Jesus and his Apostles could not have spoken of demons, their entering

1. Ibid., P.171.

2. Ibid., P.172.

into a man, and their casting out, "without pledging themselves to the belief of an actual possession of the man by the demons. /And/ if, consequently, they did not hold this belief, they spoke not as honest men."¹ In addition to Mark's Gospel both Matthew's (viii, 31 - 31) and Luke's (viii, 29), asserted Huxley, contained the story of the devils in different versions. He again declared that science refused to accept such mediaeval delusions which were inherited by Christian tradition from savages.

Huxley's scepticism is revealed throughout the essay. Again relating to the episode of the Gadarene swine, he questions the authority of both Christ and the authors of the Synoptic Gospels. On the one hand, if the event was recorded exactly as it occurred, then, given his doubts concerning the existence of devils, Christ's actions appear, to Huxley, to be suspicious. On the other hand, if the event was not reported accurately then, how can the Gospels, which were fraudulent on such a simple matter, be trustworthy on serious questions like the Deluge, the Fall of Man, and the Creation, stories which lacked all scientific proof. Thus Huxley's analysis of the Gadarene story led him to a judgement by which he refuted the whole notion that the three gospels were the work of three independent writers by remarking that: "Each of the three is compilation consisting of a ground work common to all three - the threefold tradition; and a structure, consisting, firstly, of matter common to it with one of the others, and secondly, of matter special to each."² According to this conclusion Huxley associated the Gadarene story to the 'ground-work' simply because it was related in the three Gospels, and because the belief in demons was common among the pagans as

1. Ibid., P.173.

2. Ibid., P.175.

well as the Jews. He strongly asserted that the notion of demons was manipulated by the 'unknown writers'¹ of the Gospels who not only ascribed it to Jesus but also bestowed the power of casting out evil spirits from man upon themselves by claiming that Jesus told his disciples: "In my name shall they cast out devils."²

However, Huxley's agnosticism, as applied to the Gadarene swine, was based on the view that there was no scientific explanation for the phenomenon of demons transferring from men to swine except in terms of 'toenioe and trichinoe', the physical diseases which could be mutually transferable between man and swine with a deadly effect on both. Although Huxley did not utterly reject the existence of a spiritual world, he announced that what was offered as evidence based on subjective grounds was insufficient. The subjective faith, he explained, was originally a hope which grew into a strong feeling and, eventually, into certainty. He did not deny the practical value of faith in building up social advantages, though he attacked the morality of the Gospel writers who attributed to Jesus the casting out of demons and the destruction of people's property.

In his essay Huxley told the story of his scepticism which developed early in life at a time when he was a schoolboy at an

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1. In a footnote Huxley wrote: "I repeat, without the slightest fear of refutation, that the four Gospels, as they have come to us, are the work of unknown writers." Ibid., P.175.
 2. Jesus' promise to his disciples appears in St. Mark's version as such: "Go into all the world and preach the gospel to the whole creation. He who believes and is baptised will be saved; but he who does not believe will be condemned. And these signs will accompany those who believe: in my name they will cast out demons; they will speak in new tongues; they will pick up serpents, and if they drink any deadly thing, it will not hurt them; they will lay their hands on the sick, and they will recover." (Mark 16, verses 15 - 18), P.836 of The Bible, Revised Standard Version (G.B: Published by the British & Foreign Bible Society 1971).

institution with strict Evangelical regulations. He related that his later inquiry concerning the truth of what he had been taught revealed to him unpleasant implications. The several mediaeval pictures of Jesus as the 'peaceful Christ', the 'stern judge', or the 'bleeding ascetic' confused him for a time. Challenging his opponents, Huxley declared that he would remain agnostic as long as satisfactory evidence was not offered for what Jesus really said and did.

Afterward, Huxley criticised Henry Wace's statement that if one was not a Christian, one would be an infidel by asserting that the term 'Christian' itself appeared very lately in Christian tradition, that it was originated by Paul and Barnabas at Antioch, and that the Roman, Greek, and Protestant churches were its living results. He added that there were several sects whose members accused each other of infidelity to an extent that one would be confused to be faithful to any creed, though they all proclaimed that they were teaching the Word of God. Illustrating the conception of 'infidel', Huxley pointed out that:

"'Infidel' is a term of reproach, which Christians and Mahommedans, in their modesty, agree to apply to those who differ from them."¹ Probably Huxley offered this definition only to denote that the term 'infidel' was applicable to Henry Wace, particularly when the former remarked that: "It may be logically, if not ethically, defensible that a Christian should call a Mahommedan an infidel and vice versa; but, on Dr. Wace's principle, both ought to call themselves infidels because each applies that term to the other."²

Huxley recalled an event³ which occurred to him during

1. Ibid., P.181.

2. Ibid., P.181.

3. It is interesting to note Huxley's own words: "I once visited the Hazar (sic) Mosque, the great University of Mahommedanism, in Cairo, in ignorance of the fact that I was unprovided with proper authority. A swarm of angry undergraduates, as I suppose I ought to call them, came buzzing about me and my guide; and if I had known Arabic, I suspect that 'dog of an infidel' would have been by no means the most 'unpleasant' of the epithets showered upon me, before I could explain and apologise for the mistake. If I had had the pleasure of Dr. Wace's company on that occasion, the indiscriminate followers of the Prophet would, I am afraid, have made no difference between us; not even if they had known that he was the head of an orthodox seminary." Ibid., P.181.

his visit to the Azhar¹ University in Cairo only to stress that the Muslim students there would have applied the term 'infidel' to both himself and Wace in the same sense without distinction between an agnostic or a priest.

During his prime of life Huxley was a "voracious and omnivorous reader" who was influenced by Guizot's History of Civilisation and Sir William Hamilton's essay "On the Philosophy of the Unconditioned", as he himself narrated. Although he asserted that both History and Philosophy were his main interests besides natural science, his 'liege lady', he did not claim a distinct position among the experts of either. In order to denote the source from which his agnostic philosophy emerged, Huxley referred to David Hume and Kant.² He also added Dean Mansell to the eminent agnostics of his time. The philosophic conclusions at which Huxley arrived are here plainly illustrated in his own words:

When I reached intellectual maturity and began to ask myself whether I was an atheist, a theist, or a pantheist; a materialist or an idealist; a Christian or a free thinker; I found that the more I learned and reflected, the less ready was the answer; until, at last, I came to the conclusion that I had neither art nor part with any of these denomination, except the last. The one thing in which most of these good people were agreed was the one thing in which I differed from them. They were quite sure they had attained a certain 'gnosis', - had, more or less, solved the problem of existence; while I was quite sure I had not,³ and had a pretty strong conviction that the problem was insoluble.

It was in the quarters of the Metaphysical Society that Huxley took this decision to label himself as an Ishmaelite in his attitude towards his

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1. The name 'Hazar' which appears in the text is mistaken and it has not been corrected in both Huxley's Collected Essays, Science and Christian Tradition (London: Macmillan & Co. Ltd., 1904 vol. v., P. 234), and in Henry Wace's quotation of the word in his article, "Agnosticism: A Reply to Professor Huxley" which appeared in the Nineteenth Century (1889) vol. 25, P. 358. An idea about this institution can be seen in P. 251 below.
 2. Huxley cited Kant's view that: "The greatest and perhaps the sole use of all philosophy of pure reason is, after all, merely negative, since it serves not as an organon for the enlargement (of knowledge), but as a discipline for its delimitation; and instead of discovering truth, has only the modest merit of preventing error." Ibid., P. 182.
 3. Huxley article "Agnosticism", op. cit., pp. 182 - 183.

colleagues and as an agnostic in the philosophy of life. The origin of the term 'agnostic' was related to Huxley himself, who remarked: "So I took thought, and invented what I conceived to be the appropriate title of 'agnostic'. It came into my head as suggestively antithetic to the 'gnostic' of Church history, who professed to know so much about the very things of which I was ignorant; and I took the earliest opportunity of parading it at our Society, to show that I, too, had a tail, like the other foxes."¹

Frederic Harrison's article entitled "On the Future of Agnosticism" which appeared in the Fortnightly Review (January 1889) was also refuted by Huxley who made a slashing attack against Positivism and certain contradictory statements and views on science and history as presented by Harrison. Huxley recalled John Bunyan's concept of religion as "pope and pagan rolled into one"² only to remark that Christianity was associated with Positivism in the same manner. When Harrison announced that "Agnosticism is a stage in the evolution of religion", Huxley retorted that if Harrison meant by 'religion' theology, agnosticism, then, would be "a stage in its evolution, only as death may be said to be the final stage in the evolution of life."³ When Harrison described the agnostic faith as strange and the agnostic logic as peculiar, Huxley replied that agnosticism had no particular faith except in logic. He answered Harrison's statement that agnostic philosophy was based on purely physical conclusions by asserting that David Hume, the philosopher, was not a physicist, yet he was the 'Prince of agnostics'.⁴

Harrison's devaluation of Huxley's historical knowledge concerning "the place of religion as an element of human nature, as a

1. Ibid., P.183.

2. Ibid., P.187.

3. Ibid., P.188.

4. Ibid., P.188.

force of human society, its origin, analysis, and function", was confronted by a similar polemical attack which pointed to Harrison's lack of knowledge in several fields such as physical science, its methods, and its conclusions, in addition to his poor acquaintance with the criticism of history and philosophy. The last two subjects were considered by Huxley as the essential basis for the understanding of agnosticism.

Harrison's prediction that agnosticism would have no future, while Positivism would be the worldwide and everlasting religion of humanity, was rejected by Huxley who pointed out that Positivism would come far below the scientific theory of evolution in the ladder of philosophic schools. This scientific naturalism was Huxley's favourite religion as his own words stated: "But when the Positivist asks me to worship 'Humanity' - that is to say, to adore the generalised conception of men as they ever have been and probably ever will be - I must reply that I could just as soon bow down and worship the generalised conception of a 'Wilderness of apes'".¹ There is every reason to believe that Huxley's objection to the worship of man as a Divine object, and to Humanity as a god-like concept was based on his study of human nature whose history of development indicated to him a gloomy future for our world. His picture of man's nature and of his own pessimistic state are outlined in a long passage, fragments of which are worth citing, he wrote:

I know no study which is so unutterably saddening as that of the evolution of humanity, as it is set forth in the annals of history. Out of the darkness of prehistoric ages man emerged with the marks of his lowly origin strong upon him. He is a brute,... a blind prey to impulse; ... a victim to endless illusions,... /He/ struggles with varying fortunes, attended by infinite wickedness, bloodshed, and misery, to maintain himself at this point against the greed and the ambition of his fellow-men. He makes a point of killing and otherwise persecuting all those who first try to get him to move on; and when he has moved on a step, foolishly confers post-mortem deification on his victims. He exactly repeats the process with all who want to move a step farther.²

1. Ibid., P.191.

2. Ibid., pp. 191-192.

Moreover, he concluded that the worship of Humanity or a 'God', by which he probably meant Auguste Comte, who himself was in need of "forgiveness and help", was intelligible and a kind of fetishism. However, the passage above shows a great change in Huxley's outlook and philosophy of life. In the prime of his life, his evolutionary writings had reflected a promising future for a progressive world, but now this changed into a world of depression and melancholy. His picture of the civilized man, the master of nature, the owner of wisdom, and the recipient of virtue and beauty has been dwarfed into a creature whose body is that of a brute and whose mind is related by fancy. Besides, the cyclic process of life on earth has never mistaken its natural laws of mechanism and determinism within a framework of agnostic final causes. Philosophic views as such inevitably exclude the Supreme Power that confers perfect intellect and morality upon man whose brutal nature seemed, to Huxley, much stronger than his inspired visions of revealed wisdom and virtues.

In Huxley's essay, Positivists and Mormons were treated as members of two sects belonging, more or less, to one speculative religion of Humanity. Putting his words into the mouth of a twentieth century historian, Huxley portrayed the rise and fall of these sects by referring to the qualifications of their founders, the concept of their teachings, and an estimation of their adherents.

Huxley wrote that both the Mormons and the Positivists appeared, more or less, at the same time, the middle of the nineteenth century. Joseph Smith, the founder of Mormonism, was known as 'a low-minded, ignorant scamp' who had, however, 'some force of character' through which he probably attracted a good number of disciples to his circle. In spite of the pressure of public persecution, the Mormons increased in number, probably helped by the acts of violence during one of which Joseph Smith was brutally murdered by the excited mob of Republicans, the cruelty of which was denounced by Huxley. As a consequence of such

cruelties the Mormons, narrated Huxley, left for the deserted oasis of Utah where they settled and flourished. In 1880, the Mormons became about 110,000 in America, while in Europe there were between 30 to 40 thousand of them. In words of appreciation blended with censure about the community of Mormons and its founder, Huxley remarked that: "In the whole history of religions, there is no more remarkable example of the power of faith, and, in this case, the founder of the faith was indubitably a most despicable creature."¹

With regard to Positivism Huxley narrated that it was founded by Auguste Comte and spread among a sceptical group of Parisians. In contrast to the popularised view Huxley saw no eminence in Comte's knowledge of mathematics, nor any particular acquaintance with physics, chemistry, and biology. Moreover, Huxley described Comte's works as 'repulsive', and his character as "'a syncretic', who, like the Gnostics of early church history, attempted to combine the substance of imperfectly comprehended contemporary science with the form of Roman Christianity."² Comte's attempt at reconciliation between the two hostile enemies, Christianity and science, was ironically caricatured in the schoolboy's attempt of making "a spectre out of a turnip and a tallow candle".³

Although the followers of this religion were few in both France, its native land, and in England, Huxley stated, their voice was heard all over the world because of "the advocacy of one or two most eloquent and learned apostles"⁴, who devoted their talents and sympathies to its service. His underestimation appeared in his judgement that the Positivists were not persecuted but scorned.

Henry Wace and the Bishop of Peterborough, in a combined article entitled: "Agnosticism: A Reply to Professor Huxley"⁵ criticised

1. Ibid., P.193.

2. Ibid., P.193.

3. Ibid., P.194.

4. Ibid., P.194.

5. The Nineteenth Century (March 1889) vol.25, pp.351-371.

Huley's essay. H. Wace thanked Huxley for popularizing his paper which was read at the meeting of the Church Congress in Manchester five months before ,the contents of which he restated in this article. He expounded that the main difference between a Christian and an agnostic was that the former believed in the existence of a Father who would reappear to judge the world , and also in a future life , while the agnostic found "no means of a scientific knowledge of the unseen world or of the future"¹ , in which to believe .

The latter part of the statement seems to be ironic. He also asserted that the agnostic denied the teachings of Jesus Christ altogether. Huxley's offensive statements , such as "the pestilent doctrine on which all the churches have insisted , that honest disbelief", were cited by Wace expressly for the purpose of defending his own morals .

Wace argued that in as far as the agnostic regarded Jesus as a man , he must necessarily be considered mistaken . Probably , this argument was brought forward only to assert that the Agnostic , or Huxley in particular , was really an infidel who undermined the essential doctrines of Christianity as maintained in the Sermon on the Mount . Wace concentrated in his argument on the Christian faith as a basis for the certainty of the Gospels , though he found the Gadarene story "one of the most difficult and mysterious narratives in the New Testament"² , to start with . Therefore, he neglected the discussion of this story , though it was one of Huxley's main arguments .

The term ' infidel ' was the kernel of the controversy between the disputants . Wace did not like Huxley's relative use of the meaning of the term, though he agreed with him that the Muslim students

1. Ibid . ,p. 352 .

2. Ibid . , p.356.

would have called both of them infidels, had he been in Huxley's company at the Azhar. Wace pointed out that Huxley was ignorant of Muhammad's claims only to offer his irrelevant ecclesiastical information within a hostile framework by saying that:

A Mahomedan believes and asserts that there is no God but God, and that Mahomet is the Prophet of God. I don't believe Mahomet. In the plain, blunt, sensible phrase people used to use such subjects, I believe he was a false prophet, and I am a downright infidel about him.¹

The term 'downright infidel' was also addressed to Huxley in a polemical manner in which Wace said that for all Huxley's distinction, "he was at bottom a downright infidel".² However, such polemics characterise the writings of most fanatical doctrinaires, particularly the theologians. In fact, one should feel pity for the passionate pulpits of religion, the narrow-minded controversialists, representatives of ideological or dogmatic schools, and the blind fanaticists who sow hostility and hatred in the innocent minds of common people and children, feelings which will grow into rancour and perpetual enmity not only among the citizens of one country but also among all nations of the world. Therefore, any declaration which is assertively directed against a particular faith would seem to be unwise and aggressive, particularly when this is committed by a scholar. A similar criticism may be applied to those responsible for exacting certain declarations of faith from British scientists in the 1860's after the appearance of Essays and Reviews (1860) and other works.

However, the disputants, Wace and Huxley, continued to accuse each other of (a lack of) morality, citing the mutual statements which readily reflect the spirit of hostility existing between science and religion. In short, neither of them had the full argument on his side.

1. Ibid., pp. 358 - 359.

2. Ibid., P.358.

The speculative and poetical reader may enjoy Henry Wace's mystical and rhetorical style of which we cite a specimen:

"In spite of all the critics, the Gospels have conveyed to the minds of millions of men (a) living image of Christ. They see Him there; they hear His voice; they listen, and they believe Him. It is not so much that they accept certain doctrines as taught by Him, as that they accept Him, Himself, as their Lord and their God." ¹

But the other reader, who seeks pure facts, may admire Huxley's more rational argumentative style. Although one may find elements of malice and, perhaps, cunning implies in Huxley's manner of exposition, one may perhaps justify their use if they are compared with the contrary statements of his opponents. One can also see that there is nothing particularly new in the arguments of both writers because Huxley's attack of the Gospels has been mainly based on the works of the German and French critics, while Wace's discussions have been characterised by a personal faith, a passionate analysis, and an old-fashioned theological presentation. Both are exclusive in their quotations of the High Criticism, particularly from Ernest Renan. Each claims that Strauss, Baur, Reuss, and Volkmar are on his side, and it will take us too far afield if we try to assess these claims in this exposition. However, it is fair to judge that personal faith is not rational evidence and that the truth of the controversial issues lies unresolved.

As a supplement to Henry Wace's article there are two and a half pages which were written by the Bishop of Peterborough. The main difference between Huxley and the Bishop was the phrase "cowardly agnosticism" unwisely used by the latter at the Manchester meeting. When Huxley described the use of the phrase as immoral on the part of the Bishop, the latter asserted that there were "cowardly agnostics" who did

1. Ibid., P.360.

not care about the problems of life. These were the "youthful professors" who were described by the Bishop as the "chatterers in our clubs and drawing rooms..., free thinkers who had yet to learn to think."¹ The last part of the passage hits, of course, directly at Huxley who plainly declared in his article that he had belonged to that group of thinkers long ago.

In April 1889, another article appeared under the title of "Agnosticism: A Rejoinder", in which Huxley rejected Henry Wace's conclusions that the modern critics of the Bible admitted the authenticity of the Gospel authorities by declaring in a footnote that Wace's conclusions were "as gravely as surprisingly erroneous".² In a very heated manner, Huxley challenged the Bishop if he was able to offer any evidence against the statement. Huxley also asserted that he was deliberately dragged into the controversy by Henry Wace and others who sent him a copy of their attack against agnosticism at the Church Congress. He described the theologians of whom Henry Wace was an example as "generations of spiders" which must be swept away.

With regard to the difference between the Biblical critics which was referred to by Wace, Huxley expounded that there was a kind of difference between the most distinguished naturalists such as Buffon, Lamarck, Linnaeus, and Cuvier on whose contributions science of biology was founded. He asserted that such differences or even contradictions between scientists and thinkers often resulted in the building up of true and consistent knowledge. In his answer to the Bishop's statement that: "A scientist dealing with questions of theology or Biblical criticism may go far astray as theologians often do in dealing with questions of science", Huxley remarked that what he had offered of arguments about the criticism of the Gospels had nothing to do with his

1. Ibid., P.370.

2. "Agnosticism: A Rejoinder", T.H. Huxley, The Nineteenth Century, (April, 1889), P.482.

scientific knowledge except the scientific method which he applied to the historical events of the Bible, and the theoretical thought which he imported from Germany and Holland. His justification of the Biblical criticism was based on the notion that every scholar had the right to judge the words of the Bible and that this "private judgement" was the essence of the Protestant Reformation, in contrast to that "idolatrous sacerdotalism", which was imposed on the English by the theologians of old generations. Thus, he attacked the ecclesiastical authorities, their differences over trivial subjects, and their enslavement of the common people by monopolising the interpretation of the Bible in their favour. Although he referred to the supremacy of the Book, he remarked that:

"It is so certain, to my mind, that the Bible contains within itself the refutation of nine-tenths of the mixture of sophistical metaphysics and old-world superstition which has been piled round it by the so-called Christians of later times; it is so clear that the only immediate and ready antidote to the poison which has been mixed with Christianity, to the intoxication and delusion of mankind, lies in copious draughts from the undefiled spring, that I exercise the right and duty of free judgement on the part of every man, mainly for the purpose of inducing other laymen to follow my example.¹

Huxley stated that the creeds and the articles which appeared in the Epistles were, more or less, deduced in the manner of scientific investigation, the method which was always attacked by theologians. He appreciated and demanded the application of scientific criterion to the historical genuineness of the Biblical events. "If it is not historically true that such and such things happened in Palestine eighteen centuries ago", asked Huxley, "what becomes of Christianity?"² Moreover, he made it clear that scientific criticism which had appeared a century before (independent of the churches' sanction), suggesting solution for the Biblical problems, though he found that some of those solutions were false and other debatable.

1. Ibid., P.485.

2. Ibid., P.485.

Apart from the significance of the right of free interpretation of the Biblical stories to which Huxley drew attention, he appealed to the original teachings of Christianity¹ as they had been taught by Christ himself as a unit, not as sectarian creeds and doctrines. Huxley affirmed that the New Testament itself offered evidence that it was a compilation by pointing out that:

"It must be remembered that New Testament books are not responsible for the doctrine invented by the churches that they are anything but ordinary historical documents",

and that the author of the third Gospel himself was no more than "an ordinary compiler and editor".²

However, Huxley denied the authenticity of both the Sermon on the Mount and the Lord's Prayer by arguing that if they were the essentials of Christianity as Henry Wace believed, the second Gospel (Mark's), which was considered by critics³ the closest source to the older tradition, would not have failed to include them. He even raised doubt about the place and time of the insertion of the Sermon into Matthew's Gospel. Confirming that the versions of Matthew and Luke were not independently written by demonstrating the close similarity in word and spirit between Matthew's version of the Sermon and a certain sermon which, by way of distinction, Huxley named "The Sermon on the Plain". He also referred to the considerable interpolations and the excessive number of verses in Matthew's version, the reason which made Huxley believe that Luke's version was the more genuine of the two, though he announced that both were inaccurate records.⁴

With respect to the genuineness of Matthew's Gospel, Huxley drew attention to the differences between the two existing versions of Matthew and Luke. He argued that there were two possibilities:

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1. Both Afghani and 'Abduh, modernist theologians, appealed to the original teachings of Islam in the same manner as Huxley demanded.
 2. The Nineteenth Century, Huxley, *op. cit.*, P.486.
 3. Huxley referred to critics such as Abbot, Rushbrooke, Skelton and Holtzmann who maintained the idea.
 4. The Nineteenth Century, Huxley, *op.cit.*, P.488.

either Luke was aware of Matthew's version of the Sermon on the Mount or he was not. In the first case, if Luke knew the Sermon and deliberately ignored it, it must be because it was not authentic, and in the second case, if he had no idea of its existence, the Canonical Gospel of the churches would collapse. The difference between the two versions was indicated by the fact that there are only 29 verses in Luke's version of the Sermon while there are 107 verses in Matthew's, and that the interpolations were 30 verses in the beginning and 34 at the end, while the central verses are nearly identical in word and spirit. Huxley also refuted the Lord's Prayer on the same grounds that it had no existence in St. Mark's Gospel and that it was a prayer similar to one included in the Jewish "Schemone Esre" or a substitute for it, and that Jesus himself was a pious Jew who prayed three times a day like other Jews.

When Henry wace raised the question of the authenticity of the story of the Passion, Huxley announced that he had no suspicions about the event of the crucifixion, but he refused to accept the process of Christ's resurrection because he found no solid evidence in favour of Paul's account of the story. Huxley related the story of the Passion as presented in the second Gospel, and argued that "six hours punishment was inconsistent with the fact that man's body could bear several days of hunger and thirst", and with Pilate's experience in the ways of torturing. He added that Paul's version of the Passion was written twenty years after the event, a period which was supposed to be enough for the appearance of mythological interpolations like that of the Emperor Nero who was assumed to reappear after his death in order to take revenge on his enemies. Embracing Mark's version, Huxley asserted that nothing positive was known about the end of Jesus of Nazareth ~~th~~ other than the facts that Jesus was crucified for six hours, deposited in a rock-cut tomb which allowed ventilation, and that three women visited the tomb after nearly thirty

six hours and were told by the Roman guard that Jesus had been taken to Galilee, his native land, where Peter and others would find him.

Huxley explicitly affirmed that there were discrepancies in the versions of Matthew, Luke and the Acts, and he implicitly indicated that Paul's version as a single witness was invalid. He referred to the strange attitude of Paul who once, in an enthusiastic vision, told that he saw Christ in Heaven, and with the same zeal, declared that he had not examined the facts of the story of the Passion.¹

Huxley also belittled the authority of the Epistles, basing his opinion on Paul's fluctuating attitude toward the disciples of Jesus - particularly James, the Lord's brother, Peter, and John - which appeared in his conflict with them over the Gentile converts, and in his agreement to keep the law as requested by them when Paul last visited Jerusalem. Huxley asserted that the disciples as well as their followers in Jerusalem were "strict Jews" and that the only difference between them and the Jews was that the former believed that the Messiah was Jesus of Nazareth while the latter did not. However, admission to Paul's 'Christian' community established at Antioch, was based on "the belief that Jesus was the Messiah, and baptism upon that confession". He, afterwards, proceeded to define modern Christianity by saying that:

"The universalist 'Christianity' is an outgrowth from the primitive, purely Jewish, Nazarenism; which gradually eliminating all the ceremonial and dietary parts of the Jewish law, has thrust aside its parent, and all the intermediate stages of its development, into the position of damnable heresies".²

In order to confirm his previous arguments, Huxley pointed out that both Peter and John had no idea of the Sermon on the Mount, and that these two and Paul were not aware of Jesus' words which

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1. Huxley cited Paul's words: "Immediately I conferred not with flesh and blood; neither went I up to Jerusalem to those who were Apostles before me; but I went away into Arabia". (Galatians 1;16,17).
 2. The Nineteenth Century, Huxley, "Agnosticism: A Rejoinder", op. cit., P.499.

appeared in Matthew's Gospel: "Go ye, therefore, and make disciples of all the nations, baptizing them in the name of the Father and the Son and the Holy Ghost", a command which must have been very essential and significant since it was given on the solemn occasion of Jesus' parting. With respect to the fourth Gospel, Huxley described it as "a theosophic romance of the first order", which was not written by John but by "a man of remarkable literary capacity, who had drunk deep of Alexandrian philosophy".¹ Moreover, he rejected the doctrine that the Messiah would soon come back to earth, which was prevalent, and still is, by describing it "a prodigious error", and that Christ must have been "under an illusion" if He really believed and taught such a doctrine.²

The whole discussion about the authority of the Gospels revealed Huxley's disbelief in the Divine personality of Christ, the notion of Resurrection, and the story of devils, supporting his attitude by demonstrating the discrepancies, contradictions, and fallacies which existed in the different versions of events in the Bible. As for the theory of a spiritual world in the Gadarene story assumed by the theologians, Huxley bluntly declared:

"I hold that this theory is false and that it is a monstrous and mischievous fiction; and I unhesitatingly express my disbelief in any assertion that it is true, by whomsoever made."³

He closed his article by preferring to be named an 'infidel' with commonsense rather than a 'Christian' of the Bishop's or Henry Wace's type.

The controversy went on for another clash in two articles under the title of "Christianity and Agnosticism" by Henry Wace and the Bishop of Peterborough, and "Agnosticism and Christianity" by Huxley, which appeared respectively in May and June of 1889. In the first essay

1. Ibid., P. 500.

2. Ibid., P. 501.

3. Ibid., P. 503.

Henry Wace denounced Huxley's approach by which the latter shifted the argument from the belief in Christ to the general criticism of the Bible by its hostile critics such as Strauss, Baur, Reuss, and Volkmar whose judgement Wace never accepted, though he pointed out that they were misquoted. Huxley's public discussion of the authenticity of the Sermon on the Mount, the Lord's Prayer and the Story of the Passion allowed Wace to hit at his opponent's lack of faith which was explicit in his arguments. In order to evade the argument about the historical authenticity of the event to a subordinate issue, Wace wanted Huxley to explain whether the Sermon contained the essentials of the Lord's teachings or not.

With respect to the question of the difference between the two versions of the Sermon on the Mount in Matthew and Luke, as raised by Huxley, Wace argued that it was very similar to the difference between the Times' reporter and that of the Standard, and in his own words: "If a long report of a speech appears in the Times, and a shortened report appears in the Standard, everyone knows that we are nonetheless acquainted - perhaps made still better acquainted - with the essential purport and cardinal meaning of the speaker."¹ However, Wace's argument lacks the depth of thought which one expects to find in such a scholar, for to think of the Gospel writers in terms of newspaper reporters who often belong to particular ideology and trends, have personal motives, is to debase both the writers and the Gospels by depriving the former of their scholarly merits and the latter of their truthful characteristics as the Words of God.

There is another argument which Wace considered strong enough to refute Huxley's disbelief in the authority of the Gospels. Wace

1. Henry Wace and the Bishop of Peterborough, "Christianity and Agnosticism", The Nineteenth Century, (May, 1889), P.203.

wanted to know why a certain biographer of Christ should be trusted more than another, why the absence of a certain event, or events, should reflect suspicion upon other accounts. This line of argument is not entirely convincing since it appears to equate the Bible, supposedly the word of revelation, with an ordinary work, and its authors with mere biographers. If we are to treat the authors of the Bible in this way, we have to bear in mind that, as mere biographers, they will be influenced by the subjective judgements, and prejudices common to that trade, apart from the fact that historical events are usually recorded according to how the people and the historians of the day felt about them, not as they actually occurred.

Wace stated that Huxley avoided the real argument of the Passion and emphasised instead the story of the Resurrection. Therefore, he took the opportunity to retell the story of the Passion in a rhetorical manner, and attacked Huxley who did not discriminate between the Passion and Resurrection, and who irrelevantly assaulted the doctrine of Resurrection which was, to Wace, one of the most substantial creeds of Christianity. We notice that Wace himself failed to put forward any argument in favour of that creed, or even any interpretation for such an extraordinary phenomenon except that the Church had been founded on this creed and that the event was not "a vision", as Huxley supposed, but a manifestation of St. Paul who set himself to the task of attesting the truth about such an important event, and that Paul was trusted by both the Apostles and the Pharisees.

Henry Wace explained that Huxley's claim that Jesus was an orthodox Jew because all the 'primitive Nazarenes' were so, was "a round-about method" by which he wanted to debase the authority of Jesus Christ. Although he described Huxley's claim as a complicated and "thorny question", he did not deny that possibility but, on the contrary, he asserted that

an orthodox Jew believed in God and Revelation while an agnostic did not.

When Huxley challenged Wace asking him in which of the two versions he believed: in Luke and Mark in which there is one possessed man, or in Matthew where there are two possessed men, Wace replied that he believed in both by suggesting that probably "the only important point", to St. Mark and Luke, "was the nature of the miracle itself, and not the number of possessed men who were the subjects of it", exactly as the observer's interest is in the nature of an operation, not in the number of patients. However, Wace announced that 'verbal accuracy' was not necessary in reporting the details of revelation. Finally, he rejected Huxley's claim that the Germans were ahead of the English in reading the Bible with open minds by referring to a certain Riehm who acknowledged in the preface of his Handvörterbuch that the Germans were behind the English; which Wace attributed to the fact that the public readings from the English Bible were accessible to Biblical criticism.

This article has been followed by nearly a page of W.C. Peterborough's polemical words which can be summarised in his statement that Huxley had the "readiness to say unpleasant,... offensive things" such as 'sorry' or 'poor stuff' in describing Christianity.

To Wace's attack Huxley retaliated in his article entitled "Agnosticism and Christianity"¹, in which he opened the debate by speaking of the uses and abuses of controversy as a whole. He proceeded to define what he meant by agnosticism and to assert that this concept was not a creed but a logical method of looking at the elements of truth in the mysterious questions of life. Referring to these questions and reflecting on the metaphysical schools of philosophy, Huxley remarked:

1. T.H. Huxley, "Agnosticism and Christianity", The Nineteenth Century, vol. 25 (1889), pp. 937 - 964.

"Materialism and Idealism; Theism and Atheism; the doctrine of the soul and its mortality and immortality - appear in the history of philosophy like the shades of Scandinavian heroes, eternally slaying one another and eternally coming to life again in a metaphysical 'Nifelheim'." ¹

In a metaphor he saw the history of metaphysical philosophy as a stone that no sooner rolled up a hill than it rolled back down to the bottom from where it began.²

For the purpose of discussing the grounds of difference between agnosticism and religious thought, Huxley differentiated between theology as a science and Ecclesiasticism or Clericalism as a fashion of thought related to a particular form of philosophy. This type of thought was the target of Huxley's attack. He criticised John Henry Newman's definition of 'faith' as "the power of saying you believe things which are incredible", by saying that a faith as such must be "an abomination". In this case the difference between the agnostic and the cleric concerning the nature of faith would render it intellectual as well as moral, because the cleric often charged his opponent's disagreement with his own way of thinking as immoral. Therefore, Huxley found it convenient to defend social values which had been established, not on the doctrines of Christianity, but on the basis of the natural development of societies as a result of experience and rational approaches. Both ancient knowledge and modern science advanced, Huxley said, in spite of Christianity which had sometimes hindered their progress. It is worth listening to what the scientist himself remarked in this connection: "Greek science, Greek art, the ethics of old Israel, the social organisation of old Rome, contrived to come into being without the help of any one who believed in a single distinctive article of the simplest of the Christian creeds. The science,

1. Huxley, "Agnosticism and Christianity", op. cit., P.938.

2. The same metaphor was used by Frederic Harrison for the same purpose, see his "Introduction" to The Philosophy of Common Sense, 1st edition 1907. P.xvii.

the art, the jurisprudence, the chief political and social theories of the modern world have grown out of those of Greece and Rome - not by favour of, but in the teeth of, the fundamental teachings of early Christianity, to which science, art, and any serious occupation with the things of this world, were alike despicable."¹

Huxley here seems to confuse the absence of Christianity with the absence of any religion, ignoring the fact that the connection between ancient philosophy, science, and religion was not as sharply defined as that of the nineteenth century and that nineteenth century science, social organisation, and so forth had been greatly influenced by thinkers operating against a Christian background. Speculations might well have been provoked by religious doubts or meditations without which scientific thought might never have flourished to show the fallacy of certain doctrines.

Huxley, afterwards, once more took up the debate on the Sermon on the Mount, and analysed its essential teaching which confirmed the existence of a spiritual world whose demons once entered into men and were cast out by Jesus. He said that the agnostic denied such declarations which were attributed to Jesus simply because they lacked "historical accuracy". In his exposition of how that "pneumatological doctrine" appeared in the New Testament, he asserted that the belief in spirits was prevalent in the communities of Nazarenes and Christians who supposed it to be sanctioned by Jesus. He expounded that it was held that man was supposed to have been made of two elements, the soul and the body, or the immaterial and material; and that the universe itself had this duality in the corporeal elements of stars and planets and in a spiritual world where Heaven and Hell were vaguely conceived. It seemed to him that the dominant figures in that spiritual world were the devils which were the preoccupation

1. Huxley, "Agnosticism and Christianity", op. cit., P.940.

of the Christians throughout history more than the articles of goodness though both good and evil were created by God.

He asserted that scientific thought could affect a good number of the Christian minds who no longer believed in demonology which constituted nearly half of the Christian creeds. He argued that if there were theologians who still believed literally that the Son of God was sent to destroy the devil's work which was allegorically stated in John's Epistle,¹ then, other doctrines such as Paul's version of the Fall, or Christ's second coming to the earth might be interpreted on the same basis. Those who attributed such actions and sayings to Jesus and His disciples, to Huxley's mind, did harm to them because in reality neither Jesus nor His disciples believed in demons and in exorcism. However, he, time and again, announced his disbelief in the existence of demons, a doctrine which he enlarged so as to contain the denial of the whole spiritual world, taught by Jesus and His disciples. In spite of such a plain declaration, Huxley argued that the term "agnostic" was not equivalent to "infidel" for two reasons; firstly, that there was no rational evidence that Jesus said and did what was ascribed to him concerning the spirits, though he did not completely deny their possibility; and secondly, that the agnostic had the right to declare that he had no positive knowledge of that world. He proceeded to assert that the notion of disbelief in demons inevitably led to the suspicion about the writers of the Gospels, and eventually, to the issue of miracles.

With regard to the difference between the Anglicans and the Roman Catholics concerning miracles, Huxley saw that the former adjusted their concepts as to cope with the requirements of rational and scientific developments of the nineteenth century, while the latter remained static. He cited Henry Newman whose Anglican - Catholic labels reflected the

1. "To this end was the Son of God manifested that he might destroy the works of the devil" (John: iii.8).

different attitudes of Christian intellectuals towards the problem of miracles. He showed that when the Essay on the Miracles,¹ first appeared in 1843, the then Anglican Newman demanded evidence for miracles as to defend them against writers such as Leslie Stephen and others, while in 1870, the Roman Catholic Newman changed his mind and no longer required evidence for the religious and moral truths of miracles.

In his answer to a spiritualist who offered to show Huxley how 'useful' and 'instructive' was the story of the Gadarene swine, Huxley cited from that spiritualist's journal an advertisement² which had caused him to reflect on what he saw as the comparison between the old method of the clerical quackery and the new spiritualist tricks. Those modern spiritualists, Huxley asserted, were similar to the advocates of ecclesiastical miracles such as Tertullian's 'sister' who was supposed to converse with angels, and to the Motanists of the second century who pretended to have the power of mediation possessed by the churchmen. Huxley wanted to know why some of those impostors, whose cunning ways were very similar to those of the churchmen, were sometimes murdered at the stake. He referred to a certain report³ about a group of women who confessed their iniquities, only to show that imposturism was still at work in some circles of his world. Thus, he arrived at the conclusion that: "There is no drawing a line in the series that might be set out of plausibly attested case of spiritual intervention. If one is true, all may be true; if one is false, all may be false."⁴ He applied his conclus-

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1. J.H. Newman, Essays on the Miracles Recorded in the Ecclesiastical History of the Early Ages, (1843); Huxley quoted the 1870 edition, P.cvii, which reads: "If the miracles of Church history cannot be defended by the arguments of Leslie, Lyttleton, or Douglas, how many of the Scripture miracles satisfy their conditions?"; Ibid., P.949.
 2. Huxley cited a long passage of which a portion may be interesting: "TO WEALTHY SPIRITUALISTS - A Lady Medium of tried power wishes to meet with an elderly gentleman who would be willing to give her a comfortable home and maintenance in exchange for her spiritual services, as her guides consider health is too delicate for public sittings: London preferred. - Address "Mary", Office of Light." - Ibid., P.952.
 3. Ibid., P.953; quoted from New York World, Sunday, Oct.21st, 1888.
 4. Ibid., P.953.

ion to both Protestantism, which was confuted by Cardinal Newman, in the latter's Essays on the Development (1878), and Romanism which was refuted by Huxley himself on the basis of historical truth¹ and in the light of Tract 85 of Newman's Tracts for the Times.

In order to support his notion that Christianity drank deep into the sources of Judaism and paganism, Huxley cited Cardinal Newman's words: "Bring all men to Christianity through Judaism" as the latter's interpretation of the command "Preach the Gospel to every creature." Moreover, Huxley asserted that Nazarenes separated themselves from the original Judaic belief by adopting a belief in Jesus as the Messiah. He added that the doctrines of Resurrection, demonology, the idea of Heaven and Hell, and the Day of Judgement, were all of pagan origin.² He anticipated that science would help the positive minds of the civilized world to abandon what he called the 'pneumatological hypotheses'. His firm attitude towards the belief in the spiritual world appeared in his plain and blunt statement that: "If Jesus taught the demonological system involved in the Gadarene story - if a belief in that system formed a part of the spiritual convictions in which he lived and died - then I, for my part, unhesitatingly refuse belief in that teaching, and deny the reality of those spiritual convictions."³ However, Huxley's arguments on the authenticity of the Gospels reveal that he was mainly influenced by Ernest Renan's views presented in Les Evangiles (1877), particularly the notion of the superiority of Mark's Gospel to others in terms of historical authenticity, as he himself acknowledged at the end of the article in question.

1. Ibid., P.954; Huxley remarked: "As he (Newman) rejects Protestantism on the ground of its incompatibility with history, so, à fortiori, I conceive that Romanism ought to be rejected, and that an impartial consideration of the evidence must refuse the authority of Jesus to anything more than the Nazarenism of James and Peter and John." - Ibid., P.954.

2. Huxley wrote: "And there is very strong ground for believing that all these doctrines, at least in the shapes in which they were held by the post-exilic Jews, were derived from Persian and Babylonian sources, and are essentially of heathen origin." Ibid., P.955.

3. Ibid., P.956.

VI. SAMUEL BUTLER'S OPPOSITION TO RELIGION AND DARWINISM.

The last three decades of the nineteenth century

witnessed a rebellion other than agnosticism against Christian doctrine. This rebellion, which took the form of atheism, was presented by Samuel Butler whose ironic criticism appeared to the orthodox so dangerous that it entitled him to be named as The Earnest Atheist.¹

Malcolm Muggeridge commenced his polemical work of the same name by citing Butler's statement, which appeared in Life and Habit (1878) that: "Above all things let no unwary reader do me the injustice of believing in me. In that I write at all I am among the damned."² Muggeridge devoted a full chapter to a sharp attack on Butler's atheism and his accusation of immorality. He called him "earnest atheist" because, as he said, Butler had never attended a church, though he often declared that he was a Broad churchman. Butler's ideas, to Muggeridge, were all "bubbling and stewing in the darkness of a fanatical spirit."³ I can find no adequate reason for his making such a statement and I am forced to conclude that it is perhaps the result of Muggeridge's own fanatical spirit which pervades almost every sentence of his somewhat vulgar style of criticism. Commenting on Butler's evolutionary views, Muggeridge remarked: "Buffonism, Lamarckism, Butlerism - however passionately he might uphold them, however venomously denounce the Anti-Lamarck or Anti-Butler - Darwin - it was somehow unconvincing. He blew and blew, and the dry bones did not live."⁴ But there is every reason to believe that modern criticism has changed in its hostile attitude towards Butler, although the anti-Victorianism developed in the early twentieth century had already, in part, ensured a better press for Butler than many of his contemporaries.

1. Malcolm Muggeridge, The Earnest Atheist: A Study of Samuel Butler, (London: Eyre & Spottiswood, 1936)

2. Ibid., "Introduction", P.vii.

3. Ibid., P.202.

4. Ibid., P.203.

Our interest in the study of Butler emerges from the fact that the writer represents an individualistic attitude which seemed to be imbued with logic and a sense of sarcasm in pointing out defects not only in Christian doctrines, but also in the scientific theories of evolution. Butler's controversy with Darwin, his opposition to Darwinism, particularly "natural selection", his anti-Victorian attitude towards traditionalism in general, and the re-estimation of his thought by the twentieth century critics, in particular, Bernard Shaw, all entitle him at least in my opinion, to a place among the scientific naturalists, the study of whom constitute my thesis. Butler's study, moreover, reveals how a man of letters viewed and received evolutionary thought.

Recently speaking of Samuel Butler's scientific interests, Frank Miller Turner points out that Butler "moved to inculcate himself with the leaders of scientific naturalism,"¹ for he thought that it was possible for him to attain a position among the scientists similar to that of some free thinkers, such as Leslie Stephen and W.K. Clifford, who, though unqualified, directed their criticism against religion and traditional morality. "Neither Leslie Stephen nor W.K. Clifford," says Turner, "had been trained to write their criticism of religion. Nor had professional scientists, such as Huxley and Tyndall, been educated to compose philosophical essays."² In fact, Butler was a philosophical writer who began his career by attacking Christianity and taking sides with the contemporary theories of evolution. But it was not until the late 1870's that he recognized that scientific naturalists themselves, particularly Darwin, were, more or less, as hypocritical and dishonest as any of the

1. F.M. Turner, Between Science and Religion, op. cit., P.172.

2. Ibid., P.172.

professional clergy. Turner attributes this attitude to Butler's failure to attain recognition from the scientists, who received his theory of Life and Habit with indifference and contempt.

Butler's anti-religious writing began in his rejecting the idea of Resurrection, one of the most fundamental doctrines of Christianity. Turner states that Butler, after an examination of the resurrection story in the Bible, arrived at the conclusion that: "Jesus not only had never risen from the dead, but also had never even died. He had swooned on the cross, had been removed by his friends, had recovered his health, and then had returned to his disciples,"¹ an attitude which is very similar to that of Huxley. His views were presented in two works, anonymously published: The Evidence for the Resurrection of Jesus Christ, as given by the Four Evangelists, Critically Examined (1865) and The Fair Haven (1873). The latter work was "a total failure", as Turner puts it, simply because Butler's satire was so ambiguous that it confused not only the religious reader but also the free thinker. H.F. Jones' Butler: A Memoir indicates even an earlier date for Butler's breaking faith with Christian doctrine, by recording that in 1862 Butler said: "For the present I renounce Christianity altogether."² Turner ascribes this state of mind to Butler's reading of Strauss, a suggestion for which he offers no evidence.

Butler's novel, Erewhon (1872), realized some success which was, given his reputation, probably due to its anonymous publication as well as its ironic criticism of both the clergy and the advocates of the mechanical interpretation of life. In this book three important institutions, the church, the university, and the machine, were satirized by Butler.

1. Ibid., P.170.

2. Ibid., P. 170.

Butler's attack on religion appears in the chapter entitled "The Musical Banks", the title itself plainly indicates derision. Holy places are portrayed as business offices where mercantile transactions take place. These "banks" have their own currency; although the dealers in this toy-like money are aware of its non-commercial value, they stress, along with those who have coined them, that real currency is "dross", and trifling when compared to it. When the protagonist once visits one of these "banks", he finds that the number of the cashiers and managers far exceeds that of the clients, something which suggests, of course, that the bank is not doing well. In order to show that their currency has no value, even among the clergy themselves, Butler presents an amusing scene in which a clergyman rebukes the protagonist for attempting to observe the inner parts of the institution. The protagonist narrates:

I cannot describe all that took place in these inner precincts, for a sinister-looking person in black gown came and made unpleasant gestures at me for peeping. I happened to have in my pocket one of the Musical Bank pieces, which had been given me by Mrs. Nosnibor, so I tried to tip him with it, but having seen what it was, he became so angry that I had to give him a piece of the other kind of money to pacify him. When I had done this he became civil directly.

The picture of the false currency given here may well remind us of the false indulgences which the mediaeval clergy were prone to sell.

The innovations and the appearance of the churches in England were also targets for Butler's attacks. History informed us that during the Victorian age church authorities gave much care to the establishment of new churches and to the restoration of older ones. In his analysis of Butler's works, Gilbert Cannon referred to the prosperity of the clergy and their interests in appearances by stating that: "King Leopold of the Belgiums had warned Queen Victoria, that appearances only were regarded, while the reality was "a matter of the most perfect indifference."²

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1. Samuel Butler, Erewhon (Penguin Books, 1974) edited with an "Introduction" by Peter Hudford, P.140.
 2. Gilbert Cannon, Samuel Butler: A Critical Study (1915), P.29.

Butler was aware of some churchmen's interests in decorations, appearances, and in the perpetuation of their own luxurious circumstances. Thus, Butler, putting his own words into the mouth of the protagonist, relates that the churchmen:

... had put fresh stained glass windows into all the banks in the country, and repaired the buildings, and enlarged the organs; the presidents moreover, had taken to riding in omni-buses and talking nicely to people in the streets, and to remembering the ages of their children, and giving them things, when they were naughty, so that all would henceforth go smoothly.

The notion of the mechanical interpretation of life is ironically commented upon when in Erewhon Butler compares man with the machines. Butler applies the principles of struggle for existence and the survival of the fittest to the mechanical growth in both worlds of plants and animals, including man. He states that the machines are devices which have been made by man for a certain purpose, or as he metaphorically considers them as external limbs which are submitted to man's will. Machines, like other species, the narrator says, are descended from one common ancestor; they are divided into genera, species, varieties, and even some of them possess rudimentary organs. It is clear how Butler, in his treatment of the machines, exploits the biological terminology current at the time, even going as far as to endow his machines with life and consciousness, and to regard human limbs and organs as having been made by man for his own convenience. This Lamarckian view of man manufacturing his organs is the subject of a two-fold analysis based on the mechanism of habit and the theory of hereditary memory. The former provides the necessary elements for inheritance, and the latter supplies the means of recalling and restoring the experiences of past generations, a view which

1. Samuel Butler, Erewhon, op. cit., pp. 142 - 3.

is applied to both individual and collective memory. These two ideas have been developed into theories manifesting themselves in the form of two books: Life and Habit (1878) and Unconscious Memory (1880).

In fact, Butler wrote four books and several articles on scientific issues in an attempt to offer solutions for the most complicated problems of the theory of evolution, particularly the concept of heredity and the fortuitous appearance of variations which constitute the backbone of Darwinism.

In Life and Habit,¹ Butler offered an alternative version of evolution founded on the function of mind in storing the experiences and the instincts of the ancestors, knowledge of this accumulated experience then being inherited by the offspring. It is the business of memory to preserve the distant past actions which reappear in the present generations. Butler's theory also teaches that the habits of the ancestors become instinctive in the offspring within a prolonged period of time. Instincts themselves which had once been conscious actions have become unconscious procedure, or states of mind. Man is, Butler explained, most conscious of his habit of speech and his artistic and scientific habits, but he is less conscious of processes such as eating, seeing, and hearing. Man has no control over the actions of digestion and circulation because they go back to the very early habits of the ancestors; and when man becomes unconscious of his habits, these habits often turn into instincts.² In support of his views Butler argued that "a baby of a day old" can see, suck, digest, breathe, and hear, in complicated actions which dwarf the most sophisticated scientific operation.³

1. Samuel Butler, Life and Habit (London: Jonathan Cape, 1924). This book was first published in 1878, though the author asserted that it had appeared in 1877 but for commercial reasons the first edition bore the date 1878 (Unconscious Memory, P.26).

2. Ibid., P.51.

3. Ibid., P.54.

Butler refuted the idea that instincts were innate properties claiming in the chapter entitled "Instinct as Inherited Memory" that instincts had originally been habits or experiences so repeated over a long period that they were transmitted to later generations.

In tracing the development of Butler's theory, one finds that his ideas first appeared in an article entitled "Dialogue" published in the Press, a Christchurch (New Zealand) newspaper, in 1862. His second article "Darwin Among Machines" appeared in the same newspaper in 1863. This and "Lucubratio Embratio" (1865) formed "The Book of Machines" in Erewhon (Chapters:23, 24 & 25). In a letter replying to an anonymous rejoinder to the "Dialogue", Butler stated that The Origin of Species was "Nothing new, but a réchauffé of the old story that his namesake Dr. Darwin, served up at the end of the last century."¹ This statement clearly indicates, at an early stage, Butler's attitude towards Darwinism as well as the lack of originality he finds in Darwin's achievement.

Butler's opposition to Darwinism developed and became the subject matter of his first novel, Erewhon. In this book Butler presents his views on consciousness and unconsciousness in plants and lower animals. He argues, for example, that some plants eat insects by means of their petals, and that a potato in a dark place "knows" how to realize its needs. Consequently he questions: "What is consciousness if this is not consciousness?"² However, the argument for the existence of intelligence in plants and animals constitutes one of the main themes of Erewhon, though Butler's exposition is very ironic in nature.

In the sections which Butler added to Erewhon in the 1901 edition, he incorporated his latest views on heredity and memory. He

1. Basil Willey, Darwin and Butler: Two Versions of Evolution (London: Chatto & Windus, 1960), P.65.
 2. S. Butler, Erewhon, op. cit., P.201.

illustrated, for example, the idea of the continuity of personality in the old and new generation by saying: "The rose-seed did what it now does in the persons of its ancestors - to whom it has been so linked as to be able to remember what those ancestors did when they were placed as the rose-seed now is."¹

Butler's concentration on the significance of mind in man's structure, which was initially neglected by Darwin, afforded him a beach-head within the theory of natural selection, the theory to which he had devoted much criticism over a long period of time.

No doubt, Butler's theory of memory could not function without reference to the mechanical notion of heredity, a theme on which he placed much emphasis in his biological writings and in his novels. His main idea of heredity lies in the fact that the ancestral tendencies control the offsprings' mental faculties and behaviour. These tendencies are divided into conscious and unconscious actions, and the latter are the overruling ones.

With regard to the theory contained in Life and Habit, it must have been a great shock to Butler to hear from Francis Darwin² that the theory was already explored by Ewald Hering, a distinguished professor of philosophy at Vienna, in 1870, and that it was also referred to by E. Ray Lankester (1814 - 1874) in an article published in Nature.³ In his book entitled Unconscious Memory (1880), Butler disclosed how his theory of habit, or memory, came into being. He also dissociated himself from the doctrine of the fortuitous evolution of organisms expounded by Darwin.

1. Ibid., P.239. In this edition, two chapters on the "Rights of Animals" and the "Rights of Vegetables" were added and fit well into the body of the satirical work.

2. Samuel Butler, Unconscious Memory (1910), P.xiii.

3. Ibid., P.20.

In this book he referred to his own conclusions which appeared in Life and Habit, by stating that they were completely identical with those of Hering, though he stressed that they were independently achieved. In a letter to the Athenaeum in which a review of Life and Habit had appeared, Butler modestly acknowledged Hering's priority. He, later, devoted a chapter in Unconscious Memory to the introduction of Hering's lecture, and a translation of the lecture itself was given in the following chapter.

Probably Butler's theory of memory is to be identified with the process of memorization in computers, particularly the idea of storing information derived from previous calculations or experiences.

Butler did not offer a definition of the terms "memory" and "heredity".¹ Moreover, he confessed that his approach was "metaphysical", while Hering's was "physical", for Hering connected memory with the vibration of nerve fibres. It is worth citing, perhaps, Butler's own comments on these methods:

Professor Hering reaches his conclusion by physical methods, while I reached mine, as I am told, by metaphysical. I never yet could understand what "metaphysics" and "metaphysical" mean; but I should have said I reached it by the exercise of a little commonsense while regarding certain facts which are open to every one. There is, however, so far as I can see, no difference in the conclusion come to.²

In order to refute his critics who often accused him of falling into the same trap as the German scholar, Von Hartmann, Butler gave an English translation of two chapters from Hartmann's book entitled, Philosophy of the Unconscious showing the great difference between Hartmann's theory and that of Hering, and implicitly his own. This method of refutation was typically Butlerian; by offering a translation of the subject in

1. Butler pointed out that: "Professor Hering, for example, goes into the question of what memory is, and this I did not venture to do. I confined myself to saying that whatever memory was, heredity was also." Ibid., P.54. He also reiterated the idea of accordance between memory and heredity in P.62 of the same reference.

2. Ibid., pp.57 - 8.

question and by appealing to commonsensical judgement of the reader, he was able to confront the overpowering authority of the scientists, particularly Darwin's. Against Darwin's claim of originality concerning the descent theory, Butler presented a bird's eye view of the evolutionary theory before Darwin by translating long passages from the works of the French scientists, Buffon and Lamarck. These translations appeared in his book entitled Evolution, Old and New which was published in May 1879. This work not only contained quotations from Buffon and Lamarck, but also quotations from Erasmus Darwin (1731 - 1802), writer of Zoonomia (1796), whose contribution to the theory of evolution, was, Butler said, deliberately ignored by his grandson. Some critics noticed that Darwin was unfortunate in introducing Ernst Krause's work¹ on his own grandfather in which a modified translation of Krause's article on Erasmus Darwin which had appeared in the German periodical Kosmos in February 1879 was included. The work contained certain passages which were implicitly directed against Butler's theory of inherited habits and his view of Erasmus Darwin. It was impossible for the satirist not to notice this indirect attack on his theory. His subsequent inquiries about the matter revealed to him Darwin's deceptive co-operation with the German scholar, an attitude which, eventually, led to Butler's clash with Darwin.

In Chapter IV of Unconscious Memory, Butler dealt with Darwin's attitude towards his own book, Evolution, Old and New by demonstrating the great scientist's prejudice and unfaithfulness in using spurious matter in the translation of Ernst Krause's article on Erasmus Darwin, which had appeared a few months before Butler's own work. Butler, in this chapter, threw light on the interpolation contained in the translation

1. Erasmus Darwin, by Ernst Krause, translated from the German by W.S. Dallas, with a preliminary notice by Charles Darwin, was published in November, 1879. H.F. Jones, Charles Darwin and Samuel Butler: A Step towards Reconciliation (London: A.C. Fifield, 1911), P.9.

of the article, and related the story of his clash with Darwin. He accurately revealed the interpolations and emphasised those which he considered to be an indirect attack on his theories, and confidently stressed the dishonesty of the scientist who presented, in his reply to Butler's inquiry, that Krause modified his article of Kosmos and that modification was "so common a practice that it never occurred" to Darwin to refer to it in his preliminary statements to the article. Noticing an element of cunning in Darwin's words, Butler addressed a letter to the Athenaeum¹ disclosing Darwin's apparently deceptive manner.

W. Irvine related the story of the quarrel between Darwin and Butler, but he himself tried to find justifications for Darwin's actions by pointing out that "in his preface, Darwin stated that Krause had revised his articles, but the statement had accidentally been deleted from the proofs."² This statement, of course, flatly contradicts what Darwin had said in his letter to Samuel Butler regretting his failure to mention the modification of the article. Irvine does not reveal how and why "the statement had accidentally been deleted from the proofs", but he does say in defence of Darwin that "very few paid any attention to him (Butler) in any case."³ Butler's letter which met with Darwin's silence, a result of consultation with relatives and colleagues, was probably the incident which did the most harm to Darwin's reputation during his lifetime and led to Butler becoming the most obstinate opponent of Darwinian ideas. From then on Butler spared no effort in pointing out defects in the scientist's work.

It seems that the power of memory for Butler played the same role as natural selection did for Darwin, for almost all the problems

1. On pages 11 - 19 of A Step Towards Reconciliation, op. cit., Henry Festing Jones offered the whole correspondence concerned with the problem.
 2. William Irvine, Ape, Angels, and Victorians, op. cit., P.224.
 3. Ibid., P.224.

about life-issues were apparently solved within the framework of their general theories. Butler's argument that the fact that people believed in a personal God without looking for demonstration might reveal a justification for his theory of memory simply because the highest truth, or belief itself was undemonstrable. Nevertheless, Butler was a vitalist in terms of the organic world, and a monist in terms of the universe in general. He found no essential difference between organic and inorganic worlds, a view which might reveal Butler's unitarian and materialistic tendencies.¹

In his conclusion to Unconscious Memory, Butler wrote that "We should endeavour to see the so-called inorganic as living in respect of the qualities it has in common with the organic, rather than the organic as non-living in respect of the qualities it has in common with the inorganic."² He referred to the scientist's debate on spontaneous generation and concluded that their experiments had revealed nothing except their preference for the hypothesis that organic beings must have been generated from inorganic matter at certain place and time. This statement did not satisfy Butler who suggested that: "The proper inference is, that there is a low kind of livingness in every atom of matter. Life eternal is as inevitable a conclusion as matter eternal."³ These words testify, of course, to Butler's belief in "matter", while his belief in 'force' or vitality manifests itself in the motion, or vibration, of matter, a view adopted by Ewald Hering. "Whenever there is vibration or motion," declared Butler, "there is life and memory."⁴ His doctrine of immortality differed from that of the traditionalist, for although he

1. S. Butler, Unconscious Memory, op. cit. (2nd edition, 1910), P.15.

2. Ibid., P.177.

3. Ibid., P.178.

4. Ibid., P.178.

held that death was not a complete loss, he saw any subsequent metamorphosis as occupying within a materialist framework. He expressed his monistic doctrine in the following words: "Strictly speaking, there is only one thing and one action. The universe, or God, and the action of the universe as a whole."¹

It seems that Butler's doctrine of vitalism was not as similar as that of Büchner's materialism, for neither denied the existence of a power, motion or otherwise, embodied in matter but apparently non-material in nature. Butler, in God the Known and God the Unknown offered two concepts of deity, known God was a natural conception, different from that of the Pantheistic God, which realised himself in the organism, while the unknown God was the phenomenon of life or the universe itself. The Pantheistic God was manifest in natural phenomena, while Butler's God was Man himself. Apart from denying the Divine personality of Jesus Christ, Butler disbelieved both the God of the theist and the God of the orthodox believer.

Butler held that Darwin failed to explain the causes of variations. "Natural selection", Butler stated, "cannot create the smallest variations unless it acts through perception of its mode of operation, recognized inarticulately, but nonetheless clearly, by the creature varying. "Natural selection" operates on what it finds, and not on what it has made."² Variations, in Butler's opinion, originated in the sense of need present in the organic being undergoing the process of adaptation to its new environment. This Lamarckian view on the origin of variations is implied throughout the whole chapter assigned to the comparison of the two versions of evolution; Lamarckism and Darwinism. Neverthe-

1. Ibid., P.181.

2. Samuel Butler, Life and Habit, op. cit., P.265.

less, Butler found that even the two versions taken together were not comprehensive or convincing unless they were supplemented by his own version of evolution which was based on the theory of habit and memory.¹ The fact that Butler accepted Lamarck's view of adaptation and admitted St. George Mivart's objections to the appearance of variations by chance, led his theory of evolution to become both teleological and progressive.

Butler incorporated his views on contemporary naturalism in his last book, Luck, or Cunning? which was first published in 1887. His continued opposition to Darwinism was the main theme of the work. The book was dedicated to the late Alfred Tylor who had suggested the idea of writing it. On the dedication page Butler pointed out that Tylor's experiments in 1883-4 "established that plants also are endowed with intelligential and volitional faculties." In the preface he said that had Tylor lived to see it, he "would have been well pleased at an attempt to connect him with a book so polemical as the present."²

In his introductory chapter he stressed two points which he had already mentioned in his previous books the question between heredity and memory and the notion of design in organic evolution. He reiterated his views that the characteristics of mind and body were inherited by memory, and that instincts were not excluded. He referred to Darwin's theory of random descent and its incompatibility with Paley's theory of design. He recognized that the issue of rudimentary organs, which was put forward by the Darwinians, exploited a weakness in Paley's approach. Nevertheless, Butler considered that Darwin's view of accumulation itself could not be sustained without reference to a principle of design which might be

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1. Butler wrote: "Given the motive power which Lamarck suggested, and Mr. Darwin's mechanism would appear (with the help of memory, as bearing upon reproduction, of continued personality, and hence of inherited habit, and of the vanishing tendency of consciousness) to work with perfect ease." - *Ibid.*, P.261.
 2. Samuel Butler, Luck, or Cunning, as the Main Means of Organic Modification? 2nd ed. (London: A.C. Fified, 1920), P.8.

justly called Butlerian. By ignoring the connection between the process of accumulation of variations and mind, said Butler, Darwin removed the brains from the universe.¹ He attacked the Darwinian biologists who popularized the theory of random modification, while he appreciated Mivart's attempt at compromise between teleology and chance, though he referred to Mivart's failure as working out the problem of rudimentary organs, a question which he himself set out to resolve. Commenting on Mivart's book, the Genesis of Species (1875), Butler pointed out that:

Nevertheless, there can be no doubt that the "Genesis of Species" gave natural selection what will prove sooner or later to be its death-blow, in spite of the persistence with which many still declare that it has received no hurt, and the sixth edition of the "Origin of Species",² published in the following year, bore abundant traces of the fray."

Butler asserted that his reading of the Genesis of Species had made him aware of the great difference between teleological Lamarckism, which he adopted, and the random Darwinism which he refuted. He devoted two chapters of his work to deal with Herbert Spencer's arguments concerning heredity and memory which appeared in the Athenaeum (1884, April 5th). He stated that Spencer's treatment revealed nothing new and exhibited an ambiguity which allowed Butler to conclude that the idea of instinct as inherited memory had not occurred to the philosopher when he wrote his Principles of Psychology (1855) and that he became aware of it and recognized its validity only after the publication of Hering's address and Life and Habit.³

The main subject of Luck, or Cunning? is an argument in favour of design implied in the title-word "Cunning" as opposed to the word "luck" which represents random modification. But the title may reveal a kind of pun that Darwin's high reputation itself was a result of "luck",

1. To this statement, W. Irvine replied that "... In putting them back in, Butler emptied out nearly all the gray matter." - Ape, Angels, and Victorians, op. cit., P.224.

2. S. Butler, Luck, or Cunning? op. cit., P.19.

3. Ibid., P.44.

while his "cunning" was clear in concealing his plagiarism. Throughout his argument Butler dealt with the principle of natural selection which he refuted by exploiting gaps in Darwin's utterances, concepts, arguments, and inferences. He found that Darwin's natural selection could be conceived as "the presentation of Lucky Races," substituting 'lucky' for the term 'favoured' which appeared on the title-page of The Origin of Species. Butler considered the title itself to be ambiguous, and Darwin's claim to be the founder of the descent theory was demonstrably false. Butler felt that a more accurate title would have been 'The origin of variations' or 'the principle of natural selection', as it was intended to be called according to the records of the "Proceedings of the Linnean Society for 1858."¹ Perhaps the choice of a more sensational title appeared to Butler to be yet another example of Darwin's cunning. Butler traced the term 'natural selection' itself back to Erasmus and Patrick Matthew. Both had made use of the idea and the latter had even coined the phrase.² Moreover, he referred to a passage in The Origin of Species in which Darwin's approach seemed to be closer to "design" than "chance", as revealed in the comparison of the eye and the telescope.³ Even the word "accidental", which preceded 'variations' for nearly ten years in the earliest editions of The Origin of Species, disappeared in the edition of 1869 and after. Butler, on page 94 of Luck, or Cunning?, offered a chronological demonstration of the alterations the passage including "accidental variations" underwent only to show "the hesitating feeble gait of one who fears a pitfall at every step, so easily recognisable in the "numerous, successive, slight alterations" in the foregoing passage, may be traced in many another page of the Origin of Species by those who will be at the trouble of comparing the several editions."⁴ He also rightly pointed out that neither Darwin nor his

1. Ibid., P.83.

2. Ibid., P.86.

3. Ibid., P.92; quoted from The Origin, 1st ed. pp. 188 - 189.

4. Ibid., P.94.

followers, excluded the significance of the Lamarckian principle of use and disuse.

In this polemical work, Butler spared no effort in making as much as he could of his sense of injury and satire provided him with the means to revenge himself on the scientist and his followers. There is hardly a conclusion to an argument in the book that does not involve a vehement attack on Darwin and his discovery of natural selection. Sometimes Butler presents Darwin as "a notorious burglar"¹ who plundered the works of his predecessors, such as Buffon, Erasmus Darwin, and Lamarck, and sometimes he presents him as a hesitant writer whose arguments and inferences seemed to him sunk in a "tangle of confusion and contradiction."² Many times he referred to Herbert Spencer's argument, which appeared in the Nineteenth Century (1886), which he described as the "most crushing argument"³ against the accidental variations accumulated by agency of natural selection.

Butler rejected the theory of protoplasm as the basis of life, a view which had been prevalent until 1879. "For in the autumn of 1879 the boom collapsed," Butler wrote, "and thenceforth the leading reviews and magazines have known protoplasm no more."⁴ Yet, he asserted that there were hardly any biologists or psychologists in the last twenty-five years who had believed in the existence of "the soul as something apart from the substratum in which both feeling and action must be held to inhere."⁵ Butler ironically remarked that: "Protoplasm was God Almighty, who, of all the forms open to Him, had chosen this singularly unattractive one as the channel through which to make Himself manifest in the flesh by taking our nature upon Him, and animating us with His own spirit."⁶ Scientists,

1. Ibid., P.89.

2. Ibid., P.95.

3. Ibid., P.130.

4. Ibid., P.132.

5. Ibid., P.133.

6. Ibid., P.132.

Butler said, began to reconsider the notion of the mechanical development of organisms, a view that he had himself included in his novel Erewhon sometime before. It was this theory of mechanism in living and non-living bodies that led Butler to believe in the vital force inherent in matter. While the biologists "reduced the body to mechanism" Butler reversed the order and elevated "mechanism to the body."¹

In 1914, Robert F. Rattray published an article in Mind, entitled "The philosophy of Samuel Butler"² in which he called attention to Butler's merits and the significance of his philosophical writings. He described him as "a vitalist, thorough-going."³ He eloquently presented Butler's theory of conscious and unconscious actions within the framework of memory. He expounded Butler's view, for example, on embryonic development by saying: "So the "Law of Recapitulation" tells us that every human embryo has gills for a time, a tail for a time, and hair on its face for a time - going through in epitome the history of its evolution as an animal roughly."⁴ This law, according to Butler, was related to a memory of the ancestors and it extended beyond the limits of the womb to the second year of childhood during which time the baby becomes conscious. Rattray asserted that the notion of "ancestral memories" was accepted not only by literary men, such as R.L. Stevenson, but also by distinguished psychologists such as President Stanley Hall and Professor Freud.⁵ He also found that Hering's "Vibration theory", which was acknowledged by Butler, could constitute the physical basis of Butler's theory of memory. Commenting on Butler's views, Rattray pointed out that: "Such ideas may sound mad but they are true and have very beneficent results, I believe."⁶

1. Ibid., P.134.

2. Robert F. Rattray, "The Philosophy of Samuel Butler", Mind, vol.xxiii (1914). pp. 370 - 385.

3. Ibid., P.370.

4. Ibid., P.375.

5. Ibid., P.376.

6. Ibid., P.379.

He also declared that Professor Ward in the Gifford lectures adopted both Haring's and Butler's theories. Unfortunately, Rattray did not speak of the advantages of Butler's views apart from commenting that he believed with Butler in a living universe of which he is part, and whose soul is God.

In his book, Evolution and Poetic Belief,¹ George Roppen spoke of "Butler's More Living Faith", in a chapter assigned to the study of the writer. Commenting on Butler's book, Life and Habit and referring to E.M. Joad's respectable analysis of it, Roppen pointed out that: "After reading Life and Habit, however, it is difficult not to feel that Butler's evolutionary belief has a great deal of positive, original value, and suggests evocative answers to problems which are still with us."² He confined himself in this discussion to Butler's early writings. His attempted justification for this approach appears open to criticism, for he saw the later works as "repetition of ideas" permeated with "a personal charge" against Darwin.³

Roppen disliked Butler's version of evolution based on the principles of "faith and desire". These principles seemed to him "barren soil for prophecy and of value."⁴ though he admitted that Butler's theorizing had had some influence on the writers of the following generation. "It is for this achievement", said Roppen, "that Butler's disciple Bernard Shaw salutes him, and remembers him as 'the prophet who tried to head us back when we were gaily dancing to our damnation across the rainbow bridge which Darwinism had thrown over the gulf which separates life and hope from death and despair.'"⁵

In his interesting work entitled Darwin and Butler, Two Versions of Evolution, Basil Willey spoke of Darwin's attitude towards

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1. George Roppen, Evolution and Poetic Belief (Oxford: Basil Blackwell, Oslo U.P., 1956).
 2. Ibid., P.318.
 3. Ibid., pp. 318 - 319.
 4. Ibid., P.342.
 5. Quoted in Roppen, Ibid., P.343.

religious doctrines. He cited Darwin's letter to Asa Gray, 1860, in which Darwin confirmed that he "had no intention to write atheistically."¹ Willey referred to Darwin's hesitant standpoint concerning the issue of chance or design. The letter cited by Willey reveals to us Darwin's agnostic state of mind, particularly when he ends his letter by saying: "I feel most deeply that the whole subject is too profound for the human intellect."² Darwin reiterated this view in a letter to a Dutch investigator that "the whole subject is beyond the scope of man's intellect."³ Willey also cited a letter written to a German student in 1879 in which Darwin plainly rejected belief in Revelation by remarking that: "Science has nothing to do with Christ, except in so far as the habit of scientific research makes a man cautious in admitting evidence. For myself, I do not believe that there ever has been any revelation. As for a future life, every man must judge for himself between conflicting vague probabilities."⁴ Darwin's letter to J. Fordyce in 1879 also plainly revealed his agnostic attitude for as he pointed out: "I think that generally (and more and more as I grow older), but not always that an agnostic would be the more correct description of my state of mind."⁵ Darwin's statements about religious beliefs, may reveal one fact that the scientist began as a sceptic and ended an agnostic.

In the American Scholar (1961), George Gaylord Simpson published an article on "Lamarck, Darwin and Butler, Three Approaches to Evolution", in which he describes Butler's voice as "a shrill and petulant cry that has not lost the power both to entertain and to annoy."⁶ But he is also aware that Butler was a lifelong source of trouble for the

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1. Basil Willey, Darwin and Butler: Two Versions of Evolution (London: Chatto & Windus, 1960), P.25.
 2. Ibid., P.26. The letter appears in Life and Letters of Charles Darwin, op. cit., vol.II, P.312.
 3. Ibid., P.27.
 4. Ibid., P.27.
 5. Ibid., P.28.
 6. G.G. Simpson, "Lamarck, Darwin and Butler, Three Approaches to Evolution", American Scholar, vol.50 (1961), P.238.

sensitive Darwin. Simpson's words that: "Unfortunately (as we now see it) he (Darwin) weakened his stand in successive revisions of The Origin",¹ undoubtedly reflect Butler's influence, as seen in the case of Luck, or Cunning? on the mind of the recent author. Brian Coleman, in his substantial essay on "Samuel Butler, Darwin and Darwinism" confirms Butler's influence and position by citing Jacque Barzun's words with approbation: "Butler deserved credit in his efforts to collate the Origin. He may have been the first to have done so, and he may even deserve, in some degree, being called "the first careful historian of the evolutionary movement."²

It has become customary, and not only in scientific circles, to offer a conclusion for every part of a work, and since one has no wish to offend against tradition, one must acknowledge that the impact of scientific naturalism was felt in many spheres, arousing countless controversies over the most complicated issues of existence, such as the questions of the origin of earth, man's nature and faculties, and his relation to the universe. It seems to me that the scientific naturalists realized considerable success in their attempts to establish a new philosophy of life and that the arguments raised against them by the traditionalists have both failed to convince and to impede their process.

Religion and science were, and still are, old enemies, necessarily antagonistic as a concomitant of their differing world views. The perplexity of the Victorian philosophers resulted in the creation of three broad groups: those who adhered to orthodoxy, those who embraced the new doctrine of naturalism, and those who vainly attempted to compromise. But there might also be a fourth group, Agnostics, who believed in nothing, or at least were sure of nothing, admitting that man's mental faculties failed to grasp the essential mystery of life. Unsatisfactory interpretat-

1. Ibid., P.244.

2. Brian Coleman, "Samuel Butler, Darwin and Darwinism", J. Soc. Biblphy. nat. Hist. (1974) 7 (1): (pp. 93 - 105), P.98.

ions, scientific or otherwise, could tempt an individualist, like Samuel Butler, to attack religion, mock science, but appreciate common-sense.

Traditionalists, especially theologians, were prepared to include the results of scientific investigations within their system simply because they, perhaps rightly, concluded that science could only describe phenomena and not explain the mysteries of life. The facts were always neutral, it was only when the scientists attempted to philosophise their conclusions that the controversy became violent and polemical.

I believe that the working out and the resolution of controversy can add to the store of that abstract concept knowledge. It may not be completely true to claim that the dispute between Religion and Scientific Naturalism can be seen in Hegelian terms as leading to eventual synthesis, but there can be no doubt that the opposition of a religion no longer sufficiently authoritative to quell investigation, may well have contributed to the development, if not the origin of species.

CHAPTER THREEA VICTORIAN DEBATE ON THE ORIGINS OF MORALITY

For the purpose of discussing ethical theory in the second half of the nineteenth century, one may distinguish three groupings. First of all, there were the theologians who devoted themselves to defending the moral teachings of Christianity as laws dictated by God who created nature and all that it contains for the benefit of human beings. Secondly, there were those who believed in Nature. They included pantheists, scientific naturalists, and positivists between whom there were, however, considerable differences of opinion. The third group attempted to mediate between the supernaturalists and naturalists. Their system of morality contained religious images and symbols with a scientific appreciation of the natural order. This group believed in two approaches to the problem: they tried to be both religious and scientific, and consequently believed in two alternative bases for morality which were not consistent with each other; and this is why most writers who took part in the nineteenth century debate about morality ignored them. This uncertain position of 'incomplete religion or incomplete atheism', made it difficult for W.H. Mallock to classify this particular group in his substantial article on ethical teachers in The Nineteenth Century review in 1877.¹

Nevertheless, one is justified in dividing those involved in the debate about ethics into these three groups, even if the writers of the third class have no clear ethical system of their own.

In the following analysis we shall be introduced to a number of distinguished men who attempted to base moral codes on new foundations. Charles Darwin, Herbert Spencer, and Thomas Huxley represent the evolutionary school of ethics. Henry Sidgwick expresses the utilitarian views of morality, and Frederic Harrison the Positivist attitude in

1. "Is Life Worth Living?", W.H. Mallock, The Nineteenth Century (Septemner, 1877), Vol.II, pp. 251 - 273.

England. Moralists, traditional or otherwise, appear, of course, as opponents or exponents of the new concepts of morality in so far as their views are concerned in the debate.

I. DARWIN'S VIEWS ON MORALITY

The reader of Victorian literature may recognize that one of the main objections to Darwin's theory of descent was based upon moral considerations, although Darwin's first book, The Origin, contained no mention of the origin of moral sense. With the publication of The Descent of Man (1871), however, Darwin put forward his views on the construction of moral sense and its development according to his theory. Before Darwin's attempt to establish moral faculties on scientific grounds the three main schools of ethics in England had been transcendentalism, intuitionism, and utilitarianism. Although all were in conflict with one another, to some degree, the main antagonism seemed to develop between the latter two. In the 1870's the debate on the question of morality had taken a new dimension and controversy began between the evolutionary ethics and the transcendental, on the one hand, and on the other, between the evolutionary and the Sidgwickian; Henry Sidgwick's system of ethics being a compromise between Benthamite ethics and intuitionism. E.E. Constance Jones asserted that Sidgwick's system, which was often called by Sidgwick itself as utilitarian, "might be described as Utilitarian on an intuitional basis."¹

Among all the differences, conjectured or real, that were held to exist between man and animal, the question of moral sense was accorded the highest priority by the Victorians. Indeed, it was to form the main argument of those who opposed the theory of the brutal origin of

1. Lectures on the Ethics of T.H. Green, Mr. Herbert Spencer, and J. Martineau, edited by E.E. Constance Jones, (U.S.A: Kraus Reprint Co., 1968), Preface, P.vi.

man. In order to associate man's sense of morality with that of lower animals according to the framework of his theory, Darwin enthusiastically and exclusively treated the issue from the viewpoint of natural history in his second enormous work, The Descent of Man.

His evolutionary system of ethics was based on the presumption that sympathy and social instincts were the source from which the animal world derived its conscience. These social instincts, Darwin claimed, provided the animal with a feeling which made possible its co-operation with other individuals of a species. This feeling, or sympathy, allowed both man and the animal to conceive the significance of the general good for their communities. The development of this sense, stated Darwin, was dependent upon mental reflections on the part of man, while its development in animals was related to images of happy or miserable impressions experienced by the animal. These impressions would be recalled by the animal as soon as similar actions reoccurred.

In order to support his view of social instincts, Darwin asserted that there were animals which performed social actions similar to those of man by rendering services to one another, such as defending themselves against any attack, in looking for a prey and sharing it. He also stressed that the individuals of the same species had sympathy for one another, although he denied, for example, that animals felt pity for the dead or the wounded; herds often expelled the wounded from their ranks for one reason or another. Darwin did not reject what some naturalists suggested that the herd usually did so, either by instinct or reason, in order not to be followed by enemies, but, on the contrary, he asserted the validity of this view by referring to Lubbock's account of the Fijians who used to bury their ill and aged parents alive.¹ It seems that Darwin did not completely deny the existence of a noble sympathy, or a

1. J. Lubbock, Prehistoric Times, op. cit., P.446.

kind of pity in some animals, for he referred to the case of a dog defending his master, or even licking a sick cat. Such instinctive actions were seen by Darwin as elements of moral sense in higher animals. In support of this, he referred with approbation to Agassiz's conviction that dogs possessed a kind of conscience which could be very similar to that possessed by man in terms of loyalty and faithfulness. Darwin also utilized Hooker's observations on the fidelity of elephants and Francis Galton's statement on cattle in Africa where a small number of oxen became leaders and the rest slaves or followers. In concluding, Darwin only partly ascribed the tendency of animals to live in communities to the law of natural selection, for he also recognized the role of acquired habits.¹

After discussing the idea of social instincts in animals, Darwin stated that man's moral sense was formed of a combination of instinctive sympathy and intellectual experience within a framework of social tendencies. He held that these tendencies, which appeared in man's loyalty to his community and his leader, were inherited from his early animal progenitors. Although Darwin acknowledged the significance of man's intellectual powers in issuing moral judgements, he found that man's "actions are in a higher degree determined by the expressed wishes and judgements of his fellow-men, and unfortunately very often by his own strong selfish desires."² Nevertheless, reason, sympathy, and self control freed man, said Darwin, from barbaric habits and inspired him to higher conduct in a civilized world.

Darwin refuted the distinction drawn between instinctive and deliberate action, a view held by some moralists who considered only deliberate actions as moral. He argued that it was difficult to draw a distinct line between the two, and further that impulsive actions were to

1. Charles Darwin, The Descent of Man, op. cit., P.105.

2. Ibid., pp. 109 - 110.

be considered as the more perfect, and described as innate since they were performed without effort or deliberation. He also rejected the notion that actions must be judged by reference to their motives, claiming that there were some examples of moral actions performed by savages which had nothing to do with any religious or humanistic motivation at all. He referred to the case of three Patagonian Indians who preferred to be killed rather than betray their companions. Darwin saw this behaviour as being motivated by social instincts, not a moral impulse derived from their religion. He supported his argument by citing both T. Huxley and Leslie Stephen who found no reason to distinguish between "material and formal morality", or instinctive and deliberate motives. But Darwin did distinguish between a moral being (man) and a non-moral being (animal), asserting that the conduct of a dog saving a child from drowning or a monkey rescuing its companion from danger could not be considered as moral, for "a moral being", said Darwin, "is one who is capable of comparing his past and future actions of motives, and of approving or disapproving of them."¹ He also added:

But in the case of man, who alone can with certainty be ranked as a moral being, actions of a certain class are called moral, whether performed deliberately, after a struggle with opposing motives, or impulsively through instinct, or from the effects of slow-gained habit.²

Although Darwin attributed moral sense solely to man possessed of the power to reflect on his past and future, he suggested that there must be a sense of remorse in lower animals similar to that in man. He speculated, for example, that a swallow which left its young, responding to its instinct of migration, might feel the agony of remorse as soon as it settled down in a warmer land if the picture of its suffering young was recalled to its mind. By "remorse" Darwin meant, "an overwhelming sense of repentance,"³ a feeling which was considered by some moralists, as

1. Ibid., P.111.

2. Ibid., pp. 111 - 112.

3. Ibid., P.114.

resulting from man's reverence or fear of Gods or spirits. This interpretation was rejected by Darwin who argued that the concept of repentance, or morality as a whole, differed from one community to another. An Australian savage, for example, preferred to kill a woman for a superstitious purpose, or to commit incest, rather than marry a woman carrying his own name.

Dealing with the difference in moral concepts, Darwin concentrated on the social virtues which were strictly regarded as beneficial to each tribe in primitive communities. He argued that what were considered as crimes of murder, robbery, or treachery among the individuals of one tribe would be considered as virtues if the actions were applied to the members of another. Infanticide, added Darwin, was thought to be for the good of the tribe.¹ Slavery, also, which had once been considered a natural occupation or phenomenon, was to become a crime in modern society.

Although love of truth was deeply rooted in human beings, lying could be forgiven if it was directed towards strangers. Noticing that lying was a common practice among the politicians of his own world, Darwin remarked: "... but to lie to your enemy has rarely been thought a sin, as the history of modern diplomacy too plainly shews,"² thus asserting that moral sense was mainly derived from social instincts manifesting themselves in man's conduct for the welfare of his society. Hatred, for example, was one of the persistent feelings, which emerged from these social instincts. It was a feeling, said Darwin, similar to that of a dog which always treated strangers with enmity. He declared that the phenomenon of hatred was innate in both the dog and the savage, for the latter would reproach himself if he did not revenge himself for a previous injury. Darwin suspected that the elimination of such a feeling could not

1. Infanticide of female children was common in the Pre-Islamic Arab tribes, and it was thought to be for the good of the family and the tribe as well.
 2. Charles Darwin, The Descent of Man, op. cit., P.118.

be accomplished without a great deal of improvement in man's cultivation, sympathy, and reason.

Darwin believed that social instincts were so powerful that they even produced a rude morality which had nothing to do with the welfare of the community; but, on the contrary, could seem to be opposed to human happiness in that it led to codes of morality being adopted which were far from enlightened or civilized. In order to support his view he spoke, for example, of the strange superstitions and eccentric customs of the Hindus, particularly those pertaining to their caste system.¹ In fact, there is nothing new in Darwin's view that "social instincts" formed the origin of moral sense in both man and the animal, for the terminology itself indicates that morality, to Darwin, possessed two facets, the instinctive and the social. But this duality has not solved the problem. Therefore, he added a third element in the form of mental faculty, simply to distinguish man from the lower animals, as most moralists did. "Nevertheless, the difference in mind between man and the higher animals, great as it is," stated Darwin, "certainly, is one of degree and not of kind."²

Referring to the sources from which Darwin derived his moral views, William Irvine, in Apes, Angels, and Victorians, remarked that:

"He (Darwin) follows (Adam) Smith in stressing the importance of sympathy, and Hume in emphasizing the nonrational basis of conduct. Yet he avoids the speculative subtleties of the Utilitarians, and particularly their tendency to turn moral consciousness into an Epicurean balance sheet of pains and pleasure - keeping as close as possible to the broad generalities of common sense on the one hand and the solid facts of animal behaviour on the other."³

Darwin's attitude towards the principle of the greatest happiness is expressed in his words that: "It is, however, more correct to speak of the latter principle as the standards, and not as the motive of conduct."⁴

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1. The horror of such superstitions and customs has been well portrayed in Fanny E. Farr Penny's interesting novel entitled Caste and Creed (1890) which is worth reading for both entertainment and enlightenment.
 2. Charles Darwin, The Descent of Man, op. cit., P.126.
 3. William Irvine, Apes, Angels, and Victorians, op. cit., P.195.
 4. C. Darwin, The Descent of Man, op. cit., P.120.

The notion of associating every moral action with a form of pleasure or pain was not uncautiously admitted, for Darwin illustrated that man sometimes acted instinctively without any direct reflection on the action as in the case of a man who would hardly think of any pleasure rushing to save a fellow during a fire. He asserted that moral sense was a deeper feeling in nature than that of pleasure and pain. It was implanted in man's social instincts which had been associated a long time ago with similar instincts in lower animals. Darwin preferred the term "general good" to "greatest happiness" by which he meant to confine the general good to the specific communities of man and the animal, because the social instincts in both developed in the same manner.

In order to support his biological view that social instincts were the motive and the origin of moral sense, Darwin cited Henry Sidgwick's words and also provided his own commentary:

"We find everywhere in consciousness extra-regarding impulse, directed towards something that it is not pleasure, that in many cases the impulse is so far incompatible with the self-regarding that the two do not easily co-exist in the same moment of consciousness." ¹ A dim feeling that our impulses do not by any means always arise from any contemporaneous of anticipated pleasure, has, I cannot but think, been one chief cause of the acceptance of the intuitive theory of morality, and of the rejection of the utilitarian or "Greatest happiness" theory. With respect to the latter theory, the standard and the motive of conduct have no doubt, ² often been confused, but they are really in some degree blended.

Perhaps this vague relation between impulse and pleasure was the cause of Sidgwick's attempt to compromise between the two systems of morality, intuitionism and utilitarianism, which appeared in The Methods of Ethics two years after his article in the Contemporary Review. Darwin cited Herbert Spencer's letter of 1863 to J.S. Mill in which the former attributed man's moral sense to experiences utilized by past generations and transmitted

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1. This passage appears in the 2nd edition of The Descent (1888) P.120. It was quoted from Sidgwick's "Essay on Pleasure and Desire", The Contemporary Review, (April, 1872), P.671.
 2. C. Darwin, The Descent of Man, op. cit., footnote n.42.

by inheritance to modern civilization.¹

Darwin concerned himself with moral values themselves and the means of their establishment, making the survival of the community and its welfare, the standard by which moral codes must be judged without any regard being paid to religion or tradition. Most evolutionary moralists excluded moral and social problems from the influence of religion. Advocates of religious morality, however, considered that the principles of right and wrong were absolute and eternal, and that man was gifted with an intuitive insight by means of which he recognized those eternal moral values. A writer in the Edinburgh Review (1871, P.217), commenting on Darwinian morality, declared that: "The sense of right and wrong, according to this view, is no definite quality, but merely the result of the working together of a series of accidents controlled by natural selection for the general good. We need hardly point out that if this doctrine were to become popular, the constitution of society would be destroyed, for if there be no objective right or wrong, why should we follow one instinct more than the other, excepting so far as it is of direct use to ourselves."²

Darwin's idea of the relativity of moral values in human societies was also applied to religious doctrines themselves which differed from one society to another. He asserted that the role of religions was significant in the process of survival of communities, and that religions themselves were influenced by the principle of natural selection. Thus, the moral progress of a society was associated with the survival of the

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1. Spencer wrote: "I believe that the experiences of utility organised and consolidated through all past generations of the human race, have been producing corresponding modifications, which by continued transmission and accumulation, have become in us certain faculties of moral intuition - certain emotion responding to right and wrong conduct, which have no apparent basis in the individual experiences of utility." - Quoted in *Ibid.*, P.123.
 2. Quoted in Elvar Ellegård, Darwin and the General Reader, *op. cit.*, P.323.

individual and the society within a framework of instinctive actions. Ellegård quoted the Guardian commentator who announced that: "The moral sense of conscience (is) most important to the true humanity of the individual and to the maintenance of society. If any theory tends to depose it from its spiritual throne... and makes it but an instinct differing from others only in the greater vividness and durability ... such a theory comes home to those who care little about abstract metaphysics, and is pregnant with results which will pass beyond the school or the lecture-room, to affect the great issues of practical life."¹

Ellegård held that the "implausibility of utilitarianism" in establishing man's moral sense and his religious tendencies on an empirical basis made the school of intuitionism, and eventually, the idealists theory of ethics, look for the origin of these senses in the constitution of the mind. But Darwin's explanation, to Ellegård, could achieve what the utilitarians failed to do. Ellegård defended Darwin's theory of morality against many critics who refused to accept that the feeling of remorse, for example, could have been the result of the process of natural selection by remarking that: "The argument was obviously not to the point, for the Darwinian theory did not assume that any conscious experience of utility was needed for the feeling to be naturally selected: what was necessary was that the feeling should in fact have survival value for the race. But such misunderstandings were common in relation to the natural selection theory."² He also referred to the attack directed against Darwin's concentration on behaviour - his insistence on what was called "material morality" as opposed to "formal morality" which depended on reason. Ellegård was aware that the majority of contemporary critics were reluctant to accept Darwin's views on man's mental and moral faculties.

1. Ibid., P.324. Quoted from the Guardian, 1871, P.1007.
 2. Ibid., P.327.

In 1871, The Westminster Review¹ offered a brief commentary on The Descent of Man, in which the reviewer announced that a detailed analysis of the work would appear later. The promised review appeared a year later expressing a regret for the delay but offering a substantial study of the complex issues the author involved in the work. The author recognized that Darwin's treatment of mental power was indecisive. Therefore, he described it as "vague, provisional, and contradictory," but he declared that this was not Darwin's fault but a result of "the backward state of psychology."² He plainly stated that Darwin's chapter on the mental powers in man and the animal "abounds in sagacious reasoning."³ In order to support his valuation, he quoted a long passage and commented that it was difficult for him to treat adequately such vast issues, particularly those of language and ethics. Yet, he rightly associated Darwin's view of language with the bow-wow theory, and his system of morality with social instincts asserting that "Mr. Darwin, contrary to what hasty thinkers might erroneously have anticipated, is no upholder of the "selfish" school of morals. With him "the moral sense is fundamentally identical with our social instincts; and in the case of the lower animals it would be absurd to speak of these instincts as having been developed from the selfishness, or for the happiness of the community."⁴ The reviewer must have been a naturalist himself, for he devoted most space to the classification of man's progenitors and the principle of sexual selection, the second part of the work, rather than to the chapter dealing with mind and morality.

Even William Irvine, an admirer and biographer of Darwin, recognized that "confusion and inconsistency" were a feature of the scientist's arguments on morality. In his own words, Irvine remarked

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1. "Contemporary Literature", Westminster Review (Jan. - April, 1871) pp. 551 - 554.
 2. "The Descent of Man", Westminster Review, Vol. 42 (1872), P.381.
 3. Ibid., P.382.
 4. Ibid., P.385.

that: "Darwin does not attempt any elaborate account of moral experience, nor is he entirely free from confusion and inconsistency."¹ The majority of critics, both old and recent, agree on the view that Darwin, more or less, failed to provide them with an original insight into moral and mental powers, as he had done when dealing with natural selection and the theory of descent with modification. In fact, the evolutionary moralists in general had found a sociological refuge in appealing to social interests in the construction of moral sense and rules. So long as the organism struggles to adapt its body to the external conditions of life, man, as a superior organism, must adapt his internal desires, though biologically reluctant, to the social welfare. One can see that Darwin's concept of morality was the result of achieving a balance between the biological laws controlling man, and the sociological principles then prevalent among the philosophers Comte, Mill, and Spencer. Mill's 'greatest happiness' as an ultimate end was developed by Darwin and Spencer as the 'general good'. The utilitarian ego, the centre of morality, became the evolutionist's socio-biological ego. Pleasure and pain as motives of moral conduct have changed into innate instincts, generating and dying with the organism itself. To the evolutionary moralist, biology, physiology, psychology, and sociology must settle the rules of right and wrong, not the metaphysical philosophies. Such conclusions did not satisfy Henry Sidgwick, one of the most distinguished moralists of the Victorian period.

II. HENRY SIDGWICK'S ETHICS

In his recently published work on Sidgwick's Ethics and Victorian Moral Philosophy (1977), J.B. Schneewind considers: Sidgwick's The Method of Ethics as "the most important product of nineteenth century

1. William Irvine, op. cit., P.195.

British Ethics, and the main key to a full understanding of it."¹ He states that Sidgwick aimed at reconciling between conflicting moral schools at a time when the debate over morality was the most important issue which preoccupied the minds of Victorian intellectuals. Describing Sidgwick's work, Schneewind remarks:

"The Methods is indeed so modern in tone and content, and so lucid in style, that it has not seemed to call for many historical or exegetical study."²

In order to analyse Sidgwick's moral system, Schneewind presents an overall view of the ethical theories of the nineteenth century, dividing the century into three periods: (1) from the 1780s to 1830, (2) from the 1830's to the 1870's, the period of conflict between Whewell and Mill, (3) and from 1873 onward. The third period is our main concern since it witnessed the conflict between Sidgwick and Spencer, between a utilitarian and an evolutionist, who both claimed to utilize scientific methods and conclusions in the construction of their secular systems of morality. He maintains that utilitarian ethics had realized success during the early period because they presented a Christian morality, but, later, its "secular versions displaced religious ones and utilitarianism came to be identified as opposed to the teachings of Christianity."³

Schneewind has divided his book into two parts, in the first part he traces Sidgwick's evolution as a moralist, revealing J.S. Mill's role in the development of utilitarian ethics, and his subsequent influence on Sidgwick. Schneewind devotes the second part of his book completely to the study of Sidgwick's The Methods of Ethics, seeing him primarily as a utilitarian moralist.

Schneewind claims that Sidgwick's religious and moral views developed on parallel lines and reached a decisive stage in 1869

1. J.B. Schneewind, Sidgwick's Ethics & Victorian Moral Philosophy, (Oxford: The Clarendon Press, 1977), Preface, P.vii.

2. Ibid., "Introduction", P.1.

3. Ibid., P.6.

when the moralist resigned his fellowship at Trinity College, Cambridge. He offers Sidgwick's views presented in the latter's essay entitled "The Ethics of Conformity and Subscription" which was published in 1870, as evidence for his disconformity. He links this essay with the ideas implied in two letters from Mill to Sidgwick.¹ He lays much stress on the significance of the 1870 article whose arguments were restated many times, particularly in Sidgwick's work Practical Ethics (1898). He illustrates, for example, the tripartite nature of Sidgwick's arguments: firstly, that the Bible contained errors on historical grounds, secondly, that the idea of biblical morality should be drawn from the Bible itself and not from the theological interpretations thereof,² and, thirdly, that the doctrines of the Bible must be open to rational treatment.

Speaking of leading moralists who refused to accept utilitarian ethics, Schneewind discusses Whewell's intuitional system of morality and refers to his attitude towards the utilitarian system. Whewell described the latter system as "low" morality as compared with the "high" Christian morality, simply because it was concerned with earthly interests, while the intuitive system was based on divine principles which secured man's salvation. Nevertheless, Whewell did not deny the role of reason without which it would be impossible for the moral faculty to determine whether the actions were right or wrong. Whewell's ethics represented an attempt to show that there was no conflict between science and morality, and eventually, between science and religion. Whewell thought that this approach would facilitate the rejection of the utilitarian basis of morality.

1. Schneewind says that these letters are "the only evidence of direct contact between the two." - Ibid., P.37.

2. This is essentially an Anglican view.

In his work, History of the Inductive Sciences, Whewell held that the knowledge of science was derived from the knowledge of history, while moral philosophy could be derived from man's own conscience by means of reflection. His later views on morality, says Schneewind, disclosed that not only did intuition form the basis for ethical knowledge, but also for the "facts of science and the truth of the existence of God."¹ These views accord, of course, with eighteenth century moral philosophy.

J.S. Mill's treatise Utilitarianism which appeared in 1861,² did not concentrate so much on utilitarian ethics, but rather on the reconstruction of the whole system within a framework of logic and philosophy. In his comments on Mill's work on morality, Schneewind remarks that Mill "wrote little on Morality during most of his life."³ Discussing Mill's philosophic influences, Schneewind refers to Saint-Simon's contribution to Mill's concepts of history in terms of change, and asserts that Mill's moral views were established on these concepts. Mill accepted the notion that there were two kinds of moral laws, those which judged an action as good because of its direct consequences and those which did not. His distinction between "lower" and "higher" pleasures was criticised by many who argued that it was difficult to reduce qualitative values to quantitative ones. "But Sidgwick," says Schneewind, "does not have a high opinion of Mill's work in Ethics,"⁴ though he admired the originality of his System of Logic.

In The Methods of Ethics Sidgwick clearly announced that he aimed at the exposition and criticism of the contemporary ethical system, though his arguments throughout the work favoured utilitarian ethics. In

1. Ibid., pp. 101 - 102.

2. Schneewind says that Mill drafted Utilitarianism in 1854, revised it in 1859, and published it in 1861. Ibid., P.163.

3. Ibid., P.158.

4. Ibid., P.194.

the preface to the first edition (1874) Sidgwick declared that he deliberately refrained from the inquiry into "the origin of Moral Faculty."¹ He asserted that his treatise was neither dogmatic nor metaphysical, but it was, more or less, a practical examination of the contemporary methods of morality. In the preface to the second edition (1877), Sidgwick remarked that: "I have further been led, through study of the theory of evolution in its application to practice, to attach somewhat more importance to this theory than I have previously done."² Therefore, one finds additional material in this edition as well as alterations in terminology. The moralist asserted that he avoided polemical presentation because the book itself was controversial in nature. Moreover, his study of ethics was based on the principle that morality was the science of what "ought to be", not what it "is", simply because moral actions were mostly voluntary in nature. According to this principle Sidgwick distinguished between the science of ethics and the positive sciences. He concentrated on showing that there was something in common between the various schools of ethics, an attempt which revealed his intention at compromise, particularly between the two eminent schools of intuitionism and utilitarianism.

Sidgwick divided his work into four parts which he called 'Books'. In the first part he offered a general discussion of ethical views and definitions common to the contemporary schools. He presented the differences between the utilitarian and intuitive methods in terms of the ultimate end of a moral action. In accordance with Bishop Butler's view, Sidgwick embraced the principle of self-love which seemed to him the basis of every moral code. In fact, Sidgwick himself admitted the validity of Bishop Butler's principles of morality by

1. Henry Sidgwick, The Methods of Ethics (1874), 2nd edition (London: Macmillan, 1877), P.iii.
 2. *Ibid.*, P.viii.

saying:

I held with Butler that "Reasonable Self-love and Conscience are the two chief or superior principles in the nature of man," each of which we are under a "manifest obligation" to obey: and I do not (I believe) differ materially from Butler in my view either of reasonable self-love, or - theology apart - of its relation to conscience.¹

One senses some confusion in Sidgwick's use of "principle" and "method". They appear to be interchangeable terms in Sidgwick's work. 'Book II' of the work is assigned to the analysis of "Egoism", a moral concept which includes Bishop Butler's self-love, Bentham's hedonism, and the principle of the greatest happiness, not excluding the egoistic law of traditional morality which manifests itself in a form of punishment and reward. Finding no satisfactory methods achieved by various schools of morality, Sidgwick arrived at the conclusion that: "There is no scientific short cut to the ascertainment of the right means to the individuals greatest happiness: every attempt to find a "high priori road" to this goal brings us back ultimately to simple empiricism."² Thus, Sidgwick clearly asserted the significance of empirical method in the process of constructing a moral system. Sidgwick's concentration on empirical method was refuted by Spencer, as we shall later see.

We notice in 'Book III' that Sidgwick treats egoism as merely an aspect of intuitionism basing this view on the notion that man's conscience serves as a means for moral intuition. This intuitive sense is, afterwards, connected with moral rules sanctioned by public opinion and imposed on the individual. This process of argument, between the individual and a society, on a moral code which would turn into a universal intuitionism warranted by the authority of common sense.

1. H. Sidgwick, The Methods of Ethics, op. cit., P.xii.

2. Ibid., pp. 171 - 172.

Schneewind, in part II of his work on Sidgwick, points out that:

"Historically, ... common-sense morality had come by the middle of the 1860's to occupy a central place in the ethical controversy between the 'two schools' of the early Victorian era."¹ He states that Sidgwick's approach and conclusions accord with the historical development of ethics, and that common-sense morality seems to be dependent on a self-evident method.

Sidgwick divided his intuitive method into three categories: "Perceptual, Dogmatic, and Rational or Philosophical."² What he called 'perceptual intuitionism' is related to actions that contain an immediate recognition that they are right; the 'dogmatic intuitionism' suggests a good number of acts which can be intuitively conceived as right, and the 'philosophical intuitionism'³ deals with a limited number of moral principles which seem to be valid in that they can be rationally tested. In the closing argument of this chapter Sidgwick connects rational intuitionism with utilitarianism by stressing his view that: "Utilitarianism thus appears as the final form into which a really scientific intuitionism tends to pass."⁴ It seems he does not distinguish between 'scientific' and 'rational', or 'rational' and 'philosophical'. Schneewind argues that in the process of reconciliation between intuitionism and utilitarianism, Sidgwick was forced to identify three phases of intuition in order to make the combination possible. But Schneewind recognizes that: "Confusion arises, however, because Sidgwick does not clearly present one single ultimate principle as involved in all three phases of intuitionism, and because by distinguishing senses of the term itself he suggests a greater difference between the third phase and the other two than there actually is."⁵ Perhaps Sidgwick rationalized intuitionism only to present it as a

1. Schneewind, *op. cit.*, pp. 192 - 193.

2. H. Sidgwick, *The Methods of Ethics*, *op. cit.*, P.91.

3. Sidgwick devotes chapter XIII to the analysis of this concept. *Ibid.*, pp. 346 - 362.

4. *Ibid.*, P.361.

5. J.B. Schneewind, *op. cit.*, P.201.

historical stage leading to utilitarianism.

His attempt to rationalize morality led Sidgwick into metaphysical areas, and in order to find evidence for his metaphysical arguments he was involved in psychical investigations,¹ holding that by such a method it was possible to experience religious as well as moral convictions. An attitude which may reveal to the modern reader that Sidgwick's methodology and his capacity for rational analysis are supplemented by a mystical element. In fact, he may have well been uneasy for he fluctuated between various moral standpoints, between the 'known', and the 'unknown', and, at last, between 'reason' and feeling, as we have already seen in his comments on the In Memoriam.

In 1886, Sidgwick published his Outlines of the History of Ethics for English Readers aiming at providing the student of ethics with a comprehensive treatment of different moral schools. In order to accomplish this aim, he traced the contemporary moral concepts back to their origins by following up their historical development. Sidgwick, in this work, referred to Bentham's concept of morality, that all actions were determined by their consequences as related to pleasures and pains, and that they must be judged as 'right', or 'wrong' according to this standard. He confirmed that Bentham's concept was completely based on an empirical method, and even defended his attitude towards this significance of "religious sanction" which was assumed by Bentham as pleasure and pain sanctioned by the "immediate hand of a superior invisible being,"² a view which might be seen as somewhat lacking in the empirical basis that the utilitarian school always claimed. Defending this statement of Bentham, Sidgwick pointed out that: "he does not seriously take account of religious hopes and fears, except as motives actually operating on human minds, which

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1. D.G. James wrote: "Philosophy, then, left Sidgwick somewhere between Kant's postulates of the practical reason and 'universal scepticism'. But there was another hope, which might yet save the day: this was science, in the shape of Psychical Research." Henry Sidgwick, Science & Faith in Victorian England, (London & New York: Oxford U.P., 1970), p.42.
 2. H. Sidgwick, Outlines of the History of Ethics for English Readers (1886) (New York: Macmillan, St. Martin's Press, 1967), with an additional chapter by Allan G. Widgery, P.242.

therefore admit of being observed and measured as much as any other motives."¹ Sidgwick went on to speak of Dr. J. Martineau's intuitionistic views and J.S. Mill's moral arguments within the philosophic formula of "greatest happiness."

In fact, Sidgwick's book originally appeared as an article for the Encyclopaedia Britannica,² but was, later, expanded into a general history of morality. "Its spirit is dogmatic rather than historical," wrote a certain H.M. Stanely, an American critic, in his review of Sidgwick's book. To this statement Sidgwick replied that he was "impartial" and that: "I endeavoured to indicate briefly the order and manner in which the different elements in our present conception of the subject were historically developed."³

No doubt, Sidgwick's The Method of Ethics was one of the most distinguished works at the time, if not the best. To Schneewind, it was the greatest, for he devotes more than two hundred pages to the study of this very book. Perhaps it would also be fair to mention that Schneewind's book itself is the most important study not only of Sidgwick's ethics, but also of Victorian morality as a whole. Its preface discloses that the author was working at it for some fourteen years. Although Schneewind's work has no concluding chapter, the author's sympathy with Sidgwick's moral system is obvious and is implied throughout the work.

III. A VICTORIAN SYMPOSIUM ON MAN'S MORAL NATURE

The traditionalists believed that religion was the only source which provided man and societies with rules of right and wrong.

1. Ibid., P.243.

2. Vol. VIII, Ninth edition (Edinburgh, 1879), pp. 574 - 611.

3. H. Sidgwick, Outlines, op. cit., preface, P.ix.

These rules were not man-made but inspired by God and so devoid of error; moreover they had behind them the sanctions of heaven and hell.

Moral principles were thus imposed on man by fear of punishment and hope of reward.

Francis Newman (1805 - 1897) held that such a system was intrinsically immoral. Noel Annan sums up his position:

It was wrong of God the Father to demand the death of His Son to placate the wrath against mankind. It was wrong of Jesus to have been evasive and obscure in His teaching. It was wrong to bribe to be good by promises of reward in a world to come. Above all, how can Christians justify the presence of evil in a God-created world - in a world where Nature is cruel; or rather the laws of God in Nature contravene human morality..?

This passage condemns the idea of reward and punishment as a means of enforcing ethical principles. To use hope and fear to engender virtues is itself unvirtuous. But such rationalist attacks from a minority of unbelievers did not much affect the traditional conception of morality which the great mass of believers adhered to. From the practical point of view, civil and criminal law as well as traditions and conventions were still largely based on the moral rules of Christianity in spite of the many movements towards secularisation in England and on the Continent. This at least was the view taken.

The Dean of St. Paul's in his contribution to a symposium entitled "The Influence upon Morality of a Decline in Religious Belief", introduced by Sir James Stephen in The Nineteenth Century, in 1877, writes:

If by morality is meant the morality generally recognized in Europe on the points of truthfulness, honesty, humanity, purity, self-devotion, kindness, justice, fellow-feeling, and not only recognized, but judged by conscious superiority of reason and experience to be the right standard, as compared with other moralities - such as those of the Puritans, the monks, the Romans, the Hebrew - then I observed that, as a matter of fact and history, which to me seems incontrovertible, this morality has synchronised in² its growth and progress with a historical religion, viz, Christianity.

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1. Sir Noel Annan, "The Strands of Unbelief," Ideas & Beliefs of the Victorians, (ed. by E.P. Dutton & Co. Inc., New York, 1966), P.153.
 2. A Modern 'Symposium', "The Influence upon Morality of a Decline in Religious Belief", The Nineteenth Century (March-July, 1877) Vol.I. P.350.

He supports his claim by appealing to history, yet facts of history told against the Christian position in the view of many unbelievers of whom George Eliot and Samuel Butler were eminent examples.

The Naturalist School was prepared to accept traditional ethical teaching in so far as it contributed to individual or social happiness. They also considered a large number of additional qualities as virtues. Hume had listed 'pride, tranquility, and wealth,'¹ as moral virtues. Heroism and sense of duty were, to George Eliot, virtues of great significance. Devotion to scientific research and facts was, to scientists, a moral virtue. For the evolutionists, worship of Nature which was the origin of life was a virtue. Devotion to Man and Humanity was the highest virtue for the Comtists.

But what precisely is this natural conception of morality?

'Now that moral injunctions are losing the authority given by their supposed sacred origin, the secularization of morals is becoming imperative',² Herbert Spencer announced in his 'Preface' to The Data of Ethics which appeared in 1879. Thus development was not only a result of changes in the structure of society but also of new themes about the origin of life. Darwin's Origin implicitly asserted that life on earth has nothing to do with supernatural entities at all.

Advocates of this conception were scientists, men of research, and men of letters. Their proofs were based on experiments and scientific method. They were the intelligentsia of their age. Describing their merits, Bronowski points out:

They knew themselves to be honest, tolerant, searching and humble at once, men of good mind and good will. They knew themselves to be liberators in the widest sense...³

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1. Encyclopaedia Britannica, "Ethics" (edition of 1974), Vol. VI, P.978.
 2. Herbert Spencer, The Data of Ethics, 'Preface' (1879), P.iv.
 3. "Unbelief and Science", Bronowski, Ideas and Beliefs of the Victorians, op. cit., P.169.

These men rejected both God and religion. They maintained that the moral sense was an innate fact which had been rooted in man's nature by his ancestors from the far past. This instinct was developed according to the progressive laws of Nature towards perfection. Thus, W.K. Clifford depicts the moral sense in an interesting image:

The voice of science is the voice of our Father Man who is within us; the accumulated instinct of the race is poured into each one of us, and overflows us, as if the ocean were poured into a cup.¹

Clifford asserts that the moral sense is an instinct which takes its origin from Man himself. Owen Chadwick in his recently published book, The Secularization of the European Mind, points out that the system of ethics based on science or the theory of evolution which Clifford and others tried to found was meaningless to the ordinary man, but found sympathy in academic circles.²

The Positivist conception of morality was founded on the conviction that science is the only way to truth and what seems properly to belong to the second group. However on closer examination it can be seen to have a religious component which places it in the third.

While the theologians regarded morality as absolute, Positivists held that it was relative. Positivists supported their claim by appealing to history and observation. History provided them with the knowledge of how standards of right and wrong had been developed, how some had been modified, others preserved, and how far those preserved morals had been affected by time, belief, and circumstances.

Observation enabled man to get information about morality by looking at the behaviour of others as well as of himself. Two instincts

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1. "A Modern Symposium", W.K. Clifford, The Nineteenth Century, op. cit., P.356.
 2. Owen Chadwick, The Secularization of the European Mind in the Nineteenth Century (Cambridge: Cambridge U.P., 1975), P.231.

were simultaneously at work, selfishness and altruism. Both instincts were strong enough to challenge each other, the former would be defeated because of the strength of social affections arising out of family life. Professor Owen Chadwick rejects this Comtist view, saying:

To eradicate the ego-instinct is folly ... Affection cannot abolish selfishness, it can only hold it in check.¹

In an article in The Nineteenth Century, entitled "The Soul and Future Life", Frederic Harrison explains his positivist system of morality as distinguished from the biological one. He says:

Whilst keeping in view the due relations between moral and corporeal facts, we distinguish moral from biological facts, moral science from biology. Moral science is based upon biological science, but it is not comprised in it; it has its own special method, though always in the sphere of law.²

Harrison wants to show that moral laws are different from biological ones but they both are in harmony with the Comtist's view of the whole. He insists that these morals must be studied on scientific grounds similar to those of biology. But there are qualities in man, he argues, which are 'over and above man's nature',³ for instance, the laws of thought and character. His concept of these qualities bear a close relationship to the notion of soul in the Biblical sense of 'breath, life, moral sense, or spiritual emotion.'⁴ Harrison believes that there is a mutual interaction between the moral and the physiological life. He asserts a consensus between man's moral faculties and his intellect. His system of ethics respects the conclusions of both the spiritual and naturalistic approaches, though he rejects, of course, any spiritual or supernatural causes which go beyond the nature of organism. The positivists deny all transcendental hypotheses about human faculties. Their concept of

1. Owen Chadwick, op. cit., P.235.

2. "The Soul and Future Life", Frederic Harrison, The Nineteenth Century, (March - July, 1877), Vol. I. P.627.

3. Ibid., P.633.

4. Ibid., P.638.

'Humanity', as Chadwick puts it, 'is a personification of the high potentialities of intelligence and morality in human nature.'¹ Chadwick notes that Comte made The Imitation of Christ his daily reading at the end of his life, but he never admitted Christianity as his religion. Christianity, for George Eliot who belonged to the third group, was 'the most relevant and moving symbolism for the mysteries of life',² as Humphrey House concludes his essay on her doctrine. Her attitude towards the sense of duty and heroism will be seen in the following part.

An example of debate about the sense of duty and heroism as moral qualities may throw light on the differences of opinion between the theologians, pure scientists, and positivists.

J.S. Mill attached a great deal of importance to the sense of duty. This springs from his commitment in principle to 'The Greatest Happiness of the Greatest Number'. The individual must sacrifice his own desires for the benefit of others. To do so is a virtue which adds to the happiness of the community. He holds that all actions have to be judged by their utility. The consequences of an act may affect both the individual and society and the individual may have to suppress his happiness when it is in conflict with the happiness of the greatest number. On such actions of self-denial Mill wanted to systematise his principles of morality. In fact, Mill did not give any theory of ethics as substantial as that of Comte or Spencer.

Speaking of the Ultimate Sanction of the Principle of Utility in the third section of his Utilitarianism, Mill expounds that the sense of duty is an internal feeling which springs from subjective interests but it turns to be for the benefit of the greatest number, because its moral

1. Owen Chadwick, op. cit., (1975), P.139.

2. Humphrey House, "Qualities of George Eliot's Unbelief", Ideas and Beliefs of the Victorians, op. cit., (1966), P.163.

obligation is, he says, based on the social feelings of mankind. His conception of duty is a harmony between the personal and the altruistic happiness. He regards this moral feeling as an acquired quality like any of those faculties of reasoning, speaking, and building cities.

Being acquired, it does not mean a devaluation of this moral feeling. Mill argues:

If the moral feelings are not innate but acquired, they are not for that reason the less natural ... The moral feelings are not indeed a part of our nature in the sense of being in any perceptible degree present in all of us ...¹

He - like Comte - attributes the development of this moral feeling to the factor of education. His indecisive position can be seen in the many 'if' clauses which reveal his hypothetical method. For example, he points out:

Like the other acquired capacities the moral faculty, if not a part of our nature, is a natural outgrowth from it; capable, like them, in a certain small degree of springing up spontaneously; and susceptible of being brought by cultivation to high degree of development.²

Mill was an atheist who also helped to introduce Comte's principles into England. He was, however, more impressed by Comte's theories of intellectual and social evolution than by this ethical and religious teachings.

Commenting on Mill's Utilitarianism, Frederic Harrison remarks:

It remains, after all deductions and corrections made, far the most ample and rational textbook₃ of the principle of Greatest Happiness as the foundation of ethic.³

Harrison suggests the "Service of Man" as a title for Utilitarianism which seems to him 'a very awkward term to describe the pursuit of the highest welfare of mankind.'⁴

1. J.S. Mill, Utilitarianism, ed. by Oskar Piest, (The Liberal arts, New York, 1957), P.39.

2. Ibid., P.39.

3. Frederic Harrison, Tennyson, Ruskin, Mill and Other Literary Estimates (1899), P.303.

4. Ibid., P.304.

On the other hand, Lord Selborne argues that 'the idea of duty is not practical or intelligible without religious conceptions.'¹ He rejects the Utilitarian notion of duty as sufficient to promote happiness and as the pursuit of morality in life. Religion, to him, is the only source for the sense of duty and happiness.

Dr. J. Ward refers to two kinds of morality, the first, as a sense of duty towards other human beings, the second, as a sense of duty towards God. Morality, to him, consists in "man's sacrifice of his personal desires for the public good", ... and "men's duties to their Creator."² He is extremely surprised to find that theists use the first conception in their arguments and exclude the second which is, as he says, the nobler.

Harrison finds no need for religion to stimulate the feelings of duty because they are innate. But if religion is necessary it must be Comte's, not Lord Selborne's and Dr. Ward's. The sense of duty, he holds, is motivated by the belief that by living for the happiness of others, our actions will be immortalized in the selves of others. When we sacrifice ourselves we have to remember that former generations have already sacrificed themselves for us, and that what we contribute of good is for the perfection of the human race.

W.K. Clifford asserts that the sense of duty exists in man's nature, and that the phenomenon of self-denial is an extension of the self. He remarks:

Not only is a sense of duty inherent in the constitution of our nature, but the prompting of a wider₃ self than that of the individual is inherent in a sense of duty.

T.H. Huxley represents the most solid wing of scientific naturalists. There is no ground for compromise between his system of

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1. "A Modern Symposium", Lord Selborne, The Nineteenth Century, op. cit., P.335.
 2. "A Modern Symposium", Dr. James Ward, The Nineteenth Century, (May, 1877), P.534.
 3. "A Modern Symposium", W.K. Clifford, The Nineteenth Century, (March - July, 1877), Vol.I, P.354.

morality, which is based on evolutionary laws of nature, and any other speculative system of ethics, spiritual or supernatural. Man's actions, to him, take place either by instinct or by intellectual motives. They are judged as right or wrong by their effects on a certain man or his society. Huxley differentiates between the personal morality and the social. He rejects the positivist's view that man's morality increases with his knowledge. He argues that man's constitution and capacities for pleasure and pain are "in no way affected by the abbreviation or the prolongation of his conscious life,"¹ because, he says, these faculties are strong enough to hold their own basis. They have nothing to do with any religion, Christian or Comtean.

Retorting at the positivist idea that man's morality increases with the prolongation of his conscious life, Huxley says that the hot taste of ginger does not need any 'sensitive soul', or any former views about the nature of ginger. He also asks the theologians whether they can give him the proof that man will lapse into bestial brutality if his morality has not been based on a theological dogma, despite the difficulty of proof for the truth of the dogma itself.

Such a materialist is dangerous to morality and religion, explains Harrison, because he has neither a religious mind, nor a spiritual experience. Commenting on theories of evolution, Harrison points out:

There are theories which justly called 'Materialist', that they are physical conceptions of human nature,² which are truly dangerous to morality, to goodness, and religion.

T.H. Huxley appreciates the Utilitarian sense of duty. For him, the question whether a certain action by an individual may increase the happiness of the greatest number or not, "is a perfectly legitimate subject of scientific inquiry."³

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1. "A Modern Symposium", Professor Huxley, The Nineteenth Century (May, 1877), P.536.
 2. "The Soul and Future Life", Frederic Harrison, The Nineteenth Century op. cit., (1877), P.630.
 3. "A Modern Symposium", Professor Huxley, The Nineteenth Century, op. cit., (May, 1877), P.537.

George Eliot's vision of morality is expressed in her noble poem of which the following lines are part:

Oh may I join the choir invisible
 Of those immortal dead, who live again
 In minds made better by their presence.
 So to live is heaven ...
 That better self shall live - till human time
 Shall fold its eyelids, and the human sky
 Be gathered like a scroll within the tomb,
 Unread for ever.

Its melody emerges from a soul pure in its end, pious in its manner, and passionate in its love. Moreover, there is a comprehensive world beyond the enchantment of its words. A system of ethics is suggested by that invisible choir. Who are those immortals? What have they done to be immortalized? What have we to do to join their procession?

The moral sense, the conception of duty, and the love of goodness and righteousness which had been imbibed by Man from time immemorial, all are man-made. The immortals are our ancestors, the far generations who planted in man's nature all that generates his happiness. It is true that they are dead, but they are also alive in the minds of the living beings.

We are indebted to those men of the past because they tolerated much and sacrificed generously for the welfare of humanity. 'That better self', in their constitution and their sense of duty are eternalized in the human race. Men of talent, will, and virtue are 'a minority', says W.H. Mallock. He renounces George Eliot's conception of morality and finds no justification for sanctifying heroism or any other virtue unless it has an object. And even when a virtue has an object it should be a worthy one. The worthy object, to Mallock, is connected with something beyond this life. Showing the difference between

1. "Is Life Worth Living?", W.H. Mallock, The Nineteenth Century, op.cit., P.262.

his school of morality as opposed to the atheist's, Mallock says:

It is about the object only of the heroism that the two systems differ. Both have for their end true human welfare, the truest human happiness; but the one connects such happiness with something beyond this life - with something higher, purer, and more complete; and the other explicitly bounds it by this life, which contains, it teaches, all the elevation, purity, and completeness of which the loftiest human nature is capable.¹

Love and Humanity and adoration of Man do not satisfy Mallock. He finds George Eliot's words such as 'better self', 'beauteous order', and 'undying music', meaningless unless they are put in his supernatural mould of ethics.

We may infer from our study of the problem of morality that the new ethics was a shock to the clergy. Some theologians denied it and sharply opposed to it, others tried to compromise between religion and science. The clergy and the State could not employ pressure over the scientific naturalists, as was previously done, because they were men of great abilities, of high qualities, and of high position. They made unbelief respectable, as Bronowski says. These men of science were divided into schools of ethics like those of the theologians into sects. Some naturalists believed in the evolutionary morality, others believed in the morality of the greatest number, and others followed the positivist philosophy.

IV. SPENCER'S EVOLUTIONARY ETHICS

In The Data of Ethics, which first appeared in 1879, Herbert Spencer offered an elaborate analysis of morality in the light of the theory of evolution, as applied to man in terms of a physical organism as well as a social being. This systematic study of ethics was probably the most sophisticated of many similar attempts during the

1. Ibid., P.266.

period. It came out at a time when the evolutionary theory desperately needed to offer such an alternative since it was often attacked by traditional moralists because it failed to offer a natural basis for moral codes as a substitute for the traditional ideas of divine inspiration.

No doubt, Spencer was keen to establish his system of ethics as the first to be based on the results of the contemporary sciences as well as scientific methods of investigation. His views and conclusions which were founded on both inductive^{and} deductive approaches did not lack philosophical authority. He himself asserted in the "Preface" of his book that from 1842, the date of his first essay on "The Proper Sphere of Government", he aimed at "finding for the principles of right and wrong in conduct at large, a scientific basis."¹

Dealing with the theological school of morals, Spencer rejected the intuitive theory which regarded man's sense of morality as separate from his own experience and from the experience of his ancestors. He also denied that morals were divinely implanted in man's constitution. He found that the Christian writers who belonged to this school, despite their differences, were wrong in asserting that there would be no moral guidance in the absence of belief in Deity. Their doctrines of morality, Spencer continued, were identical with those of the religious codes from which they derived their authority. The moral sense was either revealed in the holy books or imparted to man's conscience. Spencer argued that if there were no origins of morals other than those which were divinely enunciated or intuitively attained within the framework of the Christian tradition, then, for the non-believer wrong actions would not be known as wrong and, eventually, those who committed them, knowing nothing of God's

1. Herbert Spencer, The Data of Ethics (2nd edition, 1879), P.iii.

will, would not be deemed sinners.

Spencer, for example, cited Hutcheson¹ who believed in the doctrine of man's 'special creation' and the 'immediate excellence' of his moral sense, only to show that Hutcheson himself professed that intuitive feelings and right actions were recognised as good as far as they tended to be for the "happiness of others."² He stated that an intuitive sense as such was not universal. In order to support his statement, Spencer showed the contrast in two different concepts of murder: the one as a wrong act according to the civilized man, and the other as an honourable action according to the Fijian's vision. The Turcomans, added Spencer, considered theft as a sacred action "by making pilgrimages to the tombs of noted robbers,"³ and the Egyptians were proud of their skill in lying. Spencer in his argument wanted to know whether the intuitionist could give any justifications or interpretations to such different conceptions of morals other than which Spencer himself deduced:

If you inquire of him (the intuitionist) in what way the civilised intuition is to be justified in opposition to the intuition of the savage; no course is open save that of showing conformity to the one conduces to well-being, while conformity to the other entails suffering, individual and general.⁴

He reinforced his argument by pointing out that it was unavoidable for the intuitionist to "ignore the ultimate derivations of right and wrong from pleasure and pain."⁵ Actions to Spencer were recognized as moral or immoral by their effects of increasing or diminishing man's happiness. He pointed out that the theological school of ethics itself was in harmony with the principle of pleasure and pain by arguing that: "Men who seek to

1. Francis Hutcheson (1694 - 1746) a professor of moral philosophy at Glasgow and the writer of System of Moral Philosophy which was posthumously published in 1755. Dictionary of National Biography, edited by Sidney Lee, vol. XXVIII. pp. 333 - 334.

2. H. Spencer, op. cit., P.38.

3. Ibid., P.39.

4. Ibid., P.39.

5. Ibid., P.40.

propitiate God by inflicting pains on themselves, or refrain from pleasure to avoid offending him, do so to escape greater ultimate pains or to get greater ultimate pleasures."¹

He stressed the significance of the pleasure-pain principle by which he aimed to refute the idealistic views of revealed morals and link his argument with that of the utilitarian school of ethics which he dealt with in the following chapter. Spencer's concluding paragraph of chapter three is worth citing, for it shows the importance of motive in arriving at a moral judgement:

So that no school can avoid taking for the ultimate moral aim a desirable state of feeling called by whatever name - gratification, enjoyment, happiness. Pleasure somewhere, at some time, to some being or beings, is an inexpugnable element of the conception. It is as much a necessary form of moral intuition as space is a necessary form of intellectual intuition.²

In this stage of his evolutionary system of morality, Spencer, however, applied the principle of cause and effect to moral sense in order to remark that the intuitionistic and traditionalistic moralists failed to recognise the essential relation between acts and their consequences.

Proceeding to the question of utilitarian ethics, Spencer sharply criticised the view of blessedness as the ultimate end of the "pig-philosophy", as he nicknamed utilitarianism. He argued that blessedness could be "a particular form of happiness", when it brought pleasure for someone, while it could be a curse when it produced pain, indifference, or pessimism for another. He explained that he had already referred to the defects of utilitarian ethics in a letter to J.S. Mill long before the appearance of his Data of Ethics. He asserted, in that letter, that the inductive method applied to the recognition of the relationship that existed between acts and results by means of observation

1. Ibid., P.45.

2. Ibid., P.46.

was not a sufficient basis for subsequent generalisation. Inductive methods did not use the principle of cause and effect in its full sense. Deduction was the proper method which was suggested by Spencer in his letter of 1863 in which he pointed out that:

These good and bad results cannot be accidental, but must be necessary consequences of the constitution of things; and I conceive it to be the business of Moral Science to deduce, from the laws of life and the conditions of existence, what kinds of action necessarily tend to produce happiness, and what kinds to produce unhappiness. Having done this, its deductions are to be recognised as laws of conduct; and are to be conformed to irrespective of a direct estimation of happiness or misery ... And the objection which I have to the current Utilitarianism is, that it recognizes no more developed form of Morality - does not see that it has reached but the initial stage of Moral Science.¹

The passage reveals two important objections: firstly, that this system of morality lacks the deductive method in the process of rationalization, an essential basis for every developed system of thought or science, and secondly, that it ignores the causes of conduct. It also reveals the extent to which utilitarian ethics concentrated only on the observation of the results of actions. Commenting upon this point, Schneewind asserts that "Spencer agrees with the utilitarians that 'happiness is the ultimate end,'"² but finds the system "too crude and empirical." Although Spencer recognized some essential moral intuitions in Social Statics, says Schneewind, he, later, considered them to be "the results of accumulated experiences of Utility, gradually organized and inherited,"³ and in time they disappeared from man's conscious world. This view accords, of course, with Darwin's attitude explained in The Descent of Man. Darwin himself referred with approval to Spencer's letter to Mill.⁴

In Social Statics (1850) Spencer spoke of the progressive nature of man, Society, and morals. He held that evil itself, which had

1. Herbert Spencer, The Data of Ethics, 3rd edition (1881), pp. 57 - 58.
 2. Schneewind, op. cit., P.387.
 3. Ibid., P.387.
 4. Ch. Darwin, The Descent of Man, op. cit., P.123.

originally been a kind of maladaptation of the human being to his environment, would disappear according to the natural law of perfectibility. He also criticised the utilitarian maxim of the 'greatest happiness', an attitude which was not appreciated by Mill.¹ Social Statics was followed by an article entitled "Progress, its Law and Cause" (1857) in which Spencer outlined his theory of evolution and progress. In the First Principles which first appeared in 1862, Spencer offered a more elaborate exposition of the theory by applying the principle of change - from indefinite homogeneous forms to definite heterogeneous ones - to the fields of biology, sociology, psychology, and morality. But it was in The Data of Ethics, as we have seen, that Spencer concentrated on presenting a substantial study of this most complicated phenomenon of life.

Spencer also attacked the political school of ethics inspired by T. Hobbes (1588 - 1679), but this is not our concern here. We shall therefore proceed to deal with Spencer's ethical system, as briefly as possible.

Spencer's system of morals drew from several sciences such as physics, biology, psychology, and sociology, which seemed to him essential in explaining the facts of human nature. He believed in the integrity of all phenomena in life. His cosmic view of the moral sense was presented in the following lines:

If the solar system as a whole, the earth as a part of it, the life in general which the earth bears, as well as that of each individual organism - if the mental phenomena displayed by all creatures, up to the highest, in common with the phenomena presented by aggregates of these highest - if one and all conform to the laws of evolution; then the necessary implication is that those phenomena of conduct in these highest creatures with which Morality is concerned, also conform.²

1. Quoted in Schneewind, op. cit., P.176.

2. Herbert Spencer, The Data of Ethics, op. cit., P.63.

The passage clearly indicates that Spencer based his system of ethics on the theory of evolution which became popular in the 1870's. He initially asserted that the principles of morality passed from indefinite homogeneity to a definite heterogeneity, by which he meant, of course, that moral rules developed from the primitive stage of the savage to their highest form in the civilized world. The refinement of these rules was due to the connection of the present acts with bygone ones, the results of which constituted the judgement of conduct as good or bad.

With regard to the physical view of morality, Spencer held that there had been "an entire correspondence between moral evolution and evolution as physically defined."¹ He stated that moral rules, in the process of their development tended towards an equilibrium, similar to that achieved by the organism in adapting its internal actions to the external conditions of existence in its physical evolution. Elements of conduct, Spencer claimed, could be recognized in the acts of hearing, seeing and touching. Agressive or defensive acts which were experienced by the savage produced physical motions consisted of feelings and ideas which developed and maintained in the process of that equilibrium. "The life called moral," concluded Spencer, "is one in which this maintenance of the moving equilibrium reaches completeness, or approaches most nearly to completeness."²

On the biological plane, Spencer held that man's moral sense evolved towards perfection because he adjusted his actions to the conditions of the external world. He asserted that any disorder in organic functions would adversely affect man's standard of morality. Moral obligation, for Spencer, was related to the physical function of

1. Ibid., P.74.

2. Ibid., pp. 71 - 72.

the organs and, strictly speaking, it was based on the performance of every organic function. "The moral man," according to Spencer's biological definition, "is one whose functions... are all discharged in degrees duly adjusted to the conditions of existence."¹ These bodily changes must be connected, Spencer said, with the accompanying mental changes, an interpretation which accords with a psychological view of morality.

In his account on "the Psychological View" of morality, Spencer confirmed that the essentials of moral obligation lay in the fact that a certain feeling, or feelings, controlled other ones. The conflict between the higher and lower feeling brought about the significance of mental faculties in the construction of moral sense. He considered the sense of moral obligation to be "an abstract sentiment generated in a manner analogous to that in which abstract ideas are generated."² The consciousness of this feeling developed in accordance with the external effects of religious restraints, social conventions, and political authorities.

The sociological concept of morality was illustrated in Spencer's statement that ethics was "a definite account of the forms of conduct that are fitted to the associated state, in such wise that the lives of each and all may be the greatest possible, alike in length and breadth."³ In this chapter of the book, Spencer mediated between the welfare of the individual with that of society by compromising between the conflicting feelings in various fields. His process of mediation was similar in nature to that of the organism adapting itself to its circumstances. The social individual though antagonistic, found no alternative but to adapt his own interests to the interests of a larger unit of which he constituted a part. Thus, a higher life could be reached through

1. Ibid., P.76.

2. Ibid., P.124.

3. Ibid., P.133.

co-operation of man's egoistic 'truism' and altruistic tendencies. This higher life would be realized not by the theological ethics of divine inspiration, said Spencer, but by a conformity to the evolutionary principles of nature.

Yet, Spencer recognized the weight of the Utilitarian argument that happiness must be, in a sense, man's ultimate end when he discussed Sidgwick's views on the ethics of hedonism. Despite his objections which were mainly directed against the empirical method, Spencer concluded "And that happiness is the supreme end is beyond question true; for this is the concomitant of that highest life which every theory of moral guidance has distinctly or vaguely in view."¹ Nevertheless, he did reject Bentham's principle of equality in the degree of happiness² and Mill's attitude towards it.³

Spencer in chapter ten, enlarged his discussion of the relativity of happiness, a view raised as an objection against Sidgwick's empirical method. He recognized the existence of happiness of variable standards of pleasures and pains referring to the concepts held by different races, different men, and even by the same man at different periods of time. What was pleasurable to the savage ceased to be so, argued Spencer, to civilized man, simply because of the many changes of nature and of man's acquired capacities in the process of adaptation. Commenting on such changes and utilizing the view in favour of his evolutionary system of ethics, Spencer remarked that:

Now, not only it is rational to infer that changes like those which have been going on during civilization, will continue to go on, but it is irrational to do otherwise. Not he who believes that adaptations will increase is absurd, but he who doubts that it will increase is absurd.⁴

1. Ibid., P.172.

2. Bentham's words were quoted by Spencer: "everybody to count for one, nobody for more than one." Ibid., P.220.

3. Mill allowed some difference for kind, a middle class view, of course. In Page 220 and after, Spencer largely discussed the issue of equality.

4. Ibid., P.185.

He also demonstrated the interdependence between egoism and altruism on many grounds, physical, psychological, and sociological.

In his analysis of "Absolute and Relative Ethics", Spencer arrived at the conclusion that one "must consider the ideal man as existing in the ideal social state. On the evolutionary hypothesis, the two presuppose one another; and only when they co-exist, can there exist that ideal conduct which Absolute Ethics has to formulate, and which Relative Ethics has to take as the standard by which to estimate divergencies from right, or degrees of wrong."¹ Thus the physical perfection of the individual, his adaptation to the surrounding social circumstances, his inherited experiences of pleasures and pains, and the co-operation of his egoistic and altruistic tendencies, all within the framework of progressive evolution would serve the fulfilment of right conduct appertaining to ideal ethics. Henry Sidgwick, in his lectures which were posthumously published, attacked Spencer's evolutionary system of ethics and described The Data of Ethics as a "Utopia"². Spencer defended himself in his article entitled "Replies to Criticisms" which first appeared in the Mind, 1881, and, later, attached to the third edition of his book.

Although the advocates of scientific naturalism appeared more successful than their opponents of the traditional schools of morality, they failed to settle their own differences. They offered apparently essential propositions concerning the origins of morals, but one feels that each attempt was deliberately related to a philosophic theory of some kind. Some evolutionists, like Spencer and Darwin, were perfectionists anticipating a promising future for man's morals, while others, like Huxley, modulated their early optimism drawing more pessimistic

1. Ibid., P.280.

2. Lectures on the Ethics of T.H. Green, Mr. Herbert Spencer, and J. Martineau, ed. by E.E. Constance Jones in 1902, reprinted by Kraus Reprint Co., New York, 1968, P.164.

conclusions. Evolutionary moralists believed that morality pertained to social interests, though they concluded that it originated from both biological and social bases, to be polished by cultivation and intellect. Utilitarian ethics, despite Sidgwick's distinguished attempts to defend it, was reduced to an unsatisfactory hedonism and rejected by all other schools of morality.

Perhaps, because it was difficult to scientifically substantiate the nature of morality, some moralists explored the then somewhat ambiguous realms of psychology. One feels, however, that the distinction between innate and intuitive ethics was, in a sense, slight, since both presupposed a quality or capacity in the human construction that facilitated the development of moral sense, a factor which may well have contributed to the many attempts at compromise between the various systems of morality.

CHAPTER FOURTHE APPEARANCE OF SCIENTIFIC NATURALISM IN THE ARAB WORLD: AN HISTORICAL BACKGROUND

In order to fully understand the impact of scientific naturalism on the Arab world it is first necessary to offer a brief sketch of the historical background. The study will mainly confine itself to the Arab countries of Syria¹ and Egypt, though an analysis of the works of the Iraqi poet Jamil Sidqi az-Zahawi will be appended as an example of free thought in that latter country.

Attention will also be focused on the important role played by the newly-established Western institutions, such as the Syrian Protestant College and the Jesuit College, in disseminating information about scientific naturalism. We must remain aware of the part played by individuals within these institutions particularly as regards their personal contributions to Arabic periodicals, and their influence on their Arab students and other scholars. Where appropriate biographical sketches will be given for such men.

Though the political sphere is not our main concern, it cannot be ignored in this study, for on a general level, it is often difficult, and perhaps erroneous, to draw a distinct line between historical events and the development of thought, and on a specific level, the careers of some of the writers, that we are concerned with, were involved in this sphere.

As a final note one might add that although in Britain there were precursors to scientific naturalism, we should not expect to find works fulfilling the same function in the Arab world.

1. The term 'Syria' in this study refers to the geographical and historical entity, popularly known as 'ash-Sham', which is the land extending from the Taurus Mountains of Turkey in the North to the Sinai Desert in the South; and between the Mediterranean from the West and Iraq and Iran in the East. Thus it includes the recent states of Syria, Lebanon, Palestine, and Jordan which acquired a separate identity only in the early decades of the twentieth century.

I. SYRIA IN THE MID-NINETEENTH CENTURY

The Ottoman concessions which were diplomatically arranged by the European powers and which appeared in the Hatti-Humayun decree of 1856 had a great effect in producing social changes and a new literature in the area. The historical events of the period concerned were closely connected with the development of thought in the Arab countries. The Hatti-Humayun was declared on the eve of the peace conference which was held to end the Crimean War and resulted in the Treaty of Paris in 1856. One may agree with Derek Hopwood that the Treaty "was designed to weaken Russia's claims of the right to protect the Turkish Orthodox Christians."¹ The Hatti-Humayun confirmed the rights of the non-Muslims which had first been stated in the Millet² system long before, and later in the decree of 1839.

In fact, the decree of 1839, which appeared in the days of Sultan Abdul Majid and his Grand Vezir, Rashid Pasha, was the first formal document to assert the privileges of protection and autonomy for non-Muslims. It was considered to be one of the fruits of the reforms known as the Tanzimat³ (reorganizations). Although the decree of 1839 was slow to take effect, it, nevertheless, increased European influence. Commenting on the liberal trend of the decree, Professor Albert Hourani points out:

It left the structure of Islamic law formally untouched but in fact aimed at changing the State from an Islamic sultanate to one in which adherents of all religions, would equally be members of the political community, and in which all would share in the sentiments of patriotic loyalty.⁴

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1. Derek Hopwood, Russian Presence in Syria and Palestine 1843 - 1914 (Oxford; Clarendon Press, 1969), P.43.
 2. Millet: is an administrative system which gave non-Muslim communities the right of internal religious autonomy and judicial privileges. It was first granted by Sultan Mohammad the Conqueror in 1453, when the Ottomans were at the height of their power.
 3. Tanzimat: indicate the reforms begun by Sultan Mahmud who destroyed the Janissaries in 1826 and continued up to the end of the nineteenth century.
 4. Albert Hourani, Arabic Thought in the Liberal Age 1798 - 1939 (Oxford; Oxford U.P., 1970), P.47.

Historians believe that both the decree of 1839 and the Hatti-Humayun of 1856 reveal the weakness of the Ottoman Empire which allowed the Europeans to intervene in the affairs. Dr. A.L. Tibawi goes further than many when, in his book - A Modern History of Syria, he refutes the claim made by some historians that the decree of 1839 "was a diplomatic gesture designed more to gain European favour than to introduce genuine reforms".¹ He perhaps errs in overstating the revolutionary nature of the reforms. His attitude towards the reforms and general pro-Ottoman fervour appears similar to that adopted by an obscure Ottoman scholar who defended the reforms in The Times in 1877.²

During the Ottoman rule Syria was divided into *three* provinces: Aleppo, Damascus, *and Lebanon*, each under the rule of a Pasha (Governor). The appointment of the governors and their relationship with their subordinates was, at times, open to corruption. Although absolute rulers in their provinces, as, in theory, the sultan was within the empire, their position could be affected by complaints from noblemen or from the provincial authorities.³

It was in the 1850's that the religious missions supported by France, Britain, Germany, Russia and America began to *expand* their institutions in Syria and Egypt. Their religious activities manifested themselves in erecting schools, chapels, and churches for their communities in villages and towns. Jerusalem and Beirut were the centre of their labours in the fields of education, religion and commerce. British and American missionaries who settled in Syria in the 1840's became the rivals of the Catholic missionaries who were already influential in the area. Dr. Tibawi states that: "The camps, the Catholic and Protestant, viewed each other with intense hostility, and they were bound to be rivals."⁴

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1. A.L. Tibawi, A Modern History of Syria (Edinburgh: R. & R. Clark Ltd., 1969), P.94.
 2. Thamarat al-Funun (25 January, 1877), P.2.
 3. One may refer to those who are interested in the provincial structure of government to Tibawi's A Modern History of Syria which is very sound on this point.
 4. A.L. Tibawi, A Modern History of Syria, *op. cit.*, P.105.

When the Anglican bishop settled in Jerusalem in 1842, both the Orthodox and the Catholic patriarchs took up residence there only to restrict the Protestant tide which succeeded in converting some of the Orthodox villagers, particularly at Hasbayya. In 1847 - 8, the Catholics and the Orthodox Christians came to blows in the holy places of Jerusalem, particularly at the Church of the Nativity where a bishop was wounded. France, supporting the Catholics and Russia, the Orthodox, were involved in a dispute which contributed to the tensions that led to the Crimean War.

Britain sided with France in an attempt to curtail Russian influence, and in fact, particularly before the occupation of Egypt, came to exercise a dominant influence on the Ottomans. In 1847, for example, British pressure forced the sultan to remove the Ottoman governor of Damascus; on another occasion, the Protestant community of Nazareth, through the help of the British Consulate in Jerusalem, obtained the displacement of the local Qadi (judge) because of his prejudice against the Protestants whose school had been attacked by Catholics. In 1853, Sir Stratford Canning (the British Ambassador) was able to persuade the Ottoman sultan to approve the erection of an independent church for the Protestants. Tibawi bears witness to the significance of British influence, quoting a Syrian chronicler: "The Box was in Istambul but its key was in London."¹

For some historians, the Hatti-Humayun of 1856 which granted privileges to the religious missions in Syria constituted a challenge to the Muslims. On many occasions the Ottoman authorities were forced to yield to Christian pressure. In Aleppo, for instance, an armed Catholic challenged Muslims in the Bazaar; in Nabulus, an English

1. Ibid., P.89.

missionary, accidentally or perhaps on purpose, killed a Muslim beggar; and in Damascus similar tensions developed between the Christians and the Muslims. Such tensions reached their climax in the Civil War¹ in Lebanon between the Maronites and the Druzes in 1860. The causes of this militant conflict might go back to the first clash between the two camps in 1841 which resulted in the disarmament of the Druzes by the evacuating Egyptians from Syria. Besides, the murder of the Druze chief, Bashir Janbulat,² by the Ottoman governor of Sidon was ascribed to the increasing Maronite influence which manifested itself in the fields of political power and finance. The war was ended by the intervention of the French troops according to an agreement ratified by the Ottoman authorities in the hope of restoring order in Lebanon.³ Both the French and the Ottoman governor, Fulad Pasha, acted in the Christian interest. Several Druze notables, for example, were sentenced to death or forced into exile.

Commenting on the history of the War, Dr. Tibawi points out that:

Most of the accounts of the war were written by Lebanese Christians or by other Christians in sympathy with them. In these accounts the Druzes and the Ottoman authorities were always condemned unheard; the former as murderous aggressors, the latter as conniver and even participants. Some accounts even accuse 'the British government' of being the accomplice of the Druzes.⁴

It seems that Dr. Tibawi himself sympathizes with the Muslim view of events. While he says that his study of the 1860 massacre made no value judgements we find that his choice of quotations and documents is selective and characterized by anti-Christian bias. It must be acknowledged though that the Christian Arab historians exhibit a corresponding bias. One rarely

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1. Perhaps history has a way of repeating itself, for at the time of writing this part of my thesis another Civil War is taking place because of differences in religion and ideology.
 2. Similarly, Kamal Junblat, a Druze chief, has been murdered in the recent Civil War (1975).
 3. Similar circumstances in the Lebanon led to the intervention of the Syrian troops in 1975, probably with different intentions.
 4. A.L. Tibawi, A Modern History of Syria, op. cit., P.124.

finds objectivity in such cases where historical tensions continue to prevail. But I should admit that Professor Hourani's scholarly attitude towards Arabic history and thought is probably the most sound.

II. SOCIETIES OF ARTS AND SCIENCES IN SYRIA

Having presented a historical profile, one would like, before speaking of the developments which preceded the impact of scientific naturalism, to differentiate between the so-called literary movement and scientific literature as mentioned in this study. The former deals with the revival of interest in Arabic language and classical literature which is attributed to the earlier generations of nineteenth century writers. The identity of the founders of this revival is still a matter of controversy. Unfortunately, the majority of the authors who wrote about this movement were, more or less, biased; some of them ascribe it to the Protestant mission, others to the Jesuit mission, and others still to Christian Arabs, excluding Muslims. By scientific literature we mean to indicate the Arabic literature which tackled the scientific thought of the West in the second half of the nineteenth century, and which we have termed 'Scientific Naturalism' in this study. Objectively speaking, the appearance of this scientific literature can be fairly ascribed to the combined efforts of the foreign missionaries as well as to the native contributors, Christians and Muslims. In general terms, it is reasonable to accept the claim that the foreign missionaries, particularly the Protestants, were the precursors who introduced scientific literature to the Arab World in the second half of the nineteenth century. An account of the scientific activities of the missionaries and their institutions will allow this claim to be assessed.

As a direct result of the early missionary activities in the 1850's, two literary societies appeared: The Oriental Society, which was founded by the Jesuit mission in 1850; and the Syrian Scientific Society, which was

established by the Protestant mission in 1857. Their predecessor was The Society of Arts and Sciences which was proposed by two men of letters, Butrus al-Bustani and Nasif al-Yaziji, who were considered to be the founders of the literary movement in the nineteenth century. This, the earliest society in the Arab World, was founded in 1847 and only Christian Arabs and aliens could become members. It lasted for five years and its literary activities appeared in a volume edited by Butrus al-Bustani, who was the secretary of the Society.

The Oriental Society also consisted of native Christians and foreigners. The members used to read papers on different subjects in their meetings. It disappeared before the Syrian Scientific Society came into being. This scientific society has been given much importance by historians perhaps for two reasons: firstly it contained a large number of aliens, Christians, and Muslims; and secondly, it embraced the most distinguished men of letters and thinkers of the period in both the Arab world and Turkey as well. It aimed to revive the historic Arab contribution to the sciences and arts, and at the assimilation of that literature by the young in their schools. Although its activities ceased for a period, particularly during the Civil War, it was re-established in 1868 and gained official recognition. Its first president was the Druze Amir M. Arslan and the second was Husayn Bayhum, who was a high official, a man of letters who had made very little contribution to literature. Philip Hitti says that this Society published papers and articles written by the members on literature, science, industry, and agriculture, in a monthly pamphlet entitled Majmu'at al-'Ulūm wa'l Funūn (a collection of arts and sciences).¹

1. Philip K. Hitti, Lebanon in History (New York: St. Martin Press, 1957), P. 461.

Although the significance of such societies lies in their literary achievement, we cannot remain indifferent to their political aspect. Perhaps, it is difficult to separate free thought from its political and social involvements. It seems that the contributions of the Syrian Scientific Society were directed towards political gains rather than to literary or scientific advancement, and it must be admitted that most of the historians, perhaps naturally, have concentrated on this aspect.

III. THE SYRIAN PROTESTANT AND THE JESUIT COLLEGES IN BEIRUT

For the purpose of tracing the development of scientific literature in the Arab world, it is essential to know something of its original sources: the Syrian Protestant College which belonged to the American mission, and the Jesuit College of the French mission.

While Dr. Tibawi points out that the establishment of the Syrian Protestant College¹ was the result of Catholic superiority, whose mission "had at least five times as many pupils in their schools as had the Americans",² George Antonius asserts that: "By 1860 they (the Americans) had established thirty three schools attended by approximately one thousand pupils, of whom nearly one fifth were girls."³

The idea of establishing a high institution in Beirut emerged from the competition between the two camps and it was the creation of the Syrian Protestant College which crowned the Protestant labours.

The history of the College was related in the Muqtataf in 1878. No doubt, the author was Ya'qūb Sarrūf, the editor of the periodical. Sarrūf stated that the notion of founding a college for higher studies, similar to those in Europe, was Daniel Bliss's. It was at the annual

1. It is literally called the "Syrian Evangelical College".

2. A.L. Tibawi, A Modern History of Syria, op. cit., P.142.

3. George Antonius, The Arab Awakening (London: Hamish & Hamilton, 1938), P.42.

meeting of the American mission which was held in Beirut in 1862 that a decision was taken to locate that college. Thus Bliss was sent to America to make arrangements and seek financial contributions for the establishment of this institution. He also went to England to explain his project and look for aid there. The project became a reality within four years and the Syrian Protestant College was opened on the 3rd December, 1866, to receive only sixteen students, as both Antonius and Tibawi asserted while Ya'qūb Sarrūf stated that there were nearly twenty, of whom only four completed the four year course. None of the authors refers to the identity of the earlier graduates, or mentions whether any of them achieved anything of value in the scientific sphere. We are informed, however, that the staff consisted of Dr. Daniel Bliss, President, John Frazer and D. Stuart teaching English, Nasif Yaziji, a native Christian and a well-known poet, for Arabic, and As'ad Shadudi, a native tutor for mathematics.¹

The College taught medicine in 1867 and the staff contained Dr. Cornelius van Dyck, Dr. John Wortabet, Dr. George Post, David Stuart Dodge, Edwin Lewis, and others. Biographical notes for some of these men who participated in the exposition of scientific movement will be given later. The College was mostly staffed by missionaries for a long time. Although it was apparently a liberal college, its principal aims were the dissemination of Protestant teachings and the training of future preachers.² Other objectives can be identified in a letter dated 1863 and quoted by

1. al-Muqtataf (1878), vol.iii, P.114.

2. These aims can be seen in the Reminiscences of Daniel Bliss, its president from 1866 - 1902: "This College," he said, "is for all conditions and classes of men without regard to colour, nationality, race or religion. A man white, black, or yellow; Christian, Jew, Mohammedan or heathen, may enter and enjoy all the advantages of this institution for three, four or eight years; and go out believing in one God, in many Gods, or in no God. But it will be impossible for any one to continue with us long without knowing what we believe to be the truth and our reasons for that belief." Quoted in Philip Hitti, op. cit., P.454.

Tibawi, in which Henry Jessup, obviously later a lecturer at the College, wrote that the College:

Will train up authors and teachers in their rich and eloquent language, and open the door for giving to the Arab race the treasures of literature, science, art, and religion, which are stored in the European languages, and help repay the East for its¹ contributions to the revival of letters in Europe in centuries past.

Thus, the introduction of Protestantism and Western science were the two aims of the College, the first manifested itself in a conflict with the Catholics over the Arabic translation of the Bible,² and the second appeared in the impact of scientific naturalism, the theme of my investigation.

The curriculum of the College included secular subjects such as mathematics, natural history, physics, physiology, anatomy, chemistry, and astronomy, as well as modern languages, English and French, and the Arabic language, and literature. Religious studies were included in the "moral sciences and Biblical literature" which were "conducted on strictly Protestant and Evangelical principles."³ Apart from the English contributions, the American mission was keen to keep the College under American control. The earliest books on secular subjects appeared a few years after the opening of the College. For instance, in 1869 Cornelius van Dyck published 'Uṣūl al-Kīmyā' (the principles of chemistry); George Post published two books, the first was on natural history entitled 'Nizām al-Ḥalaqāt fi Silsilat Dhawāt al-Fiqrāt' (the hierarchical system in the chain of the vertebrates) in 1869, and the second was on botany and entitled 'Mabādi' 'Ilm an-Nabāt' (the principles of botany) in 1871. His botanic collection is still preserved at the American University of Beirut, and his work entitled 'Flora of Syria, Palestine and Sinai'^{appeared} in 1883. "This

1. Quoted in A.L. Tibawi, American Interests in Syria 1800 - 1901, op. cit., (1966), P.168.

2. al-Kitāb al-Muqaddas (the Holy Bible) was translated from Hebrew, Chaldee, and Greek into Arabic by E. Smith and Cornelius van Dyck (Oxford, 1869).

3. A.L. Tibawi, American Interests, op. cit., p.169.

work," wrote L.M. Sa'di, "to which Dr. Post devoted the best years of his life, is his most important scientific contribution."¹ A book on natural history anonymously appeared in 1873. It was entitled al-‘Arūs al-Badī‘a fi ‘Ilm at-Ṭabī‘a (the *admirable* bride in natural history). It has been suggested by Dr. Tibawi that this book was written by As‘ad Shadudī, the native tutor of mathematics at the Syrian College at the time. The second work of the kind was published by Ellen Jackson in 1881. It was entitled ad-Durūs al-Awwaliyya fi al-Falsafa at-Ṭabī‘iyya (primary lessons in natural philosophy). In the preface to the book Ellen Jackson acknowledges the help of both Faris Nimr and Shadudī. Ya‘qūb Ṣarrūf was the tutor of natural history at the College and his contribution to the spread of the natural sciences was invaluable. Daniel Bliss with the assistance of Ibrāhīm Hourānī² produced a book on rational philosophy entitled ad-Durūs al-Awwaliyya fi al-Falsafa al-‘Aqliyya (primary lessons in rational philosophy) in 1874.

In his article on the history of the College, mentioned above, Ṣarrūf pointed to the scientific contributions of those lecturers and to the value of their scientific collections. He asserted that Edwin Lewis' collection of fossils and shells was so famous that it was recommended by German scholars to leading researchers in geology at the time (1870's). George Post's collection of Syrian plants, he added, was especially noteworthy. Moreover, there was a good collection available for the study of natural history.

The College, to some authors, played a great part in the revival of the literary movement in the Arab world, others would disagree.

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1. "The Life and Works of George Edward Post (1838 - 1909)", L.M. Sa'di, Isis, XXVIII (2), P.411.
 2. Ibrahim Hourani was the editor of an-Nashrah al-Isbū‘iyya, a magazine which was published under the auspices of the Syrian Protestant College. Nadia Farag, al-Muqtataf 1876 - 1900: A Study of the Influence of Victorian Thought on Modern Arabic Thought, a Ph.D. thesis which was submitted to the University of Oxford in 1969, P.268.

It is worth quoting one of the first group, George Antonius, one of many Lebanese Christians within its ranks, who wrote:

When account is taken of its contribution to the diffusion of knowledge, of the impetus it gave to literature and science, and of the achievement of its graduates, it may justly be said that its influence on the Arab revival, at any rate in its earlier stage, was greater than that of any other institution.¹

Antonius attributes the literary revival to the work of Americans and to the graduates of the Syrian College, while others, such as Tibawi, refute this notion and show that the native Christians and Muslims, and the native institutions worked side by side with the Syrian Protestant College to revive Arabic literature. Tibawi claims that there is no evidence at all, until 1876, to support the contentions of the Lebanese authors. He argues that the early generation of Arab writers such as Buṭrus al-Bustāni, Naṣif al-Yāzījī, and Faris Shidyāq were educated in native schools; Bustani and Yaziji helped the Americans in the translation of the Bible; Yaziji, who learnt the Quran by heart, was a writer of the classical school; and Shidyāq, a convert to Islam, settled in Istanbul as an editor of the newspaper: aj-Jawā'ib (Replies) until his death in 1887. Perhaps Tibawi is correct with regard to the literary movement which came into being in the 1850's, but it remains true that scientific literature did not begin to appear in the periodicals until the 1870's when two of the Syrian Protestant College graduates, Ya'qūb Ṣarrūf and Faris Nimr launched their periodical, Al-Muṣtataf (Excerpts), to give an impetus to scientific thought in the Arab world.

The Jesuit school at Ghazir, near Beirut, which was established by the Catholic mission in 1844, was the most important among the many institutions which were scattered across Syria. It was a secondary school which attained a high standard in teaching modern languages

1. George Antonius, The Arab Awakening, op. cit., P.43.

such as French, English, and Italian besides some secular subjects. This school was transferred to Beirut and became the Jesuit College in 1875. The College had a missionary character and taught all subjects in French. Afterwards, the Department of Arabic was founded with a first class staff containing brilliant orientalists and native men of letters, in order to challenge the supremacy of the Protestant College. Its printing press reflected the Catholic antagonism towards the Protestants, as is indicated by the publication of religious polemics in the Bashir, a sectarian periodical. In 1883, the Departments of Medicine and Pharmacy were opened, and annual financial aid was credited to them by the French Ministry of Education. In 1913, the Departments of Law and Engineering were founded with the help of the French University of Lyon. Other departments - like Dentistry - appeared later. The more valuable products of its printing press began to appear in the early twentieth century, when it was engaged in the publication of literary and scientific works. Philip K. Hitti, the Lebanese scholar of Semitic literature at Princeton University, points out that:

Alongside the faculties of philosophy and theology, there grew at the beginning of the twentieth century a faculty of Oriental studies which amassed one of the richest collections of library material and engaged in research and publication on a scale and according to a scholarly level unknown in the Orient.¹

In 1898, the Jesuits launches a periodical called al-Mashriq (the East). It was a fortnightly review for the sciences, literature, and arts, which was edited by Father Louis Shaykhe, a distinguished man of letters. No doubt, the main interest of the periodical was religious and particularly concerned with the defence of Catholic doctrines. It seemed to compete with both al-Muqtataf and al-Hilal which more or less represented the Protestant view, and with which it came into conflict.²

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1. Philip K. Hitti, Lebanon in History, op. cit., (1957), P.453.
 2. See, for example, Father Louis Shaykhe's article "al-Muqtataf and the Old Testament", al-Mashriq, vol.iii, (1900), pp. 800 - 804; "Adam, the Father of Mankind", vol.iii. (1900), pp. 1130 - 1132. In the latter article Shaykhe attacks Jurji Zaydan, the editor of the Hilal.

Thus the two University Colleges of Beirut, their presses, their various affiliations, the controversies conducted by their professors and graduates in terms of revealed religion and scientific doctrines remind us of the conflict between science and theology within the Universities of Oxford and Cambridge.

IV. THE PIONEERS OF SCIENTIFIC NATURALISM IN SYRIA

A biographical sketch of the contributors, Westerners as well as Arabs, who were involved in the impact of scientific naturalism in Syria may show how far they were associated with the movement.

Cornelius Van Dyck was born in Kinderhook, New York, in 1818. He studied medicine in Philadelphia and came to Beirut in 1840. After acquiring a good standard of Arabic in Beirut, he was sent to Sidon in order to establish a missionary station "with jurisdiction over Hasbaya and vicinity".¹ Dr. A.L. Tibawi refers to Van Dyck's earlier religious activities and his book of sermons entitled: As-Sahm at-Tayyār Wa'l Fakhkh al-Qarrār li Tawqiyat al-Kurūm min ath-Tha'ālib as-Sighār, which was published in 1864. Commenting on the work, Dr. Tibawi points out that: "Apart from a deceptive title", it was written "in a rather uneven style."² He explains that Van Dyck in his sermons warned the Christians of ten sins - like envy and obstinacy - which he called "little foxes".

George Antonius' attitude to Van Dyck is a very sympathetic one. For him, Van Dyck, "of all the foreigners who came to work in Syria in the nineteenth century, ... entered more intimately into the life of the people than any other. So far as the power of example went, his was

1. A.L. Tibawi, American Interests in Syria, op. cit., P.130.

2. Ibid., P.166.

probably the most valuable and effective single influence ever exerted by a foreigner in the cultural development of the country."¹ Perhaps Van Dyck's integration is most apparent in his attitude over two incidents: firstly, arguing in favour of the Arabic language in the discussion over changing the medium of teaching from Arabic into English at the Syrian College in the academic year 1879, secondly, in supporting the Arab students who were dismissed because they took sides with their teacher Edwin Lewis in his conflict with the Board of the College on Darwinism. Perhaps Van Dyck preferred Arabic to English because of his remarkable mastery of the language compared to that of his colleagues who stressed English as the language of instruction. Referring to Van Dyck's acquisition of Arabic, Tibawi points out: "After nearly thirty years in Syria, he had acquired a remarkable facility in spoken and written Arabic."² At this time Van Dyck published a book entitled 'Uṣūl al-Kīmīyā' (The Principles of Chemistry) in 1869. Five years later, he published two textbooks: the first on astronomy entitled 'Uṣūl al-Hay'a (The Principles of Astronomy); and the second on diagnosis called at-Tashkhiṣ at-Tabī'ī (The Physical Diagnosis).³

According to Hourani's view, Van Dyck "provided the Syrian Protestant College with many textbooks explaining the modern sciences in a clear and correct Arabic."⁴ Cornelius Van Dyck died in Beirut in 1895 after spending nearly half a century in Syria. His son William Van Dyck was also a lecturer of zoology at the Syrian College. The son's paper on the street dogs of Beirut was prefaced by Charles Darwin himself and was read at the Zoological Society on 18th April 1882, a day before Darwin's death.⁵ The paper was published in the Proceedings of the

1. George Antonius, The Arab Awakening, *op. cit.*, P.48 fn.

2. A.L. Tibawi, American Interests in Syria, *op. cit.*, P.185.

3. For further information I refer the reader to Lutfi M. Sa'di's substantial article entitled "al-Hakim Cornelius Van Alen Van Dyck (1818 - 1895)", Isis, 27 (1937), pp. 20 - 45.

4. Albert Hourani, Arabic Thought in the Liberal Age, *op. cit.*, P.223.

5. Francis Darwin, The Life and Letters of Charles Darwin (1887), vol.iii., P.253.

Zoological Society of London for 1882.

Ya'qūb Ṣarrūf: was born in Al-Ḥadath near Beirut in 1852. He was a Christian Arab who graduated from the Syrian Protestant College in 1870. His earlier career was spent teaching in the schools of Sidon, Tripoli, and Beirut. He was distinguished in philosophy, mathematics, and literature. In 1876, he and Faris Nimr founded the periodical al-Muqtataf which was to become one of the most well-known Arabic journals of the time. Apart from being a tutor at the Syrian College, Ṣarrūf's work as an editor for more than forty years was immense. He was also a co-editor of the Muqaṭṭam newspaper in Cairo in 1889.

Ṣarrūf wrote many books on which the following were perhaps the most famous: Sir an-Najāh (1922), a translation of Samuel Smiles' book Self-Help; Wasā'it 'Ilm al-Falak (the Means of Astronomy); al-Ḥarb al-Muqaddasa, a translation of Bunyan's Holy War.¹ Ṣarrūf's many articles on natural history revealed his interest in this subject and in philosophy as well. He was a tutor of Natural History and Mathematics in the Syrian Protestant College. His comparative studies of some Arab and European writers are worth noting. al-Ma'rri, a blind poet and philosopher, was compared to Milton; Ibn Khaldūn, perhaps the only Arab sociologist, to Spencer; and Saladdin to Richard the Lion-Heart. He wrote about twenty novels including The Maid of al-Fayyūm (1908), The Maid of Egypt (1922), and The Prince of Lebanon (1907). He was described by Khalīl Thābet in an article which appeared in the Muqtataf as an investigator and scholar who added to the richness of Arabic a vocabulary of scientific terms which he himself created or dug up from the old treasures of the language.²

1. Nadia Farag, *op. cit.*, P.145. In her doctoral thesis (1969) Farag has given a list of Ṣarrūf's works and the dates of their publication (P.539), while Zirkili, like most traditional authors, cares little for the dates of publications.

2. al-Muqtataf, vol. 71 (1947), P.192.

Fáris Nimr was born at Hasbayya, Lebanon, in 1856. When his father was killed in the Civil War between the Christians and the Druzes in 1860, he was taken to Jerusalem and Beirut where he attended English schools. He graduated from the Syrian Protestant College in 1874, and afterwards, was appointed as an assistant to Cornelius Van Dyck in the observatory, and later as a tutor in Astronomy. Most English translations which appeared in the Muqtataf were made by both Nimr and Sarruf. Nimr also translated a book in meteorology entitled az-Zawāhir aj-Jawwiyya (The Meteorological Phenomena) in 1876. In 1883, Nimr and Şarrūf were indirectly forced to resign by the Board of Trustees, probably because they were involved in the 'Lewis affair'. In the 1890's, both Nimr and Şarrūf were granted the degree of Doctor of Philosophy by the American College of Beirut. Nimr joined Şarrūf in the translation of Siyar al-Abtāl wa'l 'Uzamā' (Biographies of Heroes and Great Men), and of Mashāhīr al-'Ulamā' (Famous Scientists). He wrote many articles on the theories of geology and astronomy. He was - like Şarrūf - an advocate of natural theology. He rejected materialistic philosophy, as is revealed in his articles. He was the co-editor of the Muqtataf from 1876, the date of its appearance, till 1889 when he became the sole editor of the Muqattam newspaper.

Shibli Shumayyil was born in Kafar Shima, a village in Lebanon, in 1853. He was a physician and a graduate of the Syrian College. He spent a year in France and settled in Cairo where he practised his profession. He was the editor of a journal called Ash-Shifā' (Remedy) from 1886 to 1891. His several articles on western thought, particularly on the theories of evolution, appeared in many periodicals in both Syria and Egypt. They were published in a book entitled Falsafat an-Nushū' wa'l- Irtiqā' (The Philosophy of Evolution and Progress) which was edited by him and financed by the Syrians who suggested the idea and supported

it, as he himself mentioned in the Majmū'at Shibli Shumayyil¹ (The Collected Writings of Dr. Sh. Shumayyil). He translated, with some adaptations, Ludwig Büchner's elucidation of Darwinism. He edited, with commentaries and explanations, two medical works: the Arabic version of "Tracts of Epicurus" and "Avicenna's Verses". His philosophical tendencies, revealed in his arguments on scientific naturalism, were entirely materialistic. In fact, he was the only writer who publicly dared to explain the materialistic point of view in the Arab World at a time when none had the courage even to allude to it. Although he was not a poet, he used to write verses in support of his views because poetry was regarded as superior to prose as well as being an impressive literary form. For him, science was a religion.

Bishāra Zalzal's birthdate is unknown. By profession he was a physician who graduated from the Syrian College. He was born in Lebanon and settled in Egypt where he was a co-editor of a journal called al-Bayān for a short period. His articles on the natural history of man appeared in the earliest years of the Muqtataf. He wrote a commentary entitled Takmilat ad-Hadīth fi al-Qadīm wa'l-Hadīth (The Last Word on the Old and New Medicine) on a medical book written by Ibn Butlan entitled Da'wat al-Atibbā' (The Claim of Physicians). His writing in biology was collected in a book entitled Tanwīr al-Adhhān fi 'Ilm Hayāt al-Haywān wa'l-Insān wa Tafāwut al-Umam fi al-Madaniyyah wa'l-'Umrān (The Illumination of Minds in the Biology of Man and the Animal and the Differences of Nations in Civilization and Culture) which was published in 1297 A.H. He died in 1905.

Jurji Zaydān was born in Beirut in 1861, and was partly educated at the Syrian Protestant College. Afterwards, he went to Cairo where he established a review called al-Hilāl (The Crescent) in 1892.

1. Shibli Shumayyil, Majmu'at Shibli Shumayyil: Falsafat an-Nushu' wa'l Irtiqa' (Cairo, the Muqtataf Press, 1910), vol. ii. "Acknowledgement", P. 3, the last pages of the book. Hereafter cited as Majmū'a.

He was a well-known historian in the Arab World in the late nineteenth century. He wrote twenty two historical novels, besides his works on ancient Egypt, the Pre-Islamic Arabs, and Islamic civilization. His interest in language manifested itself in his works: *The History of Arabic* (*Tarikh al-Lughah al-'Arabiyyah*), and the *Linguistic Philosophy* (*Al-Falsafa al-Lughawiyya*). He died in 1914. His contribution to scientific naturalism appeared in several articles, particularly on morality.

Farah Antūn was born in Tripoli, Syria, in 1874. He went to Alexandria, in Egypt, where he produced his review called al-Jāmi'a (*The Collector*) in 1899. In this periodical he presented the French point of view towards religion, particularly Ernest Renan's attitude towards Islam. Antūn's articles on IbnRushd (Averroës) which appeared in the review were based on Renan's arguments concerning Averroës. Antun translated Renan's Vie de Jésus into Arabic. His free thought resulted in a controversy with two Muslim writers, Muḥammad 'Abduh and M. Rashid Rida, and ended in hostility and Antun's leaving for America. As a result of this conflict, Muḥammad 'Abduh wrote a treatise on Islam and Christianity.¹ An account of this controversy will be discussed later. Antūn died in 1922.

V. EGYPT IN THE MID-NINETEENTH CENTURY

Egypt was conquered by the Turkish Sultan Salim I in 1517 and remained under Ottoman rule until 1882, the date of the British occupation. Pashas were sent as governors till the appearance of the

1. al-Islam wa'n Nasrāniyyah m'a'l-'ilm wa'l-Madaniyyah (*The Attitude of Islam and Christianity towards Science and Civilization*). This work consists of many articles which originally appeared in the *Manār*, an Egyptian review which presented the views of the Islamic modernists, as a reply to Farah Antun's treatment of the Arab philosopher, Averroës, which appeared in the latter's own periodical al-Jāmi'ah which often exhibited Western ideas. I should take the opportunity here to acknowledge my debt to Professor Albert Hourani who recommended the translation of 'Abduh's book on which I am now working, together with some of Antun's articles which initiated the conflict between the two writers.

Khedive family. Muhammad 'Ali, who was an Albanian soldier, from Cavalla, in Macedonia, in the Turkish army when Napoleon occupied Egypt in 1798, came to power in 1805. After the defeat of Napoleon at Acre, by Ahmad Pasha aj-Jazzār and the withdrawal of the French army from Egypt in 1801, Muhammad Ali was recognized by the Ottoman Sultan as the governor of Egypt. The Egyptian occupation of Syria began in 1830 and lasted until 1841, during which time Syria saw some order and tranquility regarding her religious and social differences. After a long conflict, Muhammad 'Ali arrived at an agreement with the Sultan and his European allies which allowed him to establish his dynasty in Egypt provided that he withdrew from Syria. From 1841 until his death in 1849, he initiated many reforms and Egypt was peaceful. He recognized that progress was being made in Europe in many fields, but he was interested only in those which would sustain his authority- military development- and economic power. His interest in the former was demonstrated by the number of military missions which were sent to Europe, particularly to France, to learn war techniques; and the latter manifested itself in Muhammad 'Ali's agrarian reforms and his monopoly of properties. He paid no attention to liberal thought, though he established some institutions. Recommended by his teacher Hasan al-'Aṭṭar, an eminent scholar at the Azhar University, Rifā'a at-Taḥṭāwi was sent by Muhammad 'Ali as a religious preacher (Imām) on a military mission in Paris. Coming back to Egypt after five years, Taḥṭāwi put forward a number of liberal views concerning the significance of science and philosophy in building up the civilization of nations. An account of his contributions will be given later as he represents the earlier generation of the writers who introduced modern thought into Egypt.

From 1849 to 1863, three of the Khedive dynasty came to power. The first was 'Abbās, Muhammad 'Ali's grandson, whose reign ended in his assassination in 1854. Sa'id was the second ruler and was succeeded by Isma'il in 1860. The cotton boom of the 1860's brought prosperity,

and this showed itself in the luxurious buildings, statues, gardens, roads, monuments, and the Opera House, which were erected in Isma'īl's reign. But his schemes for the Suez Canal, Alexandria Port, and many institutions, left him in debt to British and French companies, and the subsequent financial wreck of Egypt resulted in his fall, and, a few years later, in the British occupation of the country. Lord Cromer claimed that he set himself to struggle for the stability and progress of Egypt. In his book Modern Egypt, Lord Cromer wrote: "It was not until 1890 that the Financial Department found itself in a position to increase the sum of money spent by the State on education to £E.81.000."¹

Speaking of the reforms of the Khedive period, Professor Hourani points out that: "Muhammad Ali and his successors had tried to reform Egypt by planting European institutions and laws in her soil."² Mixed courts of Egyptians and foreigners were set up in Cairo and Alexandria in the days of Ismā'īl.

Of the educational system in Egypt, Professor Hourani says that there were two kinds of schools, the religious which taught only religion to the exclusion of all other subjects, and the modern schools, established by the government or by foreign missions, which taught practical subjects such as modern languages and sciences in addition to Christianity in the missionary schools. The government schools also possessed a modern curriculum which gave scant regard to religion. Differentiating between the two types of schools, Hourani explains that while: "the religious schools suffered from stagnation and slavish imitations, the characteristic ills of traditional Islam,... the mission schools, whether consciously or not, brought their pupils near the religion of the teachers."³ This difference in education resulted in the creation of two distinct social classes

1. Lord Cromer, Modern Egypt (London: Macmillan, 1911), P.875. A review of the book appears in the Thamarāt al-Funūn (17 Aug., 1908).

2. Albert Hourani, Arabic Thought, op. cit., (1870), P.137.

3. Ibid., P.137.

in Egypt: those who resisted all liberal thought or scientific progress; and those who unhesitatingly accepted Western culture. This controversy between the old and new doctrines largely appeared in the last decades of the nineteenth century.

The Khedive Ismā'īl recognized the significance of education if the nation were to progress. Unlike his grandfather whose main interest was in military strength, Ismā'īl was the first of the dynasty to separate the educational administration from the Department of War. Many schools were built and many students were sent to Europe. M. Rifā'a Bey wrote that: "Arithmetic appeared for the first time as a subject, to be learnt with the Kuran, in elementary schools in 1868."¹ He stated that Sanieh, Khedive Ismā'īl's third wife, opened the first school for girls in Egypt in 1873. A national library was also established by Ismā'īl to form a depository for the many books abandoned in the mosques. The Bulaq Printing Press was provided with new machinery and a paper factory, and a few newspapers began to appear. Ismā'īl's attitude towards educational projects was generous and he donated money and land to the missionary schools as well as to the native private ones. The majority of the historians who wrote about Egypt in, and after, the nineteenth century, mainly attributed its movement towards a modern outlook to the Khedive Ismā'īl, although many appreciated the, perhaps less direct, effects of Muḥammad 'Alī's efforts.

Lord Cromer ascribed the intellectual awakening in Egypt to the British occupation and appreciated Muḥammad 'Alī's evaluation of the European mind. Commenting on the mentality of the educational authority, Ya'qūb Artīn Pasha, in the earlier years of the British occupation, Lord

1. M. Rifā'a Bey, The Awakening of Modern Egypt (London: Longman's, Green & Co., 1947), P.123.

Cromer said that Artin Pasha held that:

Sciences cannot be learnt save in those languages which possess a scientific literature and vocabulary. Yet the Pasha, under the influence of prejudices which his powers of reasoning were too feeble to stem, declared that a science, which could not be taught in Arabic, should not be taught at all.

One is perhaps more inclined to agree with the Pasha than with Lord Cromer for as Professor F.S. Kennedy, one of the editors of the Journal for the History of Arabic Science and a former Professor of Mathematics at the A.U.B., in some informal comments to me, has pointed out: "an extremely interesting quotation, more demonstrative of the noble Lord Cromer's prejudices than anything else. Personally, I agree with the Pasha."

Since Lord Cromer's plan to educate the Egyptians was based on T.P. Hughes' concept of the educational system of Islam which the former quoted as: "The chief aim and object of education in Islam is to obtain a knowledge of the religion of Muhammad, and anything beyond this is considered superfluous and even dangerous,"² therefore, it was reasonable for Lord Cromer to keep the educational system of the Azhar untouched and begin the reform in the elementary schools. Moreover, he found that Islam formed an obstacle to the introduction of Western sciences, basing his conclusion on the inferior position of women and the general indifference to their learning. Such a conclusion is a tenable one. In fact, Lord Cromer's attempts in the 1890's to introduce secular subjects in elementary schools bore no fruit till the early decades of the twentieth century.

VI. THE AZHAR AND SECULAR LEARNING

It is perhaps appropriate here to give an idea about the Azhar, as the highest Islamic academy, and its graduates who played a significant part in introducing secular reform and scientific thought.

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1. Lord Cromer, op. cit., P.876.
 2. Ibid., P.878. Quoted from T.P. Hughes, Dictionary of Islam (London: W.H. Allen & Co., 1895), P.106.

It may help to further illustrate the scientific impact made by Muslim thinkers, such as Jamāl ad-Dīn al-Afghāni, Muḥammad ‘Abduh, ‘Abbās Maḥmūd al-‘Aqqād, Ismā‘īl Mazhar, and Salāma Mūsā in Egypt.

The Azhar¹ was a mosque built by Jawhar al-Kātib as-Ṣiqḥībi of the Fatimids who occupied Egypt in 972. It flourished as a mosque and an educational centre in the days of al-Malik az-Zāhir Baybars in the thirteenth century. It was given attention neither in the days of Bonaparte's expedition, nor in the days of Muḥammad ‘Ali, for it was difficult to find a compromise between Western thought and Azhar teaching at that period.

The significance of the Azhar as an institution lies in the many nationalities of the students who attended the religious studies. A list of these nationalities has been given by J. Jomier in the Encyclopaedia of Islam.² The curriculum of the Azhar was devoted to theology, Hadith (Tradition), jurisprudence, philology, rhetoric, grammar, and Fiqh (Islamic law).

J. Jomier pointed out in the Encyclopaedia that the Azhar at the beginning of the nineteenth century: "could well have been called a religious university."³ But reforms appeared in the second half of the century at the instigation of Muḥammad ‘Abduh who became a lecturer at the Azhar after his graduation in 1877. Even before Muḥammad ‘Abduh's attempts, Dār al-‘Ulūm (The House of Sciences) was founded in 1873 to provide the graduates with the knowledge of modern subjects which had begun to be taught in schools. In 1896, an Administrative Committee was appointed with Muḥammad ‘Abduh at the head, to introduce further

1. My account of the Azhar is mainly based on information given in The Encyclopaedia of Islam, edited by B. Lewis, Ch. Pellat, and J. Schacht (Leiden: Brill, new edition, 1960), vol. i, pp. 813 - 821.

2. The Encyclopaedia of Islam, *op. cit.*, pp. 816 - 818.

3. *Ibid.*, p. 817.

reforms.¹ The Committee initiated some changes in the curriculum and in the methods of examinations. From the first time subjects such as algebra, arithmetic, and geography were included. This was to form, for many Muslim scholars, a significant development. Examinations were taken either after eight years for the diploma of Ahliyya (qualified), or after twelve years, the degree of ‘Ālimiyya (apt to be a scholar). In 1908, three standards of study - primary, secondary, and high - appeared in the Azhar, and in the same year, the free University of Cairo, based on the Western model, came into being.

The Azhar University continued to provide the country with the majority of school teachers and the ‘Ulama (the Muslim clergy) for religious instruction in mosques and high institutions as well as for jurisprudence.

VII. ADVOCATES OF SCIENTIFIC NATURALISM IN EGYPT

Although Jamāl ad-Dīn al-Afghāni was not an Arab, he will be included in this study for two reasons: because of his contributions to Arabic literature which tackled the controversy over scientific naturalism, and because of his influence on the Azhar graduates in introducing rational philosophy to Islamic law (Sharī‘a).

Jamāl ad-Dīn al-Afghāni was born in Asadabad, Iran, in 1838. He went to Kabul where he studied theology, but his main interests were in philosophy and science, particularly mathematics. His first political attempt to maintain a high position in Afghanistan came to nothing. Therefore, he went to Constantinople passing through Egypt in 1870. After less than two years, he was deported by the Ottoman authorities because of a lecture in favour of philosophy. Finding a welcome and a

1. There are many articles about the reforms in the Azhar which appeared in the Thamarāt al-Funūn: 28 Jan. (1895), pp. 2 - 3; 8 June (1896), P.1; 15 June (1896), pp. 1 - 2; 3 Aug. (1896), P.3; 19 Jan. (1903), pp. 2 - 3; 18 Sept. (1905), pp. 3 - 4.

suitable environment for his ambitions in Cairo, he remained there for nearly eight years until he was again expelled by the Khedive Tawfiq, the Egyptian ruler, in 1879 because of his involvement in the political life of the country in the name of religious reform and his influence on the public resulting from the contributions made by his disciples to the local journals which had already been founded by his encouragement. His relationship with Muhammad 'Abduh, the most outstanding figure among his disciples, was closest at this period and culminated in a combined effort in Paris where they issued an Arabic periodical called al-‘Urwa al-wuthqā, (The Indissoluble Link) in 1884. Perhaps the periodical was financed by a secret society of the same name, al-‘Urwa al-wuthqā, for it was distributed free to the members and others. The first issue appeared in March 1884 and the last in October 1884, only eighteen numbers in all were published. The two main interests of the editors were the criticism of the defects of Muslims and the proclamation of pan-Islamism, and the disclosure of European intentions, particularly those of the British, towards the Islamic world.

Jamāl ad-Dīn Afghāni's controversy with Ernest Renan concerning the attitude of Islam towards science occurred during his stay in Paris between 1883 - 1885. His sceptical tendencies were appreciated by Renan, as we shall see. It was in 1885 that he was invited to London through the agency of Wilfrid Scawen Blunt to discuss the political future of Egypt and the Sudan. The negotiations came to nothing. Wilfrid Blunt in his books: The Secret History of the British Occupation of Egypt (1907) and My Diaries (1932) gave an account of the activities and involvements of Afghani and 'Abduh at the time concerned. A portrait of 'Abduh appears on the front page of the American edition of The Secret.¹

1. W.S. Blunt, Secret History of the English Occupation of Egypt, Being a Personal Narrative of Events (New York: Alfred A. Knopf, 1922).

Invited by Shah Nāsir ad-Dīn whom he met in Paris, Afghāni left for Tehran in 1886; but he was later expelled and went to Russia where he stayed for four years during which he secured the Tsar's permission to publish the Quran and some religious books under the auspices of the Muslim community there. Coming back to Persia for a short period, he was invited by Sultan Abdul Hamid to Constantinople in 1891. From this date till his death in 1897, he was kept in "a gilded cage", in Golziher's words, by Sultan Abdul Hamid who was aware of his ambitions and liberal tendencies.

According to Khayr ad-Dīn Zirkilī, Afghāni was a learned man who knew many languages such as Persian, Arabic, Sanskrit; Turkish, French, English,¹ and Russian. Perhaps there is an element of exaggeration in Zirkilī's picture of the man. Afghāni's life was distinguished by wandering and exile. He never belonged to any one nationality, except that of pan-Islamic thought, and his acquaintance with languages may well have been the result of necessity. His contribution to literature was small; only a number of articles published in his own periodical, al-ʿUrwa al-Wuthqā, and in Egypt and London. The London periodical called Ḍiyāʾ al-Khāfiqayn (The Radiance of the two Hemispheres) was a bilingual journal which was established with his encouragement in 1892. Most of his articles dealt with the reform of the Islamic world on political grounds. His treatise ar-Radd ʿala ad-Dahriyīn, in which he refutes naturalism and materialism, was considered the most significant product of his philosophic offerings.

Muḥammad ʿAbduh, as foremost disciple, was born in a village near Ṭanṭa, Egypt, in 1849. He began learning at the Ahmadiya Mosque at Ṭanṭa where the method of teaching was by commenting on the classical Arabic texts. In 1869, he went to the Azhar where he remained

1. Afghāni declared that he had no idea whatever of English. "The Reign of Terror in Persia", The Contemporary Review, vol.61 (1892), P.242.

for eight years. When Afghāni settled in Cairo in 1871, 'Abduh was one of his inseparable companions. 'Abduh's interest in philosophy was crystallized by Afghāni's new interpretations of Quranic Verses at a time when 'Abduh was making a name by writing in local journals. When 'Abduh had his degree which entitled him to be Alim (a scholar), he became a lecturer at the Azhar, afterwards, at Dār al-'Ulūm (the House of Sciences), and the training college for teachers and judges. In this college he taught Ibn Khaldūn's Muqaddima (Prolegomena) which was edited by at-Tahtāwi in 1857. The book deals with Arabic culture and civilization. Hourani says that Muhammad 'Abduh taught in his house a work by Mnskawayh on ethics, an Arabic version of Greek philosophy, and Guizot's History of Civilization in Europe.¹ This choice of books documents 'Abduh's philosophic bent.

The 1870's were not a settled period in Egypt because the Khedive Ismā'īl was in debt to the European banks and companies, and financial pressure brought Khedive Tawfīq to power. Religious stirrings and nationalist outbursts combined to bring in 'Urābi Pasha to the premiership and also led to the British occupation of Egypt in 1882. Tawfiq not only expelled Afghāni but also exiled his disciple 'Abduh to his village because the latter supported his master's political views.

In 1880, 'Abduh was invited by Riaz Pasha to become an editor of the official newspaper, al-Waqā'i' al-Misriyya (Egyptian Events). His systematic work began at this period. His articles on social and political matters proved to be influential with the public. His attitude towards the military leaders, including 'Urabi Pasha was not clear, but Wilfrid Blunt asserted 'Abduh's disapproval of 'Urābi's military approach

1. Albert Hourani, op. cit., (1970), P.132. There is an advertisement concerning the forthcoming translation of Guizot's book by Hanin Khuri, which appears in Thamaratal-Funūn (1877) Nos. 92 (January), 97 (March), P.4. The Arabic title suggested is "at-Tuḥfa al-Adabiyya fi Tārīkh Tamaddun al-Mamālik al-Awrubbiyya".

against the British. 'Abduh consequently changed his attitude towards the British occupation and joined the military leaders and was imprisoned by the British for a time. He was later exiled for more than three years, leaving Egypt for Beirut and, later, for Paris where he joined Afghani in producing the periodical: Al-'Urwa al-Wuthqā, mentioned above. When he visited London, he was introduced by Wilfrid Blunt to the Editor of The Pall Mall Gazette, was interviewed, and went to Brighton to meet Herbert Spencer.¹

In his stay in Beirut, 'Abduh saw, at first hand, what the Christian missions had achieved in the educational field. One may attribute his interest in organizing societies and in establishing Muslim benevolent schools in Egypt and Syria to his experience in Beirut. In 1883, he returned to Cairo and was appointed a judge in the civil court and held this position until his death in 1905. He was also the Muftī of Egypt, the highest religious position in the Islamic country. In this position, 'Abduh could influence the legislative law by giving Fatawā (religious solutions) according to his own interpretations of the holy texts. His views and interpretations proved to be in harmony with the needs of his society and the spirit of the modern age. Apart from his work Risālat at-Tawhīd (The Message of Unitarianism), 'Abduh began a joint commentary on the Quran with Rashīd Riḍā, one of his disciples and later his biographer, but this attempt was not to be completed.

In the early decades of the twentieth century three distinguished Egyptian writers were attracted to scientific naturalism, in particular the theory of evolution. Abbās Mahmūd al-'Aqqād, the most celebrated of the three, was involved in the study of the conflict between science and religion concerning the issues of faith, creation,

1. A.M.al-'Aqqād Cited 'Uthman Amin who stated that 'Abduh translated Spencer's Education into Arabic ('Abcariy al-Islah wa't-Ta'lim al-Imām Muḥammad 'Abduh (1971), p.97) and Nadia Farag , in her doctoral thesis , asserts that 'Abduh "went to England especially to meet Spencer ". N.Farag, op.cit., pp.235-236.

immortality, and man's place in nature.¹ His philosophic arguments and views were largely based on the attitudes of English and American writers towards religious issues. My preliminary observations of Al-'Aqqād's works allow me to suggest that this writer was, more or less, a theologian of the modern school whose origin was rightly seen to be the work of Afghāni and 'Abduh.² 'Aqqād's tendency to rational philosophy appeared in his book: al-Tafkīr Farīdah Islāmiyya (Rationalism is an Islamic Ordinance) in which he exhibited the attitude of Islam towards modern thought, stressing the significance of mind and the consistency of Islam with modern sciences, something which readily reminds us of Muhammad 'Abduh's work: al-Islām wa'n-Nasrāniyya m'a al-'Ilm wa'l-Madaniyya, mentioned above.

Isma'il Mazhar's interest in the scientific theory of evolution appeared in his book Asl al-ARwā', a translation of Darwin's work The Origin of Species. As a result of nearly seven years labour, Mazhar was able to publish the first five chapters of the work in 1918. He added four more chapters to the second edition of the translation in 1928; and the full translation of The Origin appeared in 1964. Mazhar adopted Darwin's theory and defended it against Shibli Shumayyil's materialism and Afghāni's obscurantism. Darwinism, to Mazhar, was consistent with sound reason and religion. He therefore tried to compromise between scientific thought and Islam. With regard to education Mazhar was an Islamic modernist who appreciated the progressive nature of Western science and demanded that Egyptians assimilate it.

The third writer was Salāma Mūsā who claimed, in his work Nazariyat at-Tatawwur was Asl al-Insān (The Theory of Evolution and the Origin of Man) which appeared in 1928, that there had been no original

1. The discussion of religious issues appear in 'Aqqad's books: 'Aqā'id al-Mufakkirīn fi al-Qarn al-'Ishrīn (Philosophers' Beliefs in the 20th Century) (Beirut: Dār al-Kitāb al-'Arabi, 3rd edition, 1969), and al-Insān fi'l Qurān (Man in the Quran) (Beirut, 2nd ed., 1969).
2. 'Aqqād's admiration of these two thinkers is seen in his work: 'Abqariy al-Islāh wa't-Ta'lim al-Imām Muhammad 'Abduh (Beirut: Dar al-Kitabal-'Arabi, 1971).

Arabic exposition of the evolutionary theory, except what had been presented by Shumayyil in the Muqtataf. As far as one can tell neither Mūsā nor his work has been treated by European authors whose main interest is in the secular literature of the Arab world. He is accessible to the non-Arabic speaking reader only through the English translation of his autobiography.¹ Arab authors who have recently dealt with the writer and his works are of two kinds: firstly, those who admire his labours on personal grounds such as Mahmūd al-Sharqāwī,² and secondly, those such as Ghāli Shukrī, who try to associate his free thought with Marxism.³ However, Salama Musa was a free thinker who wanted to apply the concept of evolution to the interests of Egyptian society as opposed to Eastern traditions and religions.

The Iraqi poet, Jamīl Ṣidqī al-Zahāwī, presented the agnostic trend in his poetry, and was closer to materialistic doctrine than to Islam. He believed in 'spontaneous generation' and rejected both divine creation and immortality. Being a poet, Zahāwī never separated himself from the world of images and speculations.

As far as his scientific knowledge is concerned, Zahāwī was indebted to Arabic periodicals, particularly al-Muqtataf which exhibited Western scientific thought to the Arab world. He presented in his poetry theories of evolution, progress, and astronomy, as well as views on creation, immortality, and death. He was unacquainted with any European language, but he mastered Turkish and Persian besides his mother tongue. Although he wrote some poems in Persian and Turkish, his work was mainly in Arabic. He translated the Rubāiyyāt of 'Umar al-Khayyām into Arabic verse, and he himself wrote quatrains in which he presented his imported

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1. The Education of Salāma Mūsā, L.O. Schuman (Leiden: E.J. Brill, 1961) is a translation of Salāma Mūsā's autobiography: Tarbiyat Salāma Mūsā (Cairo: 1st ed., 1947).
 2. M. ash-Sharqāwī, Salāma Mūsā, al-Mufakkir wa'l-Insān (Beirut: Dar al-Ilm, 1963).
 3. Ghāli Shukrī, Salāma Mūsā wa Azmat ad-Damīr al-'Arabī (Sidon: al-Maktaba al-ʿAṣriyyah, 1965).

ideas of European philosophers, notably Gustave le Bon.¹ Critics of az-Zahāwī have been divided into two camps: one appreciated his innovations in Arabic literature, and the other attacks his deviation from traditional themes and structure. The estimation of his poetic and intellectual abilities is still a matter of controversy. Some critics describe him as a philosopher, others consider him as a poet with a capacity for science, and al-‘Aqqād finds no room for him in either category. In his answer to a Tunisian school-master, ‘Aqqād points out that:

az-Zahāwī has a scientific faculty of the highest quality... Nevertheless, the best station for him is between the men of science and the logical analysts, but he does not attain the status of either philosopher or poet.²

Perhaps it is best to regard az-Zahawi as both a scientific and philosophical amateur, in this he bears comparison with some of his European contemporaries, possessed of certain poetic aptitude, that whilst something less than genius, elevates him to the second rank of Arab verse.

Zahāwī can be considered as the disciple of Shumayyil and Ṣarrūf, the masters of natural sciences in the Arab world. But he is closer to Shumayyil's materialistic trend than to Ṣarrūf's natural theology. His hypothesis of a repellant force, as opposed to the theory of gravitation, on which he bases his explanation of the nebular system is very naive and poetic. One may also consider him an agitator - like Afghani - on the grounds of his political and religious contests. His ambition for a high position never waned and found expression in his poems of complaint and frustration. Zahāwī, as a whole, is a modernist in thought, a materialist in belief, and an emancipationist in the field of social relations.

1. ‘Abdul Ḥamīd ar-Rashūdi, az-Zahāwī, Dirāsah wa Nuṣuṣ (Zahawi: A Study and Texts) (Baghdad, 1960), P.295.

2. Ibid., P.221; quoted from ‘Aqqād's book Sa‘āt Bayn al-Kutub.

VIII. SOME ARABIC SCIENTIFIC AND LITERARY PERIODICALS

Printing presses already existed in the Arab World before the American and the Jesuit missions set up their own. Dr. Tibawi maintains that the Būlāq Printing Press which was established by Muḥammad 'Ali in Egypt in the earlier decades of the nineteenth century produced a good number of the Arabic classics which were circulated in Syria during the Egyptian occupation in 1830 to 1840. He also asserts that the product of the missionary presses was entirely religious in nature and did not attract as many readers as did the Egyptian variety of books. He finds no trace of the Arabic classics which were supposed to be printed under the auspices of the foreign missions. For him, the missionary presses were only useful and influential in the last quarter of the nineteenth century. He points out: "It is only when missionary presses began to produce scientific and literary works that their usefulness became more widespread."¹

In 1857, Khālīd al-Khūrī established a press in Beirut and in the next year he issued a journal called Hadīqat al-Akḥbār (The Garden of News). It was the first journal in Syria, which dealt with historical and scientific subjects. In the 1870's, many periodicals and newspapers appeared in the Arab world because of the Ottoman move towards a more liberal regime, the Khedive Ismā'īl's reforms in Egypt, and the encouragement and example of the Syrian literary activity both in Syria and in Egypt. Speaking of the periodicals and newspapers in the last three decades of the nineteenth century, Hourani says that:

For the next thirty years these were to be mainly in the hands of Lebanese Christians, whether they were published in Beirut, Cairo, or Constantinople; for a whole generation then the reading public of the Arab countries lay open to the ideas of the new writers and thinkers of Lebanon.²

1. A.L. Tibawi, A Modern History of Syria, *op. cit.*, (1969), P.141.
 2. Albert Hourani, Arabic Thought, *op. cit.*, (1970), P.97.

Indeed, since historical facts support Hourani's contentions regarding the periodicals, their owners, editors, and their contributors, a look at a certain number of the periodicals which tackled the literature of scientific naturalism will be useful in this study.

Al-Muqtataf (Excerpts) was first issued in Beirut in May, 1876. It was transferred to Cairo in 1885. Ya'qūb Ṣarrūf and Faris Nimr were the editors until 1889. Afterwards, Ṣarrūf became the owner of the periodical and the sole editor until his death in 1927.

Both editors were graduates of the Syrian Protestant College. Fu'ād Ṣarrūf, the late Ṣarrūf's nephew, became the editor from 1927 to 1944 and it continued to appear until 1952. In the 1960's, the periodical was provided with an index of three volumes by the financial help of the American University of Beirut and other sources. This index distinguishes the periodical from other Arabic periodicals of the period.

al-Muqtataf was a monthly review initially, consisting of twenty four pages, but later expanded. It was concerned with western ideas and beliefs, particularly those related to science and its philosophy. Contributors to this periodical were famous intellectuals, poets, and scientists. It was the first periodical to introduce scientific naturalism to the Arab world and freely discussed the subject. Speaking of its role, in his book on evolution, Shibli Shumayyil pointed out that:

al-Muqtataf was the first Arabic periodical which mentioned Pasteur's doctrine of germs in Arabic in about 1879. It was the oldest scientific magazine in Arabic and, moreover, the only scientific magazine in the East up to this date (1882).¹

A list of selected titles may indicate the interests of this periodical: the Philosophy of Evolution, the Theories of Evolution, the Origin of the Idea of God, Life and Mind, Materialists and Spiritualists, Life and Nature, the Corruption of Materialistic Philosophy, and so on.

1. Shibli Shumayyil, The Philosophy of Evolution and Progress (1910) 1st ed. "Introduction", P.23 (the translations are mine).

Information about the Muqtataf was given by the editor himself in an article entitled "The History of al-Muqtataf"¹ in 1896. Ṣarrūf said that both he and Faris Nimr were tutors at the Syrian Protestant College when they first thought of the publishing of a periodical. He added that Cornelius Van Dyck, who was previously their teacher, encouraged them and suggested the name of the periodical. The author also spoke of the great help and encouragement offered by his colleagues and the college.

The aims of the review were discussed in a preliminary advertisement and in the introduction to the first issue. The author pointed out that the main aim was to serve the country by providing it with a knowledge of the scientific and industrial progress taking place in the developed countries. He stressed that the periodical had nothing to do with religious and political affairs, except when they were associated with science. But the periodical came into conflict with the Jesuits in its early years of publication.

The Hilāl which was established by Jurji Zaydan appeared in Cairo in September 1892. The review was divided into five sections dealing with the following topics: (1) Famous Men and Events, (2) Essays by Men of Letters, (3) Serial parts of novels, (4) Accounts of Historical Events taken from the more reliable newspapers during the current month, (5) and Selections of news, appreciations, and criticism.

In 1893 - 4, a new section was added: "Questions and Suggestions", and in the following year another appeared dealing with "Scientific News". In this section one finds some information on the scientific trends of the nineteenth century. There are a number of articles on Naturalism, Darwinism, Race, and Morality; but a close examination of the many volumes of the Hilāl shows that the natural sciences were not the main interest, as was the case in the Muqtataf.

1. al-Muqtataf (1896) vol.XX, pp.321-328.

The editor was fond of history, and his main attention was directed to ethics, politics, geography, philosophy and literature rather than the sciences.

In a special issue of the Hilāl entitled The History of al-Hilāl in Forty Years, the author quoted what the founder of the periodical wrote as an introduction to the first issue. He explained the divisions, the interests, and the aim of the Hilāl. He said it was called so because the crescent (Hilal) was the emblem of the gracious Ottoman State, because the Crescent would appear once a month like the real crescent, and because he hoped that his Crescent would be a full moon one day. He added that the periodical appeared monthly in thirty pages in the first year, fortnightly in thirty pages in the second year, and that by the third year it contained forty pages. But the periodical reverted to a monthly format, this time of 88 pages in 1905.

Jurji Zaydan was the only editor till his death in 1914. His sons, Emile and Shukri, then took over, and the periodical is still published.

A comparison between the two periodicals, the Muqtataf and the Hilāl, is worth drawing. The Hilāl was more successful than the Muqtataf for many reasons: firstly, because the Hilāl was primarily interested in history which accorded with the feelings of many Arab readers at a time of intense nationalism, when nostalgic yearnings for the glorious past were prevalent, secondly, the political argument which handled the past could be applied to the present and the future as well. Thirdly, although edited by a Christian the Hilāl remained nearer to the Muslim point of view than the Christian's, and fourthly, given that the magazine gave more attention to literature than to science, it was fortunate in possessing a large number of Muslim contributors who were among the most eminent literary figures of the time such as Ahmad Shawki,

the Poet Laureate, Hafiz Ibrahim, a well-known poet, Abbas Mahmud al-'Aqqad, a philosophical writer, Taha Husayn, a literary authority, and so on.

The Thamarāt al-Funūn (Fruits of Arts) was a weekly periodical which was established in Beirut by 'Abdul Qāder Qabbānī, the owner, and Ibrāhīm Aḥḍab, the editor, in 1875.¹ Adīb Ishāq, a Christian writer from Damascus, was a co-editor for some time. The periodical was mainly political within a religious framework, representing the Ottoman point of view in the majority of controversial matters. Both Qabbānī and Aḥḍab held respectable posts in the local government. Nevertheless, the periodical does provide some information about arts and sciences; it sometimes offers reviews of a number of contemporary publications. It also contains literary articles which are mostly traditional in thought and style, particularly those which were written by Aḥḍab himself.

The Thamarāt devotes a particular section to articles on "Morals and Habits". Apart from the editor's contributions, there are articles from a number of writers, Christians, Muslims, and Orientalists.² Although the periodical shows some interest in progress and social reform, its attitude fluctuates between Ottoman fanaticism and the Egyptian reformism of the Afghānī school. The issue number 1181 (23 May, 1898) marks the possession of the periodical by Ahmad Hasan Ṭabbārah, one of the editors who, I presume, held the editorship after Aḥḍab's death in 1891. There is a statement in issue number 1686 (2 November, 1908) which confirms that the Thamarāt was the second Islamic magazine in the world, after the Hawādeth in the Ottoman capital. In 1898 Ṭabbārah expanded the periodical from four to eight pages and introduced improvements both in the method of printing and in the magazine's contents.

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1. There are six reels of microfilm of Thamarāt al-Funūn, from 1875 to 1908, labelled under PA 55.2 at the Middle East Library, Oxford. Henceforth cited as Thamarāt.
 2. For example, there are articles by the Rev. Harvey Porter of the Syrian College, in 1885, John Wortabet, in 1886, and Edward Brown of Cambridge, in 1904.

This brief historical exposition of scientific naturalism indicates, beyond doubt, that the Syrian Protestant College acted as one of the main sources in providing the Arab reader with a knowledge of the scientific doctrines of the nineteenth century; and that its lecturers and graduates were the pioneers who introduced Western science into the Arab world. The Syrian writers who settled in Egypt of course did exert some influence on the Egyptian thinkers through their periodicals such as: al-Muqtaṭaf, al-Hilāl, and al-Jāmi'ā which was founded by Farah Antūn in Alexandria in 1899. However, it is interesting to find that the majority of the Arab writers tried, in one way or another, to compromise between Western sciences, on the one hand, and their traditional religions, on the other; and that they attempted, more or less, to cope with the progress of scientific thought in the West, though none of them can be considered a scientist or a naturalist in the strict sense of the term.

C H A P T E R F I V ETHE CONFLICT BETWEEN RELIGION AND SCIENTIFIC NATURALISM IN THE ARAB
WORLD

It was not only in England that religion came into conflict with scientific naturalism but this conflict was also present in the Arab World in the second half of the nineteenth century. This chapter will describe the conflict as it is recorded in the periodicals of the time. The portrait will show how scientific naturalism was received by both Christians and Muslims in the countries concerned.

Attempts will be made to examine and explain controversies such as: the creation of the universe, the appearance of life on earth, the origin of man, his nature, the immortality of the soul, faith, Revelation, miracles, death, and the Resurrection, in the light of the scientific facts which were explored in the natural sciences as well as in rational and materialistic philosophy.

Arabs were introduced to the scientific doctrines of the nineteenth century by men who were acquainted with Western thought through their pursuits either in their own countries or in Europe. These men were aware that the development of Europe sprang from the progress made in science and industry. To convey these new beliefs and ideas to their own countries was the least of their aspirations and ambitions. They were intelligent, industrious, and faithful to their motherland. They were liberal in thought, courageous in telling the truth, and tolerant in their nature, as a rule. They all wanted to improve their countries but their approaches were various owing to their different viewpoints. Some of them thought that political reforms were essential for progress, others believed that social and educational reforms must have priority, but all recognized that ignorance was the real cause of decline in their countries.

Therefore, some of them, for example, Yaḡūb Sarrūf, Bishāra Zalzal, Jurji Zaydān, and Farah Anṭūn, founded their own periodicals to expound their ideas and counter ignorance. Other thinkers contributed to these periodicals and thus participated in the struggle.

Agnostic attitudes came to light as soon as the new literature emerged. Supporting the natural sciences, the physicians, Zalzal and Shumayyil, launched their views on biology, physics, physiology, and natural history. Sarrūf and Nimr, as believers in the scientific doctrine, propounded their views on astronomy, geology, and metaphysical concepts of the past.

A controversy took place in Syria in the 1870's between two camps of Christian writers: those who adopted scientific doctrines and those who supported a more traditional Christianity, largely the more conservative Protestants and the Jesuits. In the last two decades of the nineteenth century, there were two notable conflicts, the first occurred between Afghani and Ernest Renan over Islam's attitude towards science, and the second between Muhammad 'Abduh and Farah Anṭūn in Egypt. Shumayyil was the only writer who consistently presented the materialistic philosophy in conflict with both the Christian writers who believed in Christianity and science, and with the Muslim writers who rejected naturalism and materialism. There was also a controversy between Jamil az-Zahāwī, the Iraqi poet, and some Egyptian theologians in the 1920's. Zahāwī represents, as I shall show, an agnostic trend in his poetry and perhaps he was closer to materialistic doctrine than Islam.

I. A DEBATE OVER THE CREATION OF THE UNIVERSE

With the appearance of the first issues of the Muqtataf in 1876, a controversy took place on two themes, the rotation of the earth and the significance of Natural History. The Copernican theory of the sixteenth century which taught that the sun was the centre of the

rotating planets was appreciated by the writer of an article entitled: "The Solar System".¹ The author explained that there were four astronomical theories. The first was the Ptolemaic theory which held the earth was the centre of certain revolving planets in successive orbits in the following order: the moon, Mercury, Venus, the sun, Mars, Jupiter, and Saturn. The author stated that this theory was acceptable until the fifteenth century, but it was proved to be wrong. He quoted two lines from Nasif Yaziji's² rhyming prose to show that the latter had held such a traditional doctrine. The second hypothesis was the Egyptian (Tyconic) view which was, he explained, like the Ptolemaic with the difference that Mercury and Venus were considered as two moons revolving around the sun. The third was the Copernican theory which was, to the author's mind, the correct theory and the one most widely accepted now. The fourth was the Keplerian doctrine which appeared in the seventeenth century and explained the laws of planetary motion.

The author gave, in the footnote, an account of Copernicus' character and his search for truth. He explained that Copernicus ascribed the error of the Ptolemaic theory to a fallacy of visual perception like that of clouds and the moon in which only the latter seems to be in motion.

In a following issue of the Muqtataf an article appeared on "The Rotation of the Earth"³ which was ascribed to Ya'qub Sarruf by Najm A. Bezirgan who loosely translated the former's statement that: "the rotation of the earth on its axis and its rotation around the sun have become well-known and evident to any healthy mind that reads and thinks."⁴ Sarruf gave seven points in favour of the rotation theory. He explained that the planets were held in the universe because of the law of gravitation; that the flatness at the poles of the earth denoted its rotation on

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1. "The Solar System", the editors, Al-Muqtataf (1876), vol.I, pp. 30 - 32.
 2. Nasif al-Yaziji: (1800 - 1871) was a distinguished poet of the classical school of Arabic poetry.
 3. "The Rotation of the Earth", Y. Sarruf, Al-Muqtataf (1876), vol.I, pp. 141-143.
 4. "The Islamic World", Najm A. Bezirgan, The Comparative Reception of Darwinism, ed. by Thomas F. Click (Austin & London, 1974), pp. 375 - 376.

its axis; that the spectroscope disclosed a great number of stars which were as huge as the sun and it would be unreasonable to believe that such big stars were revolving around the earth; that if the fixity of the earth was right, then, the speed of the rotating stars around the earth, regarding their distance, would be millions of miles a second compared to what was estimated to be a mere three miles a second for the rotation of the earth on its axis and nineteen miles a second for its rotation around the sun; that it was noticed that the falling stone always deviated towards the east which indicated that the earth revolved from the west to the east; that Foucault's experiment proved that the pendulum did not follow one line in its oscillation because of the rotation of the earth; and that stars were to be seen behind their real places, due to the bending of light in gravity, a principle well-known in astronomy.

The author asserted that the article was written as an answer to many letters demanding evidence for the rotation of the earth. He used abrupt polemical phrases such as : 'Let only the wise man judge', 'It is only the blind of sight and heart who denies this evidence' at the end of each proof he gave, and in his closing sentence he said:

Perhaps the reader would not criticise us if we say that those who reject the rotation of the earth do so either fanatically pretending that it objects to what is written in the holy book, which is mere illusion, or they reject it for the sake of fame, in the same way as "the breaker of a fountain nozzle".

In a letter to the Muqtataf, Gabriel Jbāra, Patriarch of Antioch, completely rejected Sarruf's arguments on the theory of rotation. The Patriarch attacked the holders of this doctrine and described those who were ostensibly recognized as scientists as pedantic and mean people.

1. Al-Muqtataf, op. cit., (1876), P.143; the quotation refers to a traditional story of a man who has broken the fountain-nozzle only to achieve fame because his loved one once tells him that nobody knows him in the village.

He explained the fixity of the earth by appealing to the miracles and the words of the Bible, particularly the Book of Genesis. The most 'interesting' evidence given in favour of the fixity of the earth was that of the 'Flood'. The Patriarch argued that religious instructions stated that the flood lasted forty days and the surface of the earth was covered with water and, in his own words:

If the earth were revolving, water would not be at a standstill and the flood could not be performed.¹

Another piece of evidence given by the Patriarch concerned Joshua's prayer to God to keep the daylight on in order to carry on the slaughter of the Amorites.² The sun, he said, ceased to revolve for a full day until the war was over. He named the Prophet Habakkuk as the eye-witness to the incident. Such miraculous incidents no longer had currency in the minds of the publicizers of scientific thought in the Arab World. Although these men avoided declaring publicly their views on miracles, they implied them in their arguments. It was difficult for the Arab writers who read Lyell, Tyndall, Darwin, and Huxley to believe in miracles.

The Patriarch's attitude as depicted in his letter reminds us of the Middle Ages when the clergy used to live in their hermitages, isolating themselves from earthly interests and frantically sticking to the literal concepts of the Bible whose historical incidents were refuted by many European thinkers with whom Arab writers were acquainted. Perhaps the Patriarch had not heard of Newton's theory of gravity at all.

In an article entitled: "The Natural Sciences and the Legitimate Texts" which appeared in the Muqtataf, Sarrūf presented what

1. Ibid., P.173.

2. The Biblical incident reads thus: "On that day when the Lord delivered the Amorites into the hands of Israel, Joshua spoke with the Lord, and he said in the presence of Israel: Stand still, O Sun, in Gibeon; Stand, Moon, in the vale of Aijalon. So the sun stood still and the moon halted until a nation had taken vengeance on its enemies, as indeed is written in the Book of Jashar". (Joshua 9, 10, P.158). The New English Bible (O.U.P, 1973).

Riaz Pasha, Minister of Education, and Abdulla Fikri, the Vice-Minister, in Egypt - both Muslims - wrote to him about the Patriarch's contentions. Sarrūf related that the minister said to Cleanthes Philipphes, the agent of the periodical in Egypt, that the Patriarch's opinion was religiously and scientifically wrong. Sarruf added that the Vice-Minister honoured him with a letter in which the latter explained the attitude of Islam towards the science of astronomy. The Vice-Minister quoted al-Ghazali, the indisputable philosopher of Islam, only to show that the notion of rotation was not in conflict with Islamic texts, and that the attempts of those who sought to oppose regular scientific facts would weaken the position of religion. The Vice-Minister maintained that al-Ghazali accepted the scientific explanation of the eclipse (viz: that the sunlight is cut off when the moon comes between the sun and the earth, or that sunlight is cut off when the moon comes in the shade of the earth). He adopted al-Ghazali's view that there would be no harm done to Islam in so far as the idea of rotation of the earth was credited as created by God. He also referred to a book which was extant in Istanbul entitled: Asrār al-Malakūt (The Secrets of the Universe) which was written in Turkish and supplemented by a commentary in Arabic. He said that the book gave a substantial debate about the new astronomical theories. He cited part of a dialogue between an astronomer and a theologian, only to show how far they agreed, and draw a moral of correspondence between scientific philosophy and religion. However, Al -Ghazāli's principle of harmony between religion and science was based on the notion of Ta'wīl, reinterpretation of the words of God in the light of scientific evidence.

In his second letter, dated March 5th, 1877, to the editors of al-Muqtataf entitled "The Fixity of the Earth", the Patriarch Jbāra retorted Sarrūf's arguments in the above article. He gave a good number of quotations from both the Quran and the Bible in favour of the

idea of the fixity of the earth. From the Quran he cited, for instance, a verse from Al-Hijr:

And the earth - We stretch it forth, and cast on it firm mountains, and We caused to grow therein of everything justly weighed.¹

And another verse from An-Nahl (The Bee): "And He cast on the earth firm mountains, lest it shake with you."² The Patriarch objected to rational reasoning or philosophical interpretation in the presence of the holy text. His evidence was entirely based on his belief in the words of God and the prophets. He held that holy texts were not open to reinterpretation or adjustment. Being the representative of the Orthodox Church and the highest authority in Syria, the Patriarch warned the readers of the Muqtataf and the Āthār al-Adhār to be more careful of that scientific philosophy displayed in these periodicals. His warning was powerful that it kindled a resistance to the new heresy.

Wishing to close the correspondence with the Patriarch, Ya'qūb Ṣarrūf, in his rejoinder³ which appeared in pages following the letter, pointed out that the Patriarch was wrong in his judgement that the editors of the Muqtataf were atheists. He also rejected the Patriarch's idea that the holy texts were uninterpretable. He referred to the incident of 'the Flood' mentioned in the Genesis to show how interpretation was possible. He said that when Moses described rain as water which poured down from holes opened in heaven, he did not mean the existence of real holes but he wanted to use the rhetorical term or the concept which was popular among the people at the time. He also denounced the idea that Islamic texts should not be construed in favour of scientific facts. Ṣarrūf illustrated that the Quranic Verses cited by the Patriarch to support the fixity of the earth did not mean what he claimed for them,

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1. Arthur Arberry, The Koran Interpreted (1974), Al-Hijr, P.254.
 2. The Kuran, translated by M. Zafralla Khan, (1971), P.260. (In Arberry: 'lest it roll beneath you'. P.251).
 3. "Our Reply to the Fixity of the Earth", Y. Ṣarrūf, Al-Muqtataf (1877), pp. 269 - 270.

for the simple reason that as long as the masts of a ship would not prohibit its movement, the 'firm mountains' would not prohibit the rotation of the earth.

Perhaps one of the most important points which annoyed Şarrūf was the Patriarch's warning that people should avoid reading the Muqtataf. Şarrūf pointed out that Copernicus' solar system was taught in all ecclesiastical schools including the Greek Orthodox ones in Beirut as well as in Athens and Russia; besides that, scientific books were found everywhere. He denied the Patriarch's attitude towards the scientific literature and considered it as one of the disasters which hindered the progress of the Arab World.

The arguments in the above controversy show that religious teachings were either in conflict or in accordance with astronomical facts. In fact, the phenomena of conflict between the clergy and astronomers has been present from ancient times. The scientists who held the doctrine of the rotation of the earth - such as Galileo, Bruno, and others - were condemned and persecuted by religious authorities. But the Patriarch could not exert any direct pressure on the men who were promulgating scientific doctrines, though he wanted to incite both Christians and Muslims against them. His failure may explain two things for us: first, that the clergy had lost much of their influence on the State, and secondly, that the Arab countries really were beginning to open to liberal thought in the 1870's. This liberty of thought was due to the Ottoman reforms which appeared in the Hatti-Humayun of 1856 and the liberal regime in the fields of education and the press regulations. Perhaps it is unfair for such liberal regimes to have been devalued by some historians.

Both sides of the above controversy were believers in Christianity and perhaps their conflict can be considered in the light of the clash between the Protestant and the Orthodox Church. While Şarrūf,

as a Protestant writer, attempts a compromise between religion and science, the Patriarch of the Orthodox Church rejects everything scientific in relation to holy text. The Muslims who were involved in the debate sided with the Protestant point of view.

In fact, many Arab writers were interested in astronomical questions in the second half of the nineteenth century. For example, As'ad Dāgher, a graduate of the Syrian College, published several articles in the Thamarāt about meteors; and the Iraqi poet, Zahāwi, wrote several articles and two books postulating a theory of repellantcy as opposed to Newton's theory of gravity. Zahāwi's work includes some rather peculiar views.

In the Thamarāt series of articles¹ As'ad Dāgher remarked that the term "nayzak" (meteor) had no Arabic origin and initially meant "a short lance". He went on to state that Gladni, the eighteenth century philosopher, who intelligently disclosed the secret of meteors, had erred in relating this natural phenomenon to supernatural causes. He, however, asserted that the nineteenth century investigations had freed astronomical researches from the constraints of guesswork. In a metaphorical presentation, the author allows the meteor to talk on its way of realizing its destiny in coming under the attraction of the earth, an attraction not previously experienced in space. The meteor itself announces that it does no harm to human beings and the author rejects superstitious interpretations often accorded to the phenomena, citing two lines of poetry to support his view.

In the second article Dāgher objects to the idea that attributes the falling of meteors to a collision between two stars, or celestial bodies, an idea which had been held by many traditional astronomers. He ascribes the different shapes of the meteors, or even their

1. "Meteors or The Falling Stars", As'ad Dāgher, Thamarāt (1893), issue nos. 928, 929, 930, 933.

disappearance before impact, to the heat resulting from friction, with the air at high speed. In a subsequent article, Dāgher asserted that the broken parts of the falling star would not vanish, but that they either fell on mountains and deserted areas, or became dust, since there is no loss or perishing in nature.

Dāgher, in the last article of the series, referred to Ruth's conclusions at Leeds Observatory and Dunning's at Bristol. Both men had simultaneously observed a meteor on January 2, 1888, and had worked out its height. Dāgher mathematically demonstrated the method of calculating the height of a meteor.

Zahāwi's interest in astronomy is reflected in his books: al-Ka'ināt (The Universe) (1896), aj-Jādhibiyya wa Ta'līluha (Reasons of Gravity) (1910), a treatise of 72 pages, and in three articles which were published in the Muqtataf in 1912.¹ al-'Aqqad appreciates the Ka'ināt and finds in it elements of concise argumentation which seemed to him to be more advanced than Avicenna's allusions about the topic.² Although I was not able to trace the work itself, information about the book and Zahāwi's other scientific writings has led me to consider that 'Aqqad's statement was not entirely accurate and that 'Aqqad himself was another metaphysical poet of Zahāwi's type. A more convincing and accurate evaluation of Zahāwi's astronomical attempts is revealed in Louis Shayko's comments on Zahāwi's theory of expulsion which are worth quoting:

The author of this book (aj-Jādhibiyya) has included in a few pages individualistic ideas which are extremely weak and which contradict what was taught by thousands (or myriads) of scientists... Therefore we do not consider this booklet as other than a comedy which entertains those who have no knowledge of the natural sciences.³

With regard to Zahāwi's theory of expulsion, the poet remarked that scientists failed to explain why an expulsion occurs between two similar electrons or an attraction between two different

1. Quoted in az-Zahāwi: A Study and Texts, edited by 'Abdul Hamīd ar-Rashūdi, op. cit., pp. 127 - 152.

2. Ibid., P.217.

3. Ibid., P.164; quoted from al-Mashriq (1910), pp. 956 - 957.

ones. Therefore, he speculated that there must be a law that controls all natural phenomena. He held that electrons rotate like all planets and stars and that the cause of the attraction or expulsion between electrons is the direction of the rotating electrons. Ether affects the movement of electrons either by uniting or separating them. He presumes that every planet has two halves with two different forces; the closer half to a body repels that body while the second half attracts it. This law can be applied to every rotating body in the solar system except meteors whose small mass and high speed cause their bodies to be subject to one pressure as if they were not in two halves, one repelled and the other attracted.¹

As against accepted nebular theory, rather peculiarly Zahāwi supposed the existence of a sun which he called "The Sun of Suns" around which the ordinary sun rotated and that its speed was 18 miles per second. He also held that each planet, in time, would become a sun and that the sun itself would lose its heat and light and dissolve into minor nebular forms, and that other planets would replace it.

Speaking of Zahāwi's interest in scientific theory, Dr. Shawqī Ḍayf stresses two main points: Zahāwi's desire to convey the facts of contemporary Western scientific theories, and his pronounced inclination for rationalist philosophy.² In support of his views Ḍayf cites "Siyāḥat al-‘Aql" (The Tour of Mind), a poem which deals with the theories of gravity and ether and the considerable evidence that corroborates them. This poem does not contain any mention of Zahāwi's own theory of "repulsion" which he directly opposed to the theory of gravity.

The question of meteors has also been dealt with by M.M. al-Falākī, an Egyptian practitioner of Islamic law, and by

1. Ibid., pp. 144 - 146.

2. Ibid., pp. 330 - 345; quoted from Dirasāt fi ash-Shi‘r al-‘Arabī al-Mu‘āṣer by Shawqī Ḍayf.

S.M. Sham^{ʿa}, a scholar from Damascus. Falakī, in an article¹ published in 1899, gave an interpretation of the phenomenon of meteors by referring to traditional astronomy, particularly Aristotle's view that earthly vapours were the origin of meteors. He also remarked that modern astronomy considered meteors to be celestial bodies which rotate around the sun and derive their source of light from it. Falaki spoke of the appearance of meteors throughout history, by giving the dates of their appearances only to refute a certain German astronomer (Radolf) who fancied that a meteor would destroy the world on 13 November, 1899, the date Falaki chose to write his article. Falaki does not mention God's role in directing meteors towards their elliptical orbit, nor does he refer to the superstitious or prophetic interpretation often placed on their appearance.

Salīm Madhat ash-Sham^{ʿa}² referred to superstitious explanations of the appearance of meteors, especially during the Middle Ages. He wondered why the Europeans of those ages failed to consider the appearance of meteors as signs of beauty and good instead of evil and bad omens. He asserted, of course, that this beauty indicated the greatness of God.

Broadly speaking, we notice that the Arab writers who dealt with astronomical issues in the nineteenth century believed in the existence of a natural law beyond natural phenomena, but also held to a belief in a design, or Designer, in the patterns of these phenomena. The attitude of the Patriarch of Antioch was exceptional, for even the fanatical Jesuits and Muslims refused to side with the Patriarch. This was one phase of the conflict between religion and science.

1. "The Meteor", by Muṣṭafa Muḥammad al-Falakī, Thamarāt (13 Nov. 1899), pp. 6 - 7.

2. "Meteors", Salīm Madhat Sham^{ʿa}, Thamarāt (27 Nov., 1899), p. 3.

II. THE EARLY RECEPTION OF NATURAL HISTORY AND DARWINISM IN THE ARAB WORLD

The debate above has presented the impact of scientific naturalism in *the field of astronomy*. The following section deals with the conflict between Natural History and Revelation as conducted by Shibli Shumayyil, Bishara Zalzal, Ya'qūb Ṣarrūf, Zahāwi, and others.

Perhaps these so-called naturalists can be divided into materialists, Shibli Shumayyil and Jamīl Ṣidqī az-Zahāwi, and divine evolutionists, Bishāra Zalzal and Ya'qūb Ṣarrūf. As a preliminary point, we may notice that there is no substantial trace of the effect of the Positivist school of scientific philosophy, though one may find some allusions to it from time to time. An earlier mention of Auguste Comte's influence in the Arab world has been suggested by Albert Hourani who points out that: "Some Egyptians indeed had drunk at the fountain-head: there is extant a copy of Comte's Discours sur l'ensemble du Positivisme, presented by the author himself "à mon ancien élève, Mustafa Mahramji."¹ Perhaps Mahramji was sent by the Khedive Muḥammad 'Alī to study in Paris, but there is no record on him in Parisian or Arabic literary circles. I wonder if there is any Arab writer who has systematically adapted Positivism to Islamic thought? Albert Hourani finds a link between Comte's views and Muḥammad 'Abduh's rational attitude towards the interpretation of Quranic Verses. Both 'Abduh and his master Afghāni, were metaphysical in their beliefs, but rational in their application of modern thought to education and the social welfare on the grounds of an Islamic principle called al-Maslahah(utility).

Positivism has not been mentioned by any of the rational theologians or the Arab naturalists, although those who adhered to

1. Albert H. Hourani, Arabic Thought, op. cit., (1970), P.138.

rational philosophy were not only influenced by Comte but by many free thinkers such as J.J. Rousseau, Voltaire, Spencer, Renan, and others. Comte had not been translated into Arabic by the time 'Abduh graduated from the Azhar University in 1877 and his interest in French dates from the 1890's. His interest in the interpretation of the Quran was evident by the turn of the nineteenth century, as his interpretation of the 'Introductory Verse' of the Quran indicates.¹ Perhaps an indication of his European readings is offered by a few books found in his library such as Rousseau's Emile and Spencer's Education, from which, perhaps he drew inspiration for his special attention to educational reform in Egypt. Albert Hourani remarks that "'Abduh went to Brighton to see Spencer",² and Nadia Farag, in her doctoral thesis, asserts that 'Abduh translated Spencer's Education into Arabic.³ 'Aqqad also cited 'Uthman Amīn who stated that 'Abduh translated Spencer's book from French.⁴ Unfortunately, I was not able to find this work. 'Abduh published an article on Bismarck in the Thamarāt which reflects his interest in translation.

Bishāra Zalzal's article in the first volume of the Muqtataf in 1876 opens the Arab debate. It was entitled "On the Natural History, Its Division, and the Urgent Need to it".⁵ Zalzal explained that 'matter' was divided into organic and inorganic, and that organic beings consisted of plants and animals, including man. He said that the study of these organic beings, their chemical structure, and their development was called the science of natural history, and that it was considered at the head of all other sciences. He divided natural history into Zoology and Botany, and he also classified the inorganic sciences into minerology

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1. Durūs Min al-Qurān, Muhammad 'Abduh, introduced by Ṭaher aṭ-Ṭannāhi (Cairo: Dar al-Hilal, n.d.), pp. 45 - 68.
 2. Albert Hourani, Arabic Thought, *op. cit.*, P.135.
 3. Nadia Farag, a Ph.D. thesis, *op. cit.*, pp. 285 - 286.
 4. Abbās M. 'Aqqād, 'Abqariyy al-Islāh wa't Ta'lim al-Imām Muhammad 'Abduh, *op. cit.*, P.87.
 5. Bishāra Zalzal, al-Muqtataf (1876), vol.i., pp. 100 - 103.

and geology. He then stressed the significance of natural history and its usefulness in many fields. He remarked that those who had the opportunity to learn the minute facts of this science were dazzled by God's greatness and wisdom.

Commenting on zoology, Zalzal pointed out that scientists recognized man's characteristics in the study of animals. He quoted Buffon's view that without the study of animals it was impossible for human nature to be understood. He appreciated the physiological studies of mammals which were also necessary for the recognition of man's constitution. He referred to Buffon's contributions to such studies and concluded his article by dividing zoology into comparative anatomy and physiology; and he explained further that the former dealt with the structural characteristics of organs while the latter handled their functions. Such primary information was necessary for the general reader who had no idea of natural science at the time.

In the same volume of the Muqtataf, Ya'qūb Ṣarrūf, in an article entitled: "The Natural Sciences",¹ praised these sciences for the many benefits they brought but he regretted that some people devalued them, attributing corruption and atheism to naturalists. He classified periodical readers into three groups: first, those who claimed that natural sciences were incompatible with Revelation and therefore denied their benefits; secondly, those who recognized the profits of natural sciences, but they held that they often led to agnosticism, though they approved their benefits, and thirdly, those who believed in the truth of these sciences and consequently, they denied Revelation altogether. Ya'qūb Ṣarrūf argued that the attitude of the first group was not wise

1. Ibid., pp. 169 - 171.

for if they faithfully believed in God, nothing could be wrong with the study of His creatures and the miraculous actions which denoted His greatness and Providence. He asserted that Revelation itself urged man to meditate on the work of God, and quoted many Verses from both the Bible and the Quran, to support his view. It is worthwhile having one example of his quotation. He referred to the following Verse from the Quran:

Surely in the creation of the heavens and the earth
and the alteration of night and day
and the ship that runs in the sea with profit
to men, and the water God sends down from heaven
therewith reviving the earth after it is dead
and His scattering abroad in it all manner of
crawling thing, and the turning about of the winds
and the clouds compelled between heaven and earth -
surely there are Signs for a people having understanding.¹

This passage on Nature reveals the interest in observation, meditation, and reasoning. It refers to God's design in the diversity of nature and stresses the everyday relation between the heavens and the earth as seen in the difference of night and day, in the revival of life in the dead plants by rain, and in the ordinance of winds and clouds. The signs of nature glorify an aesthetic outlook on the universe, its utility to man as it is manifest in the principle of give-and-take, and its power. The last sentence explicitly urges man to correlate these natural phenomena with the Power beyond them.

The second group, Şarrūf argued, should not be afraid of natural sciences which had never been in contradiction with the Word of God because Revelation was not sent down to teach sciences and philosophy. He disapproved of the view that scientific facts should be rejected because they were not revealed in the Holy Books. He explained that the

1. Arthur J. Arberry, The Koran Interpreted (1963), Vol.i, P.49.

Word of God came in accordance with the current concepts of the common people to whom divine messages were sent. Words such as 'sunrise' and 'sunset' which once meant by implication the fixity of the earth, he said, did not mean it in the modern phraseology, though they were still in use. As for the third group who rejected Revelation entirely, Ṣarrūf criticised them by saying that they went far astray because they were not able to understand the harmony between Revelation and the natural sciences. The wisest people, to his mind, were those who believed that science came to ascertain the word of God.

In an article entitled "An Introduction to Natural History"¹, Shibli Shumayyil laid out the constituents of natural history and its benefits. He concentrated on the advantages of natural history of which two points were outstanding: first, its guiding role by providing people with knowledge in order to keep themselves healthy, and in providing intellectuals with material facts which stimulated wise thinking in two ways: comparison and analogy. He demanded that at least the accepted generalities of natural history should be taught in State schools, and added that chemical analysis disclosed the constituents of organic beings, and that the idea of life, before the facts of natural history, had been a vague phenomenon. He referred to the importance of nutrition on which the growth of the body depended according to a formula which showed that the death of something in part, as in the assimilation of food, for instance, meant a life for another thing.

The article is a summary of the first two chapters of Shumayyil's book of the same title. No doubt, Shumayyil was the first scholar to suggest the teaching of natural history in schools, and it has been maintained by many authors that Shumayyil was the first thinker

1. "An Introduction to Natural History", Shibli Shumayyil, al-Muqtataf (1881 - 1882), vol. iv., pp. 221 - 224.

to introduce scientific literature, particularly Darwinism, into the Arab world. Najm A. Bezirgan points out that: "Shumayyil was quite aware of his position as a pioneer in introducing the theory of evolution to the Arab world."¹ Bezirgan quotes Shumayyil himself on his role in the introduction of his book entitled : The Philosophy of Evolution and Progress , in which the latter said :

When I began spreading the principles of this doctrine of evolution, it had no followers, and there was nothing written on it in the Arabic language. In fact, even its supporters in the West could be counted on the fingers.²

Najm Bezirgan attributes Shumayyil's acquaintance with Darwinism to his study at the Syrian Protestant College. He also refers to Shumayyil's thesis entitled: "The Influence of Nature, Environment and Climate on Man and Animal"³ as showing the latter's early interest in natural studies. Bezirgan's article seems to have been written for a particular purpose which makes it seem rather abrupt, hasty, and inaccurate. He uses, for instance, Fu'ād Ṣarrūf (Ya'qūb's nephew) instead of Ya'qūb Ṣarrūf in the footnote (No. 1, P.375), the word 'thinks' instead of 'understands or comprehends' in his quotation page 376, and page '25' in the footnote No. 5, P. 377 instead of 'iii', the page of his quotation from Shumayyil's 'Introduction'. He considers John Stuart Mill to be one of the English philosophers who dominated Arab thought in the second half of the nineteenth century, though I myself have found no strong influence as yet. J.S. Mill's views appeared in the writings of Luṭfi as-Sayyid, particularly his book entitled: Mushkilat al-Hurriyāt fi'l 'Ālam al-'Arabī⁴ (The Problem of Liberties in the Arab World) which perhaps was published in the 1930's.

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1. "The Islamic World", Najm A. Bezirgan, The Comparative Reception of Darwinism, ed. by Thomas F. Flick (1974), P.376.
 2. *Ibid.*, P.377.
 3. Najm A. Bezirgan's translation of the title seems to be an adaptation, therefore, I suggest a closer translation to the Arabic text: "The variation of Animal and Man according to Climate, Nutrition, and Nurture."
 4. This book has no date, but his other works appeared in the following order: Al-Muntakhabāt (the selections) (1937 - 1945) in 2 volumes, Safaḥāt Maṭwiyya (Folded Pages) (1946) and Ta'ammulāt (Aspirations) (1946). Luṭfi as-Sayyid was born in an Egyptian village in 1872 and died in 1963. He was professor of philosophy at the University of Cairo and, later, its Rector.

His earlier writings on liberty appeared in the newspaper called al-Jarīda, whose editor was Luṭfī as-Sayyid himself, in the second decade of the twentieth century.

Commenting on Shumayyil's attitude towards the scientific movement in the Arab world, Albert Hourani points out that Shumayyil: "belonged indeed to that great movement of the late nineteenth century for which science was more than a method of discovering regularities in the behaviour of objects: it was the key to the secrets of the universe, even a mode of worship."¹ Hourani not only suggests that Shumayyil was the first to introduce Darwinism to the Arab world, but was also "the first to spread the concept of socialism."² Moreover, he stresses Shumayyil's role in the proclamation for national and international welfare, the attitude in which one may find traces of humanism. He also refers to Shumayyil's impact on both Christianity and Islam.

The significance of biology as a branch of natural sciences appeared in an article entitled: "The Advancement of Knowledge"³ which was written by John Lubbock⁴ and translated by Ya'qūb Ṣarrūf. It was an annual address read before the British Association for the Advancement of Science, of which Lubbock was President. He surveyed the progress of biology in the last fifty years and concentrated on Darwin's contribution to the science. He maintained that the laws of Natural Selection, the Struggle for Existence, and the Survival of the Fittest were at work. He appreciated

1. Albert Hourani, Arabic Thought, op. cit., (1970), P.248.

2. Ibid., P.252.

3. "The Advancement of Knowledge", John Lubbock, translated by Y. Ṣarrūf, al-Muqtataf (1881 - 1882), Vol.IV., pp. 520 - 525.

4. John Lubbock was born in London in 1834, and was a banker by profession but a naturalist by intellectual inclination. He held the positions of Vice-Chancellor of London University and the President of the British Association for the Advancement of Science for a period. He wrote about insects and The Beauties of Nature (1892). His treatise the Pleasures of Life was translated into Arabic as Thamrat al-Hayat in 1900. The translator, Hasan Riyad, includes his own letter to Lubbock and the latter's reply in his introduction to the translation. He expresses his admiration for the work which he read in the French translation. Thamrat al-Hayat (Cairo: Taraqqi Press, 1900).

the scientific information given by T.H. Huxley, A.R. Wallace, and Herbert Spencer. Speaking of the question of variations, Lubbock argued that the objections to Darwin founded on the non-existence of a link between two species was a false objection for in the existence of a link the two species would be one. He said that the dog and the jackal were two species, but if a link was found, then, they would be united into one species. He referred to the idea that some scientists thought that according to Darwin's hypothesis a lamb might be changed into an ox. He said that such scientists misunderstood Darwin's notion which explained that both the lamb and the ox had been of one origin and not that it was possible for one to be changed into the other. This objection was adopted by the Muslim thinker Jamāl ad-Dīn al-Afghāni as we shall see.

Lubbock also pointed to the development of embryology and appreciated the contributions of Van Baer on the eggs of the mammali, of Huxley who proved that birds were descended from reptiles by finding fossil-birds as reptiles, and of Pasteur, Tyndall, and others, who asserted that spontaneous generation was impossible and who found the germs in the air were the only cause of generation. He added that this search led to the discovery of the bacteria which were the cause of many diseases that now could be controlled. Afterwards, he spoke of progress in the fields of anthropology and archeology and insisted that scientists no longer believed in the view that man had been suddenly created thousands of years ago, as was held fifty years ago, because the archeological researches discovered that the Egyptian pyramids had been built six thousand years ago and it was impossible for that nation to arrive at such a height of civilization within such a short time.

The earliest information about Darwinism in the Muqtataf

appeared in an article entitled: "On the Origin of Man"¹ by Rāziq al-Barbāri in 1876. The author explained that Darwin held that there had been only four or five original species on the earth, and that he went beyond this to the belief that even plants and animals had been developed from one origin. Darwin, he said, gave no reason for the appearance of life and no explanation of the ultimate origin of species. After illustrating Darwin's law of variations, Barbāri referred to the Malthusian principle of difference in the ratio of increase between organisms and subsistence. He said that from Darwin's proposition of a prolonged time in millions of years for the development of creatures, one might infer God's non-interference after the stage of germ-creation which was, to him, an atheism. Thus he considered Darwinism as an incompatible doctrine with the teachings of Revelation, and advised men to avoid such unreasonable ideas and adhere to the approved teachings of religion.

III. THE DEBATE OF SOME ARAB INTELLECTUALS OVER DARWINIAN MAN

1. The Geological Argument

A controversy took place on the theme of the creation in the sphere of geology. In an article entitled "The Latest Opinions on the Ice Ages and their Effects on Man"² which was published in the Muqtataf in 1880. Shibli Shumayyil explained that it was only in the second half of the nineteenth century that scientific research, by virtue of anthropology and sociology, put an end to the poetic images and the superstitions of ancient philosophy. Scientists, he said, devoted their efforts to the study of Nature, the place from which man had grown, not to heaven. He argued that sociological principles were based on the

1. "On the Origin of Man", Rāziq al-Barbāri, al-Muqtataf (1876), Vol.I, pp. 279 - 280.

2. Shibli Shumayyil, al-Muqtataf (1880), Vol.V, pp. 17 - 20.

development of biology which was given much attention because it served anthropology in seeking the truth of man's origin, and both sociology and biology were in debt to geology. He presented the development of the geological theories beginning with Cuvier's hypothesis of the sudden changes, which was known as the doctrine of the deluge or the catastrophic theory, and on which Shumayyil commented that it was refuted by Charles Lyell who in turn proved in 1830 that only the natural factors of heat, water, and air were the causes of the slow and gradual changes on the earth. Shumayyil stated that after a long debate over the origin of the Ice Age, geologists attributed it to both the transference of the earth's axis and the two equinoxes which usually took place every 21,000 years.

Shumayyil referred to the differences in time between the earliest remains of human beings discovered in the West and in the East. He said that it was maintained by geological records that the oldest remains in Europe did not go back to more than 8,000 years while the eastern remains were nearly 15,000 years old. He ascribed this difference, and the early civilization in the East, to the effect of the Ice Age, which hindered the development of European peoples. He added that civilization appeared earlier in Egypt because of its moderate climate at that time and because of its nearness to the equator, where there was no ice, snow, or high mountains which might impede the development of man. A further argument concluded that the excellent progress of Europe was due to the moderate climate which began in c. 1250 when the ice cap transferred from the northern to the southern half of the globe, where the intense cold and ice prohibited development and even life altogether. He attributed the decline of the Easterners to the hot equatorial climate which restrained their activities, but they were not to be blamed because, he said, according to the geologists' estimate,

after ten thousand years the situation would be reversed and the east would enjoy a moderate climate which would bring again a new civilization, while Vienna, Paris, London, and New York would be covered with ice and be deserted. Apparently he did not think of the scientific progress which might provide man with weapons which could stand against the supposed climatic changes. Shumayyil concluded that geologists gave an estimate of 50,000 years since the appearance of man on earth, but the new research, he said, pointed to even longer than that.

Shumayyil often refers to scientists or geologists as a whole without giving a definite name or an accurate quotation, though he sometimes mentions at random names such as Cuvier, Lyell and Agassiz. He often prefers to give his own reasoning and arguments which tend to be philosophical rather than scientific. In order to trace the development of his belief, it is worth quoting, for instance, his last sentence in this article in which he says:

But we say that all that has been mentioned above is conveyed from the authorities of this science (Geology). We do not decide on its truth and we are even unknowledgable as to its consequences. Thus¹ let neither believers be exulted, nor the atheists be unrestrained.

Although Shumayyil's words reveal some neutrality between the two camps, it also implies his agnostic tendency as a step towards the atheism which was to appear later in his writings.

Şarrūf tackled the problem of the creation in an article entitled "The History of Creation"² in which he defended the facts of geology and denied the attitude of the ignorant who made geology an equivalent concept to heresy. He asserted that natural sciences came to serve the words of God. Supporting his claim, he credited Dana, the

1. "The Latest Opinions on the Ice Ages and their Effects on Man", Shibli Shumayyil, al-Muqtataf (1880-1), vol.V., P.20.
 2. "The History of Creation", Y. Şarrūf, al-Mutataf (1880), pp. 120 - 122.

the American geologist, as an example of many geologists who looked at natural sciences as achievements of the Creator. He illustrated the stages of creation according to Dana's hypothesis and compared them to those in Genesis, only to show that there was no difference. The process of creation was put in eight stages in both doctrines and man was distinguished. He said that Dana explained that Moses' word 'day' in Genesis did not refer to the popular concept of twenty four hours, but to an undetermined period of time. Sarrūf asserted that many words in the Bible were used in such a rhetorical way.

One of the most difficult and important mysteries which has occupied man's mind from ancient times was the creation of the universe. In his article entitled "The Incompatible Doctrines of the Creation of the Universe"¹, James Dennis, Principal of the theological school in Beirut, classified the doctrines of creation into three broad divisions: first, the doctrine of spontaneous generation with or without the interference of God; secondly, the evolutionary doctrine by Providence; thirdly, the doctrine of special creation.

Explaining the first doctrine, Dennis said that the holders of this doctrine were of two kinds: those who entirely denied the interference of God in creation, and those who believed that only the original germs had been created by God, and afterwards, creatures spontaneously and gradually grew and developed. His example of a thinker of the latter group was Lamarck who attributed the variations of species to external circumstances, though his claim, Dennis said, was rejected by

1. James Dennis, al-Muqtataf (1884), pp. 199 - 205.

the naturalists of the time. He added that Darwin was another naturalist who ascribed the variations of species to the principle of the survival of the fittest as applied to all beings - plants, animals, and man; but his view of man was refuted by Wallace. He also stated that evidence was still against the theory of evolution more than for it.

Dennis' refutation of the doctrine of spontaneous generation without God was based on religious principles. He argued that proofs for the existence of God, such as miracles and prophecies are evidence of the incoherence of spontaneous generation and the falsity of materialistic philosophy. He asserted that there was neither rational nor experimental evidence to suggest that inorganic elements were changed into organic ones and hence developed. This doctrine, to him, was the most absurd among the heretic doctrines because it did not differentiate between 'matter' and 'soul' and between 'instinct' and 'intellect'.

Dennis objected to Darwin's theory of evolution by maintaining that it was still a mere hypothesis which was subject to refutation. He explained that when Darwin found that the law of natural selection did not provide his theory with sufficient reasoning he proposed the law of sexual selection. Dennis held that there were many facts which remained without explanation in this doctrine, the facts which proved its inaccuracy. For instance, the evolutionary theory had taken no account of the great differences between the species and the living genera, the sudden extinction of some species and the sudden appearance of others without evidence of gradual evolution, and the extermination of some species and the generation of others in the successive geological ages. Moreover, Dennis argued that the fixity of species was a permanent truth, approved by many scientists who found that the prolonged time proposed by Darwin for the process of evolution was incredible. In the fossil records of skeletons and skulls found in the upper layer of the earth on

which our ape ancestors were supposed to live, scientists, he said, found no evidence to connect man with the apes; and this rated heavily against Darwinism despite Haeckel's attempt to find an ostensible link between ape-man and modern man.

According to this evolutionary theory, Dennis argued, man's intellectual, spiritual, and moral faculties were supposed to be developed from the animal life and this was incompatible with Revelation and with the fact that man had the ability to articulate and express his ideas and feelings from his earlier days of existence; besides, no animal had ever been known to articulate comprehensively.

In his commentary on the second doctrine of evolution by Providence, Dennis stated that when scientists and philosophers displayed how God had created life and how His wisdom of design and purpose worked in Nature, there would be, then, no harm or contradiction between God's words and actions. As for the doctrine of special creation, Dennis found that it was the most acceptable one for believers in Revelation because it maintained that God, after creating the universe, plants, and animals, made man in His image, as distinguished from other beings by soul and mind, though he remained bodily like the animals. Dennis joined this group of believers in 'special creation' and agreed with them that the rudimentary organs as they appeared in some animals denote God's will and purpose in the secrets of creation into which man should not inquire.

Dennis in his article stresses the action of Providence in every event, and rejects natural laws which exclude Providence. He reiterates continually concepts such as Providence, Will, Wisdom, Design, Purpose, and other phrases which are common with most theologians. Although the title of his article clearly refers to the theme of the creation of the universe, he concentrates on the creation of man, though a little is said of the universe at the end of the article. His opposition to Edwin Lewis

in a controversy over Darwinism will be examined later.

In the same volume of al-Muqtataf (1883-4) there appeared an article, in translation, entitled "Geology and the Deluge"¹ by the Duke of Argyll (George John Douglas Campbell). In his address, the Duke wanted to give theoretical proofs in favour of 'the Flood' as related by Moses, though he declared that his approach had nothing to do with the words of Genesis. His evidence for the occurrence of the Flood was based on three arguments. First, he asserted that the story of the flood was a historical incident, prior to becoming a religious tradition. It was transferred by memory from one generation to another in the history of mankind. He quoted LeNormant, a contemporary French scholar, who believed that the incident was a popular tradition which had been recognized by the three civilized races of the world, Arians, Semites, and Hamites, though the French scholar did not have the direct intention of resolving the problems of Genesis. The Duke argued that traditions were often regarded as historical facts which could be accepted as a universal evidence, because it was impossible for many generations in different periods of time and various places of the world to agree exactly upon precise historical details.

His second piece of evidence was based on natural observations and mental reasoning. The Duke explained that as a consequence of the flood which was caused by the ruin of the Crinan Dam in Scotland, he noticed that the rushing water which carried mud and pebbles away left them in different places. By applying this phenomenon to the remains of 'the Flood', he referred to the existence of boulders which were different from the original rocks on which they settled. He explained that these boulders had been carried away on icebergs when the land submerged in the

1. Ibid., pp. 538 - 542.

flood, and were left on mountains or hills when the ice thawed. He suggested that the height of the sea at the time of the flood was between 1300 and 1400, even 1600 feet in Europe, above the then sea-level; and consequently, he believed that Scotland, Britain, and the whole of Europe except Munich and Madrid, were covered with water when the incident took place.

His reasoning for the proposed height was that when a quarry was opened at a height of 1390 feet above the sea-level in a mountain in North Wales, a bed of gravel and heaps of shells and pebbles were seen at the top. He argued that it was impossible for such shells and marine gravel to be the result of erosion and were, therefore, deposited by the Flood. He also asserted that the process of the inundation was not permanent but transitory, because there were no living and dying shells but piles of shells which were scattered at the top of the mountain. He also held that the sea must have been in agitation because there were no regular beds of gravel as are frequently seen in sedimentary rocks; and finally he pointed out that the Welsh mountain was not volcanic and so could not have emerged from the sea to the height of 1400 feet.

As a consequence of his hypothesis, the Duke concluded that the catastrophe of the deluge affected both animal and man. He believed that man co-existed with the mammoth and rhinoceros because man-made implements and the skeletons of these animals were found side by side in mud and gravel all over Europe. By this argument he wanted to show that man witnessed the catastrophe of the deluge and because of its disastrous effect the incident became a myth. He rejected the scientists' view that the remains of rude implements were to be explained by an earlier, savage race of men, by referring to the existence of rude

implements which were used by the civilized Spaniards in the Mexican Empire as revealed by specimens of stone weapons which were sent to him by Lord Lorne. His refutation of the savage theory of man's origin which was held by evolutionary scientists attempted to demonstrate that science would never tell the truth about such issues.

Although the Duke, in his article, stresses the value of observation and reason, he professes that both reason and sciences are incapable of giving solutions to the origin of man. In his closing sentence he states: "And if with regard to many questions which we desire most of all to solve we feel the incapacity of our own reason, and the limit of our own intelligence, after all we are but driven to this, that the great hope of all religion is that "we shall know even as we are known".¹ The Duke was known as a follower of the cataclysmal doctrine in geology. In his article he tried to support the catastrophic view of the deluge by rational and physical explanation, though the catastrophic theory was rejected by geologists, particularly Charles Lyell. The Duke was against the evolutionary theories and he could, to an extent, exert an influence on science, particularly by his logical arguments and eloquent language. But he does not refer to the existence of man's skeletons or skulls when he speaks of the remains of stone implements, shells, and animal fossils. Neither does he give an account of the non-existence of man's remains in the upper layers of the earth's surface at the time of the deluge in so far as he claims that the event was witnessed by man.

The article in the Arabic version is a translation of the English text. The interpreter, Ya'qūb Ṣarrūf, points to the Duke's high position in literary circles, and praises his work, and it is perhaps

1. "Geology and the Deluge", by the Duke of Argyll, Good Words (1884), Vol.25, P.34.

fair to join Sarrūf and the Duke of Argyll together, for both recognized scientific development and both believed in scientific research, provided that it came to explain the Word of God.

2. Man: The Fairest Stature and the Noblest Creature

The problem of man in the Arabic literature of the nineteenth century was similar to that in the British natural sciences sometime earlier. Man was always viewed as the noblest creature on earth despite his similitude to the animal in terms of form and physiology.

In his Majmū'a, Shumayyil referred to Huxley's conflict with Wilberforce at Oxford in 1860, and to the acceptance of the transmutation theory by the majority of contemporary scientists in Europe.¹ Shumayyil claimed that he himself had written on the transmutation theory in 1855 in his book "Force and Matter", and that he attributed the transmutation to changes in the environment and to germs themselves.² He also remarked that Huxley's investigations on the fossil skulls maintained the close connection between the man and the ape, in contrast to Owen's classification.³

Shumayyil claimed that to separate man from the animal world because of his mental and moral faculties was mistaken, for the distinction between the two was a matter of progress within the framework of natural selection. He went further to assert that the animal possessed a sense of comparison, induction and deduction, and that the difference was a matter of degree not of kind.⁴ He referred to A.R. Wallace's attitude towards man's supremacy by pointing to his argument in which the latter explained that as soon as man attained a degree of civilization by using language and maintaining principles for social relationships, he no longer became subject to the principle of natural selection. Shumayyil

1. Shibli Shumayyil, Majmū'a, op. cit., vol. I., pp. 78 - 79. Shumayyil quotes Huxley's reply to Wilberforce, which we mentioned above.

2. Ibid., P.79.

3. Ibid., P.138. Shumayyil refers to Huxley's work entitled Man's Place in Nature which we have presented in the first section of this work.

4. Ibid. , p.189.

stated that he did not accept the whole argument, though it might be useful if the idea of progress adopted by Wallace was entirely directed to man's interests on earth.¹ He accepted the sociological view that man's function in society was similar to that of the organs of the body, and that the phenomenon of sociality was not confined to man, but it was seen throughout the animal world, particularly among apes.²

Bishara Zalzal, in his article entitled "Man",³ stated that man's noble place among all creatures had been maintained by many Arab writers such as Muhammad al-Qizwīnī whose description of man's characteristics appeared in the latter's work entitled 'Ajā'ib al-Makhlūqāt (The Wonders of Creatures). Paraphrasing Qizwīnī's words, Zalzal pointed out:

God has created man in the best image, bodily and spiritually, distinguished him with articulation and mind, publicly and in secret, decorated his appearance with the senses and the finest form, and his internal world with the highest faculties. He conferred upon him the brain, putting it in the loftiest place and providing it with memory and thought in order to make 'a prince' of his soul, 'a minister' of his mind, 'soldiers' of his faculties, 'a postal-system' of his feeling, 'servants' of his organs, and a whole realm of his body.⁴

Zalzal disapproved of Linnaeus' classification of man with the apes under one label of primates. He stated that Linnaeus' classification was rejected by scientists, particularly Buffon, because it caused disbelief. He appreciated Buffon's attempt to assign a special rank to man which he called bimain. Nevertheless, he admitted that scientists necessarily agreed on classifying man as the highest mammal only because man in bodily characteristics belonged to that kind of animal.

1. Ibid., P.171.

2. Ibid., vol.ii., P.47.

3. "Man", Bishāra Zalzal, al-Muqtataf (1877), pp. 202 - 205.

4. Ibid., P.203.

In his essay entitled "The Nature of Man, His Origin and the Time of His Appearance",¹ Zalzal approved of the definition of man as "a sensible mechanical body", a definition adopted by some French intellectuals. Zalzal stated that there were two theories about man's origin, the traditional concept of special creation by God and the Darwinian theory. He declared that modern scientists based their theory of man's descent from the ape on the external similarities between the two. The author found in this hypothesis an element of superstition which could be seen in the fictitious novels on ghosts and monsters. He believed in the doctrine of special creation as opposed to Darwinian man simply because there was no species that linked man to the ape, 'the missing link'. He stressed the creation of man by God and asserted that there had been only one original pair who had been created in a certain place in the world, and that their descendants had left for other parts of the world in search of subsistence.²

Zalzal rejected George Pouchet's idea that pairs of human beings originally existed in different places over all the globe. He remarked that Pouchet deliberately wrote to spread atheism. He attacked the French scientist by describing him as a blind man who, failing to offer rational evidence, went astray in rhetorical exposition.³

As regards the time of man's appearance, Zalzal - unlike Ṣarrūf - gave no definite time though he referred to some geological investigations which proposed that man was to be found in the third or fourth geological period. But Ṣarrūf, in his article on "The Time of Man's Appearance"⁴, was aware of the great difference between the theological

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1. Bishara Zalzal, al-Muqtataf (1877), pp 234 - 237.
 2. "Was Man Created in a Certain Part of the Earth when First Appeared?", Bishara Zalzal, al-Muqtataf (1877), pp. 254 - 257.
 3. Ibid., P.255.
 4. Y. Sarruf, al-Muqtataf (1880-1881), pp. 229 - 230.

estimation of some 7,000 years and the geological hypothesis of some hundreds of thousands of years. In his second article¹ on man's appearance, Şarrūf cited Lyell's books The Principles of Geology and The Antiquity of Man which supported the view that man had existed some hundreds of thousands of years ago.

In the fourth article of his series on man, Zalzal dealt with "The Distribution of Mankind on the Earth".² He attributed man's distribution all over the world to the phenomenon of migration, a phenomenon which seemed to him to be rooted in man's nature like an instinct. The search for food was, to him, the cause of migration. He closed his article by stating that the new view held by some contemporary scientists of natural history was inconsistent with the Old Testament's version of man's existence, a couple in a certain place.

Zalzal's contributions to scientific literature appeared in a book entitled Tanwīr al-Adhān fi 'ilm Hayāt al-Haywān wa'l-Insān wa Tafāwut al-'Uman fi al-Madaniyya wa'l 'Umrān (The Illumination of Minds in the Biology of Man and the Animal and the Differences of Nations in Civilization and Culture). The book is dedicated to Sultan 'Abdul Hamīd with a poem of praise and to Lord Cromer whose picture decorates the following page. It contains many illustrations which show, for example, contemporary illustrations of the cell theory, and the similarity in bone structure among mammals. Theories of naturalists such as Linnaeus, Buffon, Lamarck, and Darwin are discussed. The author's account of man appears on page 161 of his work. Zalzal assigned a chapter to the differences between man and the ape. He admitted the facts of physical resemblance between the two, though he considered man as a distinct species. He

1. Y. Şarrūf, "The Time of Man's Appearance" (1880 - 1881), pp. 317 - 319.
 2. Bishāra Zalzal, "The Distribution of Mankind on the Earth", al-Muqtataf (1877), pp. 273 - 275.

referred to man's erect posture, the size and weight of his brain, and his muscles and arms. Zalzal held that man possessed a human soul in contrast to the animal soul, for man's soul seemed to him to be immortal, and that religion was an essential element in the nature of mankind. He offered information on many religions and provided the reader with statistical lists of the relative populations of Muslims, Christians and Jews in some parts of the world.

In an article "What is Man?",¹ As'ad Ḥaddād of Alexandria explored a new ground in the comments on the issue of man. He remarked that man as an articulate being was not a sufficient basis for his advancement, for there were still peoples in Africa who were closer to animal life, despite their ability to articulate. It was knowledge, particularly science, that created that vast gap between the westerner and the barbarian peoples of the East. He stressed that by "articulate being", philosophers did not mean only the phenomenon of languages, but the whole branch of knowledge and sciences which are the basis of civilization.

Similarly the anonymous author of an article entitled "Knowledge and Ignorance",² wrote that the primitive people all over the world offered sound evidence for the fact that civilization was the work of science.³ He argued that if ignorance had been part of man's inborn nature, he would never have been able to eliminate it. Therefore, he arrived at the conclusion that of all creatures man had been wise in his origin but had fallen ignorant and brutal until Divine religion was sent to him in order to illuminate and guide him towards science which in turn

1. "What is Man?", As'ad Ḥaddād, al-Muqtataf (1878), pp. 262 - 263.

2. "A Treatise on Knowledge and Ignorance", Thamarat, (June 15, 1875), pp. 3 - 4.

3. The term 'science' in Arabic apparently includes the exact sciences, as well as philosophy, literature, and theology.

brought about progress and civilization. Nevertheless the author warned the reader that science could be ill-used by some of its advocates who might turn its virtue into vice, for the writer does not consider science the exact source of civilization and progress, he stresses that science itself was granted by God who thereby distinguished man from beasts.

In his article on "The Origin of Man and his Remains",¹ Ya'qūb Şarrūf referred to the differences among scientists over the question of Darwinian man. He said that the advocates of this theory were not able to offer geological evidence for man's origin. He stated that physiological investigation supported the ape man theory, although the idea of special creation was still acceptable. The idea of difference in kind or in degree was another problem which raised conflict among scientists, philosophers, and theologians. Şarrūf claimed that Darwin himself was unable to understand the nature of animal's mental faculty as displayed in The Descent of Man.²

Şarrūf offered a discussion of the philosophers and scientists, old and new, who dealt with the question of difference between human and animal mental processes and recommended to the reader Daniel Bliss' work "The Primary Lessons on Rational Philosophy" on the topic. He also referred to the conflict between some scientists such as DeQuatre-fages, a French naturalist, who stated that the animal lacked morality and religion, but possessed a degree of mental activity, and to Darwin, who believed in the existence of some elements of morality in the animal nature. Şarrūf's analysis implicitly admits the Darwinian theory of descent, though the writer does not fail to place God firmly in the process of the construction of man's mental and moral faculties.³

1. "The Origin of Man and his Remains", Ya'qūb Şarrūf, al-Muqtataf (1879), pp. 89 - 96.

2. Ibid., P.93. Probably Şarrūf refers to Darwin's argument that some scientists objected to the point at which animals become able to contrive abstract concepts to which Darwin suggested no solution except he added a new puzzle by asking: "But who can say at what age this occurs in our young children?" The Descent of Man, op. cit., P.84.

3. This article is supplemented by a note which rejects the attacks in the Bashīr, the Jesuit periodical, on Şarrūf's ideas about the mental power in animals. Ibid., P.96.

Two men who adopted an enthusiastic attitude towards Darwinism and particularly towards Darwinian man were Ismā'īl Mazhar and Salāma Mūsā, both active in the early decades of the twentieth century. The former began the translation of Darwin's The Origin of Species into Arabic in 1911,¹ and the latter published his work entitled Nazariyyat at-Tatawwur wa Asl al-Insān (The Theory of Evolution and the Origin of Man) in 1928.

In his introduction to the Arabic edition of The Origin, Mazhar explored the writings on evolution contributed by some Arab writers such as Ibn Maskawayh (d. 421 A.H.) and Ibn Khaldūn. He cited a passage from Ibn Maskawayh's book entitled Tahdhīb al-Akhlāq (The Adjustment of Morals) in which the latter confirmed the close similarity between primitive man and the ape as well as the probability of the ape's development into man.² In the introduction which amounted to a hundred pages, Mazhar offered an exposition of Herbert Spencer's principles of evolution and progress and their accordance with Darwin's theory of natural selection. He also expounded Darwin's principles of heredity, transmutation, the struggle for existence, and the survival of the fittest.

Mazhar referred to Arthur Keith's book, The Antiquity of Man, in which the English scientist estimated that man had appeared on earth some one million years ago.³ Mazhar's attitude towards Darwinian man was documented in his comments on Darwin's work The Descent of

1. We can be certain about the date since Mazhar himself declared, in his preface to a book called Madhhab an-Nushū' wa'l-Irtiqā' (The Doctrine of Evolution and Progress) (1923), that he began his translation of The Origin in 1911.
2. Ismā'īl Mazhar, Aṣl al-Anwā', an Arabic translation of The Origin of Species (Beirut and Baghdad: an Nahḍa Press, 1973), P.11.
3. Ibid., P.45.

Man. He stated that Darwin's evidence for man's descent from the ape was indisputable, particularly in terms of form and function.¹ He also cited Huxley's embryological evidence which favoured the descent theory,² and referred to his conclusion that the gap between the ape and the dog was more than that between man and the ape. Mazhar was aware that the descent theory implicitly supported materialism, but failed to satisfy the contemporary spiritualists and philosophers who asserted that Darwinism was unable to explain the nature of life or the phenomenon of the soul.

Mazhar assigns some forty pages of the introduction to presenting a biography of Darwin which is mainly based on Francis Darwin's Life and Letters of Charles Darwin which we have already cited many times. The full Arabic translation of The Origin appears in a large book of 784 pages most of which was Mazhar's work, although the last two chapters (14 and 15) of the work were more recently translated by Muhammad Yusuf Hasan after Mazhar's death.

Although Salama Mūsā's interest in Darwinism was apparent early in the twentieth century, the time during which he wrote his brief treatise on "The Advent of Superman",³ his book on evolution and man's origin was not to be published until 1928. In his autobiography which was translated into English by L.O. Schuman, Mūsā pointed out:

It was in 1909 that I composed a small treatise, which I called "The Advent of Superman", and sent to the late Jurji Zaydan, editor of al-Hilal. He printed it after having cut a few reckless passages. This will give the reader an idea as to the general unrest to which an Egyptian youth of only about twenty years of age was exposed, a youth who was touched and even burned by the impact of the new culture that cut off his links with the past, and directed his eyes to the future. The treatise was soon exhausted, and a reprint was never made, but I revised it somewhat, and included it as a chapter in my book Today and Tomorrow.⁴

1. Ibid., P.53.

2. Ibid., P.55.

3. Salama Mūsā, Maqdimat as-Superman (The Advent of Superman) (3rd ed., Cairo: 1962).

4. The Education of Salāma Mūsā, an English translation of Tarbiyat Salāma Mūsā by L.O. Schuman (Leiden: E.J. Brill, 1961), P.68.

Probably, in response to the debate over Darwin's doctrines at the Fabian Society during which time Mūsa was in England a member of that society,¹ he wrote his treatise on the superman. Mūsa himself referred to Jurji Zaydan's suggestions concerning the publication of The Advent of Superman in the latter's letter that "I leave out a few paragraphs and some lines here and there which he thought(t) might offend the public in their religious tenets". "Never mind", he wrote in that letter, "if we criticise the Christians, for they have themselves already written the critique of their religion. But the Muslims we must treat with circumspection they have not yet produced any self-criticism."² This sentence does not appear in the Arabic text perhaps for obvious reasons. In fact Zaydan's letter reflects the situation, not only in Egypt but also all over the Arab world. One can fairly add that the attitude is, more or less, still the same in the contemporary press.³

Mūsa wrote that he had read The Origin of Species and that Darwin's influence dominated his manner of thought throughout his career. He also referred to his own interest in rational philosophy, particularly in Nietzsche's doctrine of the superman. In his own words, he remarked: "There is no doubt that my strong sympathy for Darwin and my predilection for the theory of evolution have left their traces in my style of writing, as I have remained under his influence since the beginnings of my cultural growth."⁴ Comparing Darwin's approach with that of Nietzsche, Mūsa stated that: "Darwin never uses any dramatical expressions; he is very modest and measured, and writes with extreme caution as if he were afraid that the reader will just believe all he says. He is quite the opposite of Nietzsche, therefore. Nietzsche

1. Ibid., P.70.

2. Ibid., P.153.

3. al-Faysal, one of the leading periodicals in Saudi Arabia, recently asked me to contribute an article. I responded by sending them a paper dealing with the balance between religion and natural thought in Lord Tennyson's In Memoriam. They refused to publish it, yet encouraged me to submit another dealing, this time, with a different topic.

4. Salāma Mūsa, The Education of Salama Mūsa, op. cit., P.81.

rages like a heavenly fire, whereas Darwin gives us the impression that he is building patiently with earthly clay. Nietzsche's style is very self-consciously sentimental, even when he gives a correct analysis of objective facts; Darwin, on the other hand, writes so conscientiously and intelligently that he makes you feel as if he has shaken off his sympathies and his personality, as we shake off the dust from our person."¹

Mūsā's support of scientific thought is evidenced in his attempts at establishing a scientific society in Egypt early in the 1930's akin to those he had witnessed in London. He and Professor Fu'ād Ṣarrūf, the celebrated Ya'qūb Ṣarrūf's nephew, founded the Egyptian Academy for Scientific Culture which aimed at disseminating scientific thought and encouraging scientific pursuits. But unfortunately, the founder himself was expelled from the Society because of political involvement, as he himself remarked that:

It was indeed rather unfortunate that we had selected a majority of its members from among the government officials. Anyhow, when Husayn Sirri (Pasha), who was then under-secretary of state in one of the ministries, was elected chairman of the second assembly, he sent me a letter dismissing me from the Academy 'with thanks'. All the members who were "officials" had agreed to this measure, with the exception of Professor Isma'īl Mazhar.²

Mūsā's book The Theory of Evolution and the Origin of Man was originally published as a series of articles in the Balāgh.³ Mūsā - like Mazhar - cited some Arab writers who alluded to the metaphysical theories of evolution. He, for example, remarked that Ibn Maskawayh in al-Fawz al-Aṣghar (The Minimum Success) stated that the difference between man and the ape was not great and that if the ape bridged this gap, it

1. Ibid., P.81.

2. Ibid., P.89.

3. Ibid., P.89.

would become man. Mūsā also cited al-Qizwīnī's ‘Ajā'ih al-Makhlūqāt (The Wonders of Creatures) in which the latter had pointed out that:

Dust (earth) is the first order of beings, and their last is a regal and pure soul. Thus, the beginnings and ends of metals are connected with plants, the beginning of the plant is connected with metals and its end with the animal, the beginning of the animal is related to the plant and its end to man, and the beginning of human souls is connected with the animals and their end with divine souls.¹

Mūsā, like Maḏhar, compiled information about the theory of evolution as expounded by Lamarck and Darwin. In his account of Darwinian man, Mūsā referred to the similarity in form between man and the animal. He argued, for example, that the difference of the vertebrae in the giraffe, the elephant, and man was a matter of size, for the fact remained that all three species had seven vertebrae in number. He attributed the difference in size and colour to the environment within the framework of natural selection.² With regard to the difference in mental powers between man and the ape, Mūsā cited Darwin's arguments presented in The Descent of Man,³ and agreed with Darwin's conclusion that the difference was a matter of degree and not of kind. Nevertheless, he attributed man's supremacy to three factors: first, man's reliance on sight more than on other senses, secondly, his skill in using his hands in manufacturing instruments, and thirdly, his articulate language.⁴

In the chapter entitled "We and the Apes", Musa wrote that the common people, apparently in Egypt, were not satisfied with Darwinian man because there were no species of apes in the zoos other than the small monkeys which rendered the theory unacceptable. He, therefore, offered a relatively detailed study of the gibbon, orang-utan, chimpanzee, and the

1. Salama Mūsā, Nazariyyat at-Taḏawwur wa Aṣl al-Insān (1st edition, 1928), (3rd ed. Cairo: 1957), P.15. Hereafter cited as Nazariyyat at-Taḏawwur.

2. Ibid., pp. 135 - 136.

3. Ibid., pp. 147 - 152; the passages which Mūsā cited in these pages are mainly taken from The Descent of Man, pp. 66 - 96.

4. Ibid., P.156.

gorilla. He stated that neither Darwin nor Huxley, unlike Haeckel, committed themselves to a direct declaration that man was descended from the ape.¹ Mūsā assigned particular chapters to the study of man's races, the principles of sexual selection, the primitive societies, and language, chapters which lack integrity and include much repetition. In the chapter on "The Origin of Religion", Mūsā asserted that religion first appeared as a power of magic, developed into paganism, and eventually into monotheism. He held that the doctrine of the devil was not ancient, for the term "Satan" was derived by the Jews from the Egyptian God of evil.²

Mūsā's idea of the superman again appears in a chapter entitled "The Man of the Future". He conceived of a strange figure in which the brain would be quite large and weighty where man's senses, except sight, would disappear together with his height, hair, and perhaps his language for telepathy might be the means of understanding.³ The last chapter of the book deals with Darwin's biography, a chapter which seems to be largely incoherent in one way or another, and appears to be added merely as an afterthought.

Mūsā's book on evolution and the origin of man seems to be composed of a number of essays which lack both integrity and a scholarly exposition of the scientific theory of evolution. Although it seems interesting to find that Mūsā attacks the Egyptian ministry of education which prefers the discussion of traditional literature to that of Darwinian doctrines in the curriculum of schools, it is also fair to assert that his book is not even valid as a school textbook. Mūsā's arguments fail to realize their aim being tainted with an inconsistency which deforms the whole theory. Repetition of ideas, arguments, and even

1. Ibid., P.172.

2. Mūsā attributed the development of monotheism to the lack of artistic ability in nomadic peoples such as the Jews and the Arabs. Ibid., P.238.

3. Ibid. , p. 255.

phrases and sentences are the dominant feature of the work.¹ Although Mūsā's style is not our concern here, we cannot help but admit that clumsiness, tautology, an unsoundness, are other features of the book.² The text lacks the spirit of art or science, for it can be considered neither as a literary work nor a scientific treatise. Isma'īl Maẓhar noticed Mūsā's inaccurate and imprecise language used in the latter's writings. Commenting on Mūsā's Arabic style, Maẓhar stated that:

His style, indeed, is colloquial. It does not cope with the requirements of the select Arabic style to be considered an Arabic style.³

In fact, Maẓhar's acute mind, his accurate manner in dealing with any topic in terms of analysis or translation, his versatile horizon of thought, and his distinct style and terminology, all allow him a unique place among the Arab advocates of scientific naturalism, though he tries to make a compromise between science and religion. His contribution to the scientific theory of evolution has manifested itself in two ways: firstly, in translating The Origin of Species into Arabic, and secondly, by adopting the theory, defending it, and popularizing it in a way which entitles him to be described as Darwin's "bull dog" in the Arab world.

Mūsā's works, as a rule, appeared in cheap editions, probably as a result of the writer's deliberate instructions, for when Mūsā was in London in 1910, he wrote a letter, the manuscript of which is still preserved at the Fitzwilliam Museum, Cambridge, to Wilfrid Scawen Blunt beseeching him to produce a cheap edition of his book: The Secret History of the British Occupation of Egypt.⁴

1. For example, compare Page 91 with 242.

2. For example, see the first sentence on Page 91, 105, 172.

3. Ismā'īl Maẓhar, Fi an-Naqd al-Adabī (Beirut: al-Hayat Press, 1965), P.127.

4. I take the opportunity here to thank "the Syndics of the Fitzwilliam Museum" who allowed me to investigate Wilfrid Scawen Blunt's papers and include Mūsā's letter to Blunt in my thesis. There are, in fact, many Egyptians such as M.A. Zahra, Muhammad A.H. Kādi, Sanieh al-Bakri, Seyd Maḥmūd, and others who were acquainted with Blunt in 1910 and after. For the letter, see Appendix.

IV. ARAB INTELLECTUALS AND SPONTANEOUS GENERATION

"Life is the Perplexity of Scientists"¹ was an article which appeared in the Muqtataf of 1878. The author tackled the problem of creation whether by Providence or spontaneous generation, and explained that the idea of spontaneous generation had been claimed a long time ago, but the scholar Redi, in 1668, proved that the worms which were considered as evidence for spontaneous generation were produced by fly eggs. Later, bacteria were discovered, said Şarrūf, and the controversy came to an end. He also explained that scientists were divided into two groups over this notion, some were in sympathy with Henry Charlton Bastian, others supported Tyndall. While Bastian believed in the spontaneous generation of life, Tyndall rejected it.²

In response, a controversy took place between Ya‘qūb Sarruf and Shibli Shumayyil when the former, in a one page commentary entitled "In His Hands, Life and Death" which appeared in the Muqtataf, referred to the controversial divisions on the origin of life in Europe and concluded that Tyndall and his supporters had won the battle. Şarrūf said that Tyndall wrote to Huxley telling him about his experiments which proved that only the germs in the air could generate life in the composite substance. To this piece of information, a letter of protest entitled "An Objection" was sent by Shumayyil to the editors of the Muqtataf, in which he rejected Tyndall's conclusions, and argued that the air itself was necessary for generation because if the air was "cut off"³ from any living organism, there would be no life. He said that perhaps Tyndall based his conclusions on some other proofs, therefore, he requested the editors of the Muqtataf to provide more information on spontaneous generation. Şarrūf handled the problem in his essay "Life is the

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1. "Life is the Perplexity of Scientists", Y. Şarrūf, al-Muqtataf (1878), pp. 177 - 180.
 2. An account of this controversy has been presented in Section One, chapter two.
 3. Shumayyil refers to the ambiguity in the phrase (cut off) which was used by Şarrūf.

Perplexity of Scientists" mentioned above.

In this essay Şarrūf explained that he did not by his phrase "cut off" mean that air must be taken away from the composite substance, but that the air should be purified from germs. He expounded that Tyndall exposed fifty bottles containing different composites to a heat of 250°, and then, Şarrūf added, he laid 27 of them open to the pure air at the height of 7000 feet in the Alps, and exposed the rest to the impure air in a stable. The result was that none of the 27 bottles was spoilt while all the rest except two were spoilt. As a consequence of his experiments, Tyndall, Şarrūf said, believed that the germs were the origin of bacteria and that bacteria died at a temperature of 140°F.

Şarrūf was in sympathy with Tyndall's view, yet he presented Bastian's argument that Tyndall did not offer anything new. In his closing paragraph, Şarrūf stated that his point of view had nothing to do with those of the scientists and their conclusions, except when they were in accordance with "faith". Tyndall's conclusions supported the faith, therefore, they were preferred by Şarrūf to those of Bastian which explicitly denied the operation of divine providence. Although in fact, Şarrūf was mistaken concerning Tyndall's religious belief, for the English physicist was an earnest atheist, as his Belfast Address revealed. Moreover, in his argument on spontaneous generation, Tyndall did not speak of faith, but he stressed the fact that germs are the generators of life, while Bastian held that matter itself engenders life.

Ya'qūb Şarrūf, in the answer he directly attached to Shumayyil's letter, refuted the idea that oxygen was a generator of life, suggested by Shumayyil, by explaining that Tyndall exposed the composite to pure air but nothing was created by its oxygen.

Shibli Shumayyil in a letter entitled: "Perplexity is the Cause of Search"¹ which was published in the Muqtataf, replied to Şarrūf's arguments in the above article. He criticised Şarrūf's praise of Tyndall's view by asserting that the problem of creation by spontaneity or by Providence was not then settled. He argued that so far as oxygen was a necessary element for the preservation of life in all organic beings why then was it not proper for the generation of life itself? As a metaphysical materialist like Büchner, Shumayyil believed that 'matter' had an internal power of creation. His objections to Tyndall's germ doctrine were the healthiness of the internal air in the bottles for spontaneous generation, and the degree of heat necessary for the destruction of the germs within. He argued that the germ theory, which taught that there had been only a certain number of germs or original species, and that these species were developed according to a natural law in one specific form so that each part in the germ-cell contributed to the constitution of the body in which each organ had its own function - what is known as pangenesis-- did not give a satisfactory account of the rudimentary organs which were anomalous and had no functions in contrast to the Wisdom and Perfection supposed in the God-created germs or species. Here the author implicitly denied the fixity of species and the process of special creation.

He delicately criticised Y. Şarrūf's statement: "Belief for us is preferred to observation"² by saying that if the idea of spontaneous generation proved to be true, there would be no harm to religion as was the case in the discovery of the earth rotation, the argument by which Şarrūf himself defended the rotation theory against the traditional doctrine, as we have seen above. Shumayyil remarked that danger lay in

1. Shibli Shumayyil, al-Muqtataf (1878), pp. 243 - 245.

2. *Ibid.*, P.245.

the preconceptions which would deeply affect the scientific search. His arguments, however, reveal his scientific pursuit as well as his philosophic tendency. He was - like T.H. Huxley - a faithful worshipper of science.

Shumayyil's belief in materialism is presented in many articles and controversies which have been collected in his work entitled Majmū'at Shibli Shumayyil in two volumes. He, for example, finds "All the Truth in Matter".¹ He claimed in this article that matter has the property of feeling and that life itself is its specific property. In his controversy with Iskandar Bārūdi, a contemporary medical doctor and author, over the nature of "Life"², Shumayyil asserted that life is a natural phenomenon like that of gravity. He even went further to declare that among all religions Islam alone seemed to him to be 'materialistic and practical' in its approach to dealing with the social interests of man not only on earth, but even in its conception of paradise as a place of trees, fruits and other things.³

In his letter to the editor of al-Hilal about the question of spontaneous generation⁴, Spridon Abu ar-Rūs refuted the view that Tyndall destroyed the belief in spontaneous generation, as Zaydan himself had claimed in his series of articles, particularly the fifth article which deals with "Life".⁵ Abu ar-Rūs is correct in attributing the germ theory to Pasteur whose controversy with Pouchet he discussed. He asserted that Pasteur published his conclusions in 1862, and that Tyndall began his experiments six years later, only to confirm Pasteur's conclusions. Probably, Abu ar-Rūs, who was a scholar at the

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1. Translation of the title of an article by Shibli Shumayyil, Majmū'a, Vol.1., P.318.
 2. Ibid., P.322.
 3. Ibid., "The Origin of Life", P.352.
 4. "Spontaneous Generation", Spridon Abu ar-Rūs, al-Hilāl (1894-5), pp. 897 - 900.
 5. "Essentials of the Natural Sciences", Jurji Zaydān, al-Hilāl (1894-5), pp. 810 - 815.

Medical School of the Jesuit College, Beirut, had read the works of the French scientist at first hand, while Zaydan, no *doubt*, derived his information from English sources. Zaydan referred to Tyndall's articles which appeared in The Nineteenth Century review, as we have already seen in the first section of this work. In fact, the Hilal repeats, in these articles what al-Muqtataf had displayed some ten years before.

In an article entitled "Spontaneous Generation"¹ which was published in the Muqtataf, Jamīl Sidqī az-Zahāwi attributed life to an unknown natural power. He believed that matter had the power of generating life and based his arguments on a philosophic approach. He said that Pasteur's evidence against spontaneous generation was refuted by many scientists, and that the advocates of spontaneous generation argued that germs were directly constructed from matter because they were progressive forms over a long course of time, and that the protoplasm was then made up somewhere on earth, unknown to scientists as yet. He held that matter had a vital force which was changed into natural forces like heat and motion. To prove the existence of this force Zahāwi uses the analogy of thinking. In just the same way as there is communication between nerve and brain without alteration in substance, particles of matter when they ceased to be in motion returned to their original substance without alteration. He criticised the opponents of evolutionary theory because they failed to see the theory as a whole. Instead they chose to criticise it on trifling points. He held that the evolutionary theory was true and what seemed to be objections were weak and refutable. He stated that man and the ape had been derived from one origin, not only because of their similarities in form but also because of their embryological process of development. He criticised the holders of the doctrine of special

1. Zahāwi, al-Muqtataf (1896) pp. 900 - 905.

creation by God's will, and he wanted to know why God did not create new species if the old ones had been independently created. He also rejected the argument which related the non-existence of new species to God's will. He argued that some people believed that life was a natural property, and others held that it was a supernatural thing. He suggested that life was a quality like that of the chemical property of a substance and there would be no vitality without matter. He argued that man's progress was based on the development of his brain, and that man's brain was larger than the ape's, and that the brains of civilized people were larger than those of the primitive. To support his view that life was a natural property, he wanted to know from those who believed in immortality and in the duality of body and soul how life went away from an animal which was put alive in a tightly screwed bottle. Supposing that the soul was immortal, he argued, it must then either be a substance or a property like ether, for instance, in order to penetrate the walls of the bottle, and to believe that the soul went away in an unconceivable means which was beyond man's mental faculty was, to him, against both science and mind. In short, he believed that life was a natural property like electricity and heat.

He offered two examples to support his belief in spontaneous generation. For those who stressed the impossibility of life directly from matter he compared man to a tree. The seed of a tree, the original 'life', was only, perhaps, one part in a billion of the tree itself; a part so minute it could be safely ignored. His second instance was a mere hypothesis. He explained that the lighting of a candle was the result of a union between carbon and oxygen at a certain temperature, and by supposing that the conditions necessary for this were not to be found on earth, then, a first lighted candle would be needed by which a second

could be kindled, and if the first were to be extinguished a third would have to be kindled from the second and so forth, for the survival of light. He believed that the life of organic beings was similar to the light of this candle and was based on a principle of touch between beings on earth, in fact, and not in a metaphysical world.

As a poet, az-Zahāwi has not separated himself from his world of images and metaphors. In order to explain scientific phenomena he appeals to imaginary interpretations and metaphoric instances. His idea that life is a natural property unknown to scientists as yet, is a metaphysical hypothesis. The poet who attacks the metaphysicians remains a metaphysician himself as revealed in the majority of his poems on scientific themes.

V. THE REACTION OF SOME CHRISTIAN ARABS TO DARWINISM

What has been referred to as "The Lewis Affair" in historical books was a conflict which took place in the Syrian Protestant College between a number of the lecturers on Darwinism. It was in 1882 that Edwin Lewis, a qualified doctor at the Medical School, and an ordained minister, delivered an address which was considered to be in favour of Darwinism. Our concern here is to examine the arguments of the incident and reactions to it, not to tell its history, as has been done so often in the past.

The controversy in point followed the publication of Edwin Lewis' speech in The Muqtataf (in 1883) under the title of: "Knowledge, Science, and Wisdom".¹ Lewis was a professor of chemistry and geology at the Syrian College, where he gave his oration on the 19th July, 1882. It was a ceremonial address to students who had finished their studies. In the opening paragraph, Lewis urged the graduates to love knowledge and further their scientific interests, for God, who conferred upon them mental faculties, required them to use their knowledge properly. He asserted that what students had read at the College was but a small part of the large number of discoveries and splendid investigations to be made. He said that coal existed in the layers of the earth before the existence of man, and that God had put it there in order to aid man's progress, and that his students were indebted to both their ancestors who provided them with such knowledge, and to their descendants who would require their new contributions. He also said that their duty was dual in nature; a duty towards their country and another towards posterity.

He explained that knowledge was not random information about objects or ideas but that science was the product of a positive

1. "Knowledge, Science, and Wisdom", Edwin Lewis, al-Muqtataf (1883) Vol. VII, pp. 158 - 167.

mind which looked for facts, investigated their causes, and put them in a system. Thus knowledge, to him, was lower in rank than science because knowledge, he argued, could be obtained by mere attention while science needed investigation and effort of mind. He added that by going beyond the visible object, and by looking for the causes and effects of phenomenon one could approach the field of science.

Speaking of the scientist, Lewis gave the example of Charles Lyell who founded geology on scientific grounds by applying the principle of cause and effect to his previous observations. He said that Lyell made the old observations into a science. He criticised Lyell's opponents and pointed out that after long resistance Lyell's principles were now generally accepted. Attacking the traditionalists, Lewis remarked that "their minds were engaged by dull and futile thoughts".¹ He believed in Lyell's theory of the gradual creation of the earth according to natural laws over a long period of time. Perhaps Lewis' attitude to Lyell's opponents who were mostly of the theological camp was considered as in favour of Darwinism because Darwin himself based his principles mainly on geological facts.

His second example of a scientist was Darwin himself. Lewis appreciated Darwin's assiduity in coming to his conclusions concerning the causes of variations in plants and animals over twenty years, as depicted in his masterpiece The Origin of Species. Lewis remarked that Darwin's theory was based on scientific investigation and it disclosed many facts which contributed to human progress. He asserted that this doctrine would never affect the primacy of man and his spiritual nature, if it were true, and if it were not, science itself would reject it. It would be wrong to infer that Darwinism automatically implied the deval-

1. Ibid., P.162.

uation of Moses, Solomon, Paul and Newton to the level of apes and primitives. He held that the idea of gradual evolution had nothing to do with either the origin of the first man or with man's responsibility towards God. Finally, he goes on to refer to the achievements of Pasteur and Koch affecting animal diseases and the discovery of bacteria.

Lewis tackled the difference between science and wisdom. He said that science had its own limitations because although it might provide man with some information about the existence of God but it could never explain what God was and what was His nature. Neither, he said, can a telescope show us God, nor can a microscope disclose man's soul. He added that chemistry also remained dumb about the secrets of life. Wisdom, to him, was the fear of God and the avoidance of vices. He declared that God would never inform man about his origin, but he did not give any reason for this statement. He believed that man was God's son and that he would be eternal and the heir of paradise. Wisdom, to him, was God's gift to those who sought it in His words and actions, and it was to be found in the wonders and beauties of life. He held that both science and Revelation were lights by which man understood God's design. By science, he said, man deduced the wisdom of the Maker, as it appeared in Nature and its laws; and by the belief in Revelation, which was to him the essence of wisdom, man would know the truth of God's design. Thus science came to explain God's design.

His general religious attitude can be seen in the closing sentence which is worth quoting:

Therefore, we must not scorn or belittle any branch of Knowledge. Let what increases our Knowledge by science be a deed coming from God by means of His actions as came down His teachings in words. God is one and He is the sender of Revelation and The Creator of Nature. Does His word contradict His action, or is it feared that his action might contradict His word?¹

1. Ibid., P.167. The translation of Lewis' article by Mr. N. Bawarshi appears in Nadia Farag's thesis, Appendix IV, pp. 406 - 415. The translation here is mine.

If this address has not been altered for publication, there seems to be little reason for the later condemnation of Edwin Lewis. On the contrary, there is every reason to believe that Lewis' attitude was similar to that of Kingsley and Philip Gosse, advocates of natural theology. The passage reveals not only that Lewis was a believer but also a pious missionary. By setting wisdom at the apex of knowledge and science, Lewis gives priority to faith which was, to him the basis of wisdom. The only point that counts against him in the eye of his opponents is his belief in the gradual evolution of the earth and the organisms over a long period in contradiction to the few thousand years postulated by the theologians. Perhaps Lewis' warm sympathy for Darwinism came as such a shock to the devout in the Syrian College because the attempt at compromise between Darwinism and Revelation came from such a respectful authority. Nevertheless, this article was quickly followed by another written by Ya'qūb Ṣarrūf, tutor in Natural History at the college and his periodical the Muqtataf was destined to be the stage of the controversy on Darwinism.

Ṣarrūf skilfully guided the conflict and provided the reader with a good explanation of Darwinism beginning with an essential biographical sketch of Charles Darwin and a brief commentary on his works.¹ This article appeared two months after the death of Darwin (on the 19th April, 1882). Ṣarrūf first gave a long appraisal of Darwin's efforts, achievements, and his position among scientists, and went on to stress Darwin's correspondence with William Van Dyck, who was a professor of zoology at the Syrian College at the time. In his article on "Charles Darwin"² which appeared in the Muqtataf in 1882, Ṣarrūf pointed out that perhaps Darwin's reading of William Van Dyck's paper on the mongrelization of dogs in Beirut was his last scientific investigation.

1. "Charles Darwin", Ya'qūb Ṣarrūf, al-Muqtataf (1882), Vol. VII, pp. 2 - 6.

2. Ibid., pp. 2 - 6.

The Life and Letters of Charles Darwin published by

Francis Darwin five years later confirmed Şarrūf's supposition. Francis Darwin pointed out that:

In April (1882), he (Darwin) received a letter from Dr. W. Van Dyck, lecturer at the Protestant College of Beyrout. The letter showed that the street dogs of Beyrout had been rapidly mongrelised by introduced European dogs, and the facts have an interesting bearing on my father's theory of sexual selection.¹

Şarrūf, in his article, remarked that a letter dated 3rd April was received by Dr. W. Van Dyck assuring him of the significance of his paper and showing Darwin's anxiety for its publication because it had a bearing on his theory of sexual selection. Francis Darwin, in the biography, remarked that:

The paper was read at a meeting of the Zoological Society on April 18th - a day before my father's death. The preliminary remarks with which Dr. Van Dyck's paper is prefaced are thus the latest of my father's writing.²

In his preliminary remarks Darwin stated that W. Van Dyck had the opportunity to observe changes in the Syrian dogs over a period of twenty years, a fact which Van Dyck himself asserted in his paper.³

It is interesting to note that, at this period, there were scholars within Syria who were playing an important role in some of the latest investigations in scientific naturalism. Perhaps it is more interesting to find that when W. Van Dyck was corresponding with Darwin in his last days, Şarrūf was relating the communication in his periodical. This is, I believe, the first time that this correspondence has been discussed.

The other distinct characteristic of Şarrūf's article

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1. Francis Darwin, The Life and Letters of Charles Darwin (London: John Murray, 1887), vol. iii., pp. 252 - 253.
 2. Ibid., P.253.
 3. "On the Modification of a Race of Syrian Street-Dogs by means of Sexual Selection". By Dr. W. Van Dyck. With a Preliminary Notice by Charles Darwin, F.R.S., F.Z.S.", Proceedings of the Scientific Meetings of the Zoological Society of London for the Year (1882), pp. 367 - 370.

was the abundant praise lavished on Darwin's character and the high reverence shown for his works. Şarrūf explained that no other scientific doctrine was as widespread as Darwinism, as was instanced in the huge number of books for and against it. Şarrūf stressed that Darwin's hypothesis that man had been evolved from a kind of ape did not contradict the Word of God. He quoted both Canon Barry's words that: "the principle of Natural Selection was by no means alien to the Christian religion"¹ and McCosh's statement on evolution that:

All this proves that evolution is a law of God as much as gravitation or chemical affinity, or vital assimilation,

only to assert that belief in Darwinism did not mean the exclusion of God's providence.²

Şarrūf's second article on "Darwinism"³ appeared in July, 1882. From the very beginning he stressed that he would not include his personal views and that his only interest lay in explaining to the reader what was meant by Darwinism according to those who accepted the theory. He explained that the doctrine of evolution had already been suggested by Greek and Arab philosophers such as Aristotle and Abu Bakr Ibn Tufayl. He quoted al-Khāzinī on the gradual purity of gold, and perhaps it is worthwhile to have an adapted translation of al-Khāzinī's words:

If the ignorant people have heard the learned ones saying that gold is a substance that gradually becomes perfect, they will understand that it changes from lead into zinc, brass, silver, and gold. They do not know that what philosophers mean is similar to their saying that man has gradually become what he is. By this philosophers mean that man has come to his perfection by progress, not that he has been an ox, afterwards he becomes an ass, then a horse, an ape, and finally a man.⁴

Şarrūf referred to the difference between the old doctrine of special creation and the new evolutionary one. He said that the former ideas were negated by Darwin who accumulated a great deal of fact

1. Canon Barry *of the Westminster Abbey*; al-Muqtataf (1882), op. cit., P.6.

2. McCosh: An American philosopher and theologian, Ibid., P.6.

3. "Darwinism", Y. Şarrūf, al-Muqtataf (1882), Vol. vii, pp. 65 - 73; 121-127.

4. Ibid., P.65.

which related all the variations of animals and plants to one or a few species as origins. He asserted that the scientists who held the doctrine of special creation could not illustrate the similarities between the old forms of species and the new ones. He pointed to the similarities in form among the vertebrates, particularly in their bone-structure. He also explained the rudimentary organs according to laws of heredity in the evolutionary theory, and Von Baer's evidence of the similarity in the embryos of different species. He argued that if animal species were created independently, why were the new species similar to the previous ones? Afterwards, he explained Lamarckism and showed the difference between it and Darwinism.

In his third article of the series on "Darwinism"¹, Ya'qūb Ṣarrūf dealt with the principle of natural selection which was based, he said, on two facts: first, that the increase of food was incompatible with the increase of beings therefore, a great number of beings would die at an early stage and those which survive were considered the fittest, secondly, that children usually inherited the characteristics of their parents, particularly beneficial merits which would settle as signs of distinction. To explain these principles he gave many examples from the domestication of birds and animals and drew attention to the difference between artificial and natural selection, and he stressed the importance of time by referring to the prolonged time scale adopted by evolutionary theory.

His objection to Darwinism concentrated on the application of natural selection to man. He explained that Darwin and Wallace who discovered the law had different opinions in applying it to man, and that Wallace found no connection between man and animal concerning the former's faculties of intelligence and morality. Ṣarrūf said that Darwin

1. al-Muqtataf (1882), pp. 121 - 127.

wrote a large book, The Descent of Man, to support his view that man's faculties differed from lower animals only in degree, not in kind. He asserted that the majority of philosophers rejected Darwin's arguments on man's faculties because they were meagre and artificial. He, therefore, took sides with the majority and concluded his article by saying that the wise man was he who believed in what was sent down to him by God, and in what was right and clear in science. Although Şarrūf believed in natural selection, he refused to apply it to man because of man's superiority to other animals in mind and morals. It seems that Şarrūf's view of man's superiority sprang from religious rather than scientific or philosophic sources.

In the section assigned for "Controversy and Correspondence" in the Muqtataf an article entitled: "Darwinism" was written by James Dennis¹ who heavily attacked Edwin Lewis' paper. It was deplorable for him and others, he said, to find such a learned man sympathising with that doctrine. Dennis asserted that his aim was not so much to challenge Darwinism directly as to show publicly his disapproval of Lewis' oration. He declared that Darwin did not believe in Revelation and that his doctrine was devoid of scientific evidence. To prove that Darwin was an atheist, Dennis gave a translation of Darwin's letter to a research student at the University of Jena on 5th June, 1879, in which Darwin defined his attitude towards belief.² He also added that Ernst Haeckel, the German atheist, had cited Darwin's letter in his address to the German Association of Science some weeks before.

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1. al-Muqtataf (1882-3), Vol.VII, pp.233-36. His surname appeared in the periodical as "Anas", perhaps the author wanted to avoid "Dennis" because it carries the unfortunate meaning, in Arabic, of 'impurity' or "impure".
 2. For the discussion of this letter, see page 186 of this work.

Dennis' attitude reflects many of Darwin's opponents. Carlyle, he said, confirmed that the Darwins, Charles, his father, and Erasmus, all were atheists and that Charles Darwin's brother once told him that Erasmus' religion could be found in the expression Omnia ex conchis, meaning everything comes from a shell. Dennis further remarked that George Mivart described Darwinism as "an absurd idea", and the German naturalist Virchow rejected it because he could not find evidence among the fossil records of ape-skulls that might be considered as having a resemblance with man. He quoted the American geologist Dana, who based his refutation of the theory of descent from the apes on the difference in size between man's skull and that of the orang-outang, the largest ape, as well as the absence of a link between man and the ape in all collections of fossils available. He added that Darwinism, which voiced the principle of the survival of the fittest, would shortly disappear because it was not the "fittest" principle. His evidence for the decline of this doctrine was that in the last annual meeting of the Presbyterian Church in America about 500 of the assembled clergy, professors, and writers all rejected evolutionism because they found it an irrational doctrine based on illusions and belittling Revelation and Christianity.

Dennis, in fact, completely directs his criticism at Darwinism, in spite of his claim to be uncontroversial. He cites passages and gives the ideas only of opponents of Darwinism. Like the majority of Arab writers, Dennis' arguments are based on generalities, for example, the claim that science refutes Darwinism, that scientists considered it as an illusory doctrine, and that Darwin sought the denial of Christ in his hypothesis. Being of the ecclesiastical camp, Dennis presents his arguments in a religious frame and a propagandistic style.¹

1. From his style and the way by which Dennis exhibits his ideas, the Arab reader easily gathers that the author is a foreigner. Dennis' translations from English or German into Arabic lack precision. He uses, for example, the Arabic word masāha (a surface measure) to denote "size" in his quotation from the American geologist, Dana. Ibid., P.235.

Whereas Lewis' analysis of Darwinism has every reason to be described as objective, subtle, and fine, Dennis' seems to be more impressionistic than cogent. Moreover, his preconceptions govern his arguments.

A rejoinder to Dennis' communication appeared in The Muqtataf¹ in which Lewis defended his address by referring to the parts in which he stressed the existence of a Providence beyond the laws of nature and man's need for a wisdom exceeding both knowledge and science. He rejected Dennis' claim that Darwin aimed at the denial of Christ for he found no evidence in Darwin's work to support Dennis' prejudice.

Lewis argued that there must be a limit drawn between religion and science because there were many great scientists who were not Christians, and their science cannot be rejected because of their beliefs. Religion should not impede the progress of science. As against Dennis' claim, he stressed that Darwin's position as a scientist was indisputable and his reputation world-wide, and as for Darwin's supposed atheism, he cited Darwin's: "There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one,"² to show Darwin's respect of Divine power. Perhaps, Lewis is not aware that Darwin was agnostic, more or less, like Thomas Huxley.

A letter by Yusuf Ha'ik of Alexandria appeared in the Muqtataf joining the debate on "Darwinism"³. The author began his letter by stating that he was Christian and a believer in Revelation. However, he supported Lewis' attitude towards Darwinism and referred to Lewis' admirable reputation in point of morals and scientific research. He stated that Lewis' address had the admiration of all the audience, (which consisted of many Syrian scholars, men of letters, and graduates), who

1. "Darwinism", a rejoinder by Edwin Lewis, al-Muqtataf (1882-3), Vol.VII, pp. 287 - 290.

2. Ibid., P.289; quoted from The Origin of Species, op. cit., pp. 459 - 460.

3. Ibid., pp. 290 - 292.

showed their approval by hearty applause. He also claimed that one of the anti-Darwinian lecturers at the College told him afterwards that Lewis' address was marvellous and did not abuse religion in any way.

Yusuf Ha'ik pointed out that the majority of scientists and philosophers were unbelievers, yet their principles and hypotheses were still taught and publicly discussed. He referred to the fact that Dennis' concentration on Darwin's atheism in his attack implicitly attached the accusation to Lewis himself. Such an accusation, he said, would affect the lecturer and the College itself, particularly when it spread among ordinary people. Ha'ik's letter ended the controversy in point.

The controversy then spilled over into incidents reported in the Muqtataf in an article entitled "The Syrian College"¹ Şarrūf explained that the Board of the Syrian College forced Lewis to give up his job as the professor of chemistry and natural history. Students of the medical department protested against the Board's decision and demonstrated in favour of their teacher. They submitted a claim to the Senate on 16th December, 1882, seeking to know the reason for Lewis' expulsion, to which they received no answer. When the students were asked to return to their lectures, they refused. The college reacted by suspending for a month the forty students who had signed the claim. As a consequence of the suspension of the students, Cornelius Van Dyck, William Van Dyck, and John Wortabet² resigned. Thus Lewis, the Van Dycks, and Wortabet constituted one side, while Daniel Bliss, the President, George Post, backed by James Dennis formed the other camp. Şarrūf gave the full text of the claim excluding only the names of the professors,

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1. "The Medical Department at the Syrian College", Y. Şarrūf (1882 - 1883), pp. 371 - 373.
 2. John Wortabet was an Armenian medical doctor who had lived in Aleppo before he joined the staff at the Syrian Protestant College. He wrote a book on "Religions in Syria", and compiled an English-Arabic dictionary. He was a traditional moralist as we shall see later.

George Post, Daniel Bliss, of whom the students complained.

Following the departure of Lewis and the resultant resignations, Post was left as the only lecturer in the Medical School. This, coupled with new requirements by the medical authorities to teach additional subjects (for which the College had no staff), led to a decline in the department not rectified until the appointment of new staff in 1884. Moreover, Cornelius Van Dyck's resignation did much harm to the reputation of the College and the American Mission as a whole, for Van Dyck soon attached himself to a hospital established by the Greek Orthodox community. The words of an American missionary quoted by A.L. Tibawi shows how harmful Van Dyck's challenge was, the missionary said:

We are terribly hampered in our dealings with the natives by the course of Dr. Van Dyck. An open enemy would do us less harm ... he opposes our choicest plans.¹

When the Medical Department was reopened, English became the language of instruction, for the new members of the staff, with the exception of George Post, had no Arabic.

In his comments on "the Lewis Affair" which appeared in his book Majmū'a (1910), Shibli Shumayyil remarked that the conflict between the lecturers of the Syrian College had apparently been attributed to their differences over Darwinism, whereas the conflict actually ran deeper than that. He declared that he had sent an article to the Muqtataf at the time in which he tried to compromise between a Darwinian and a traditional ethics, but the editors refused to publish it.²

One of the most interesting consequences which resulted from the Lewis affair was the emergence of the idea of the scholar's

1. A.L. Tibawi, American Interests in Syria, op. cit., P. 245.

2. Shibli Shamayyil, Majmū'a, op. cit., vol. I. P. 268.

declaration of belief in the process of joining the staff at the Syrian College, a phenomenon which readily reminds us of the declarations of faith adopted by the universities of Oxford and Cambridge.¹ Stephen Penrose, in his book on the history of the Syrian College entitled That They May Have Life, a strange and, perhaps, provoking title to some Arab readers, disclosed the inclusion of a statement in the regulations of the College which seemed analogous to the 39 articles. Penrose pointed out that:

The unfortunate Lewis affair of 1882 impelled the Trustees to require the signing of a "declaration of principles", provided for in Article VIII of the Constitution but never theretofore demanded. They considered this declaration to be "an indispensable pre-requisite to entering upon the functions of 'adjunct-Professor'," the lower permanent faculty rank. They requested the Board of Managers to prepare such a creed, which embraced "the divine inspiration, authority, and sufficiency of the Holy Scriptures... represented in the consensus of Protestant creeds, as opposed to the erroneous teachings of the Romish and Eastern churches. ... the chief aim of this institution... is to train up young men in the knowledge of Christian truth, and if possible, secure their intelligent and hearty acceptance of the Bible as the Word of God and of Christ as the only Saviour and at the same time inspire them with high moral purposes and consecrated aims in life."²

Though the dissemination of Protestantism may have been regarded as the College's aim, the founders apparently failed to influence many of the non-Christians who formed a considerable proportion of the students in the 1880's. In the chapter entitled "Religious Problems"³, Penrose discussed the causes of that failure. He attributed the failure of converting the Muslim students to the continuing differences that existed among the Christian sects, a state of affairs that "had no appeal to the practical minded Mohammedans,"⁴ and to their stubborn antipathy towards the Christian doctrine of the Trinity. The strict application of Evangelical teachings, to Penrose's mind, was another reason which

1. For information on the declarations, see the combined paper of Dr. W.H. Brock and R.M. Macleod, The British Journal for The History of Science (Mar., 1976), vol. IX, Part 1, No. 31, pp. 39 - 66 .

2. Stephen B.L. Penrose, That They May Have Life (New York, 1941), p. 47.

3. Ibid., p. 130 .

4. Ibid., P. 131.

brought about many religious conflicts between the Board, on the one hand, and the Muslim and Jewish students, on the other. When "on the 12th of January (1909), 98 of the 128 Moslem students presented a petition to the faculty respectfully requesting the withdrawal of the regulations requiring attendance at religious services and instruction,"¹ the authorities of the College refused to comply with their requirements, as a result of which a student strike occurred which was supported by the press in both Syria and Egypt. However, through the intervention of the Ottoman authorities it became no longer compulsory for non-Protestant students to attend religious services. Moreover, "Early in 1916", Penrose wrote, "additional demands were made on the college, to the effect that Moslem religious services be established and courses in Moslem ethics be introduced into the curriculum."² But the college did not entirely submit to the new demands although attempts at reconciliation between the various interests were made.

In the series of articles on the natural sciences which appeared in al-Hilal in 1894 - 5, Jurji Zaydān offered a scholarly exposition of Darwinism preceded by a brief biographical sketch of the British scientist.³ He referred to Darwinian principles of natural selection and the survival of the fittest as well as presenting some objections to Darwin's theory of transmutation. He explored the contemporary sciences, particularly physics, chemistry, and biology. Perhaps, the last article in the series is the most interesting simply because it deals with the bearing of the natural sciences on the issues of immortality and Resurrection, as will be seen later.

1. Ibid., P.135.

2. Ibid., P.144.

3. "Charles Darwin", Jurji Zaydān, al-Hilal (1894-5), pp. 82 - 87; "Essentials of the Natural Sciences", pp. 605 - 613; 647 - 654; 729 - 738; 764 - 772; 810 - 815; 846 - 852.

An article entitled "Darwinism"¹ which appeared in the Muqtataf in 1896, was originally an address written in English by Dr. Haddad and delivered at the Scientific Society of St. Andrews in Alexandria. The author began with Arab evolutionists such as Abu Bakr ben Tufayl and A.L. Khāzinī and went on to explain Darwinism, its main principles, and its refutation of special creation. He gave many instances and arguments in favour of Darwinism, and in his conclusion he asserted that Darwinism was not in conflict with religion. He said that Darwin's evolutionary explanation of life increased his personal belief in God whose greatness manifested itself in the process of creation by giving life to only a few species and all those innumerable creatures they generated.

Haddād's address is an accumulation of ideas and explanations which we have already seen present in Ṣarrūf's articles, particularly the passage quoted from Al-Khāzinī which appeared in Ṣarrūf's first article on "Darwinism" in 1882, quoted above. He does not offer any fresh arguments for or against the theory. The reader of the Muqtataf is already acquainted with the theory and perhaps is disappointed to find nothing new in this article. In fact, I give this article as an example to show that the periodical al-Muqtataf began to decline into repetition at the turn of the century and that Darwinism was never fully opposed on scientific grounds in the Arab world and what has been written on it is either translations from European writers, or an adaptation of their ideas. It seems that the Christian authors, particularly the Protestants, who introduced the theory tended to try to reconcile traditional thought and the new doctrine. However, what I have presented so far gives a picture of the impact of scientific naturalism only among the Christian élite and

1. "Darwinism", Dr. Haddād, al-Muqtataf (1896), Vol.XX., pp. 249 - 258.

it is therefore worth drawing attention to how Darwinism was received by distinguished Muslim intellectuals such as Afghāni, Muhammad 'Abduh, and Isma'il Mazhar.

VI. AN ISLAMIC REACTION TO SCIENTIFIC NATURALISM

Jamāl ad-Dīn al-Afghāni's Islamic philosophy consists of the ideas and arguments which are presented in his sole treatise entitled: ar-Radd 'ala ad-Dahriyyīn (The Refutation of Materialists).¹ Goldziher points out that Afghani wrote this booklet while he was in Hyderabad, India, in 1880. It was originally written in Persian and its first Arabic version appeared in 1885. It was translated by Muhammad 'Abduh, an admirer of Afghāni, with the help of Abu Turāb, Afghani's servant. A translation of the work into French by A.M. Goichon from the third edition of the Arabic text (1902) came out in 1942. It is a scholarly translation and very close to the Arabic text. In addition, there is a wealth of notes which save time and trouble for the European reader. An English translation of the booklet was attached to An Islamic Response to Imperialism: Political and Religious Writings of Jamal ad-Din al-Afghani by Nikki R. Keddie, which appeared in 1968. Keddie has used the Persian text but refers to the differences between the Persian and Arabic versions. Her comments on the treatise, both in the introduction and in that part of the book assigned to the critical study of Afghāni's writings, are convincing and valuable.

'Abduh's Arabic translation is a presentation of Afghāni's ideas in a superb Arabic style. The work was written at the request of Muhammad Wasil,² a school teacher of mathematics who seemed to be worried about Islam on the introduction of naturalism into India by Sayyid Ahmad Khan (1817 - 1898) who began to preach it in the 1870's. Afghāni's purpose in writing his treatise was mainly to attack Ahmad Khan's followers and

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1. Jamāl ad-Dīn al-Afghāni, ar-Radd 'ala ad-Dahriyyīn, edited by Dr. 'Uthmān Amīn (Egypt: al-Khānj Publishers, 1955). Hereafter cited as The Refutation.
 2. His communication with Afghani and the latter's answer are translated by Nikki R. Keddie, op. cit., pp. 131 - 132.

his innovations in Islam, which were called: "naychariyya" (the term means the holders of the natural doctrine).

Afghāni opens the treatise with the Muslim's slogan: "In the name of God, the Merciful, the Compassionate" to introduce the reader to the following Quranic verse:

so give then good tidings to my servants who give ear to the Word and follow the fairest of it. Those are, they whom God has guided; those - they are men possessed of minds.

The verse approaches the significance of belief by appealing to the mind by which man decides what is right or wrong. Afghāni goes on to define naturalism as: "The root of corruption [the ugliness of adversity] and the source of foulness. From it comes the ruin of the land, the perdition of man,"² and his militant temperament appears from the very beginning.

His definition is preceded by Afghāni's view of religion. He remarked that: "Religion is the mainstay of nations and the source of their welfare. In it is their happiness and around it is their pivot."³ Afghāni stated that he would explain naturalism whose corruption had caused the decline and the extinction of many nations, in the light of true history and rational evidence. He begins by classifying Greek philosophers into divinists and materialists. The first group, he said, separated matter from the abstract entity and believed that all objects would come to a Being indescribable and unconceivable. Intellectuals such as Pythagoras, Socrates, Plato, and Aristotle were of this group while Democritus and Epicurus formed the materialistic grouping. Afghāni explained that when materialists were asked about the causes of variations and the properties of substance, they attributed these qualities to their nature. He subclassified the materialists into four groups. First were

1. Arthur J. Arberry, Koran Interpreted (1974), "The Companies", P.473.

This verse appears in The Refutation (Arabic Text), op.cit., p.15 .

2. Nikki R. Kiddie, op. cit., P.132, the phrase between the brackets appeared in the Arabic version, P.15.

3. Ibid., P.132 .

those who ascribed the laws of design and perfectability of beings to chance. The absurdity of these thinkers, he said, lay in their claim to understanding without reasoning from causes and this was the source of their failure.

The second group were those who believed that all beings had fixed forms from immemorial time and they would remain so for ever because every germ was incorporated with an organism of full constitution and every organism in turn had a germ in it, and so on. Afghāni rejected their notion by arguing that the holders of this doctrine suggested an existence of indefinite quantities in a definite form and this was, to him, one of the primary impossibilities.

The third group were those who believed in the hierarchy of plants and animals in kind, not in particles, because, Afghāni said, they thought that the germs of animals and the seeds of plants were made as moulds for other germs and seeds of the same kind on earth. Objecting to this idea, Afghāni pointed out that its holders failed to notice that there were many malformed animals which produced beings in full constitution and vice versa.

The fourth group, Afghāni said, tended to ambiguity in their statements. He argued that Epicurus, who held that man came to his perfect image gradually from the lower animals, did not give any evidence to support his hypothesis, and when geology proved the invalidity of the hierarchical idea of species, some intellectuals of this group adopted the idea of special creation, uneasily combining it with ideas on the constitution of germs and their development towards perfection. He referred to the controversy on the constitution of germs by explaining that some of the last grouping believed that germs had been created only

once, when the burning earth began to cool; others held that germs were still constructed somewhere near the equator where temperatures were intense. Both failed, said Afghāni, to illustrate the origin of life in these germs, particularly when they recognised that life was active in the meanest ones.

As for the controversy on the development of germs, Afghāni explained that some of the evolutionists held that every species had its own germs and that those germs tended to move according to their nature and absorb what was proper for their growth by feeding on lifeless particles, while other evolutionists believed that the germs of species were identical in their essence, but that in the course of time, the differing conditions of place and external effects produced different species. At the head of this group, said Afghani, was Darwin who claimed that man had been an ape and gradually developed into an orang-utan and afterwards into pygmies and at last into Caucasian man.

Afghāni argued that according to Darwin's view it would be possible for a flea¹ to become an elephant or vice versa in the course of prolonged centuries. Afghāni's opposition to Darwinism can be summed up in the following points. He wanted to know what Darwin's answer would be if one asked what sort of external factors were those which caused the variations in the trees and plants of Indian forests insofar as they were fixed in one soil, their branches shooting in one atmosphere, and their roots watered by the same water. He also wanted to know the causes of variations in fish in both Lake Aral and the Caspian Sea² as far as they live in the same water and share the same diet. "I cannot" said Afghāni, "see him answer except by dumbness."³ Secondly, he wondered how Darwin would answer if one were to ask him how blind necessity guided those germs

1. A mosquito in the Persian version ; *ibid.* p.136 .

2. Cassine [*sic*] in the Arabic version, P.20.

3. The Persian version: "What answer could he give except to bite his tongue?", P.136.

from their meanest form to the highest image of perfection in both form and spirit, "except to crumple like an urchin and to fluctuate among the waves of perplexity and doubt forever." Afghāni felt pity for Darwin, "the poor man", who was taken to "the ignorant paths of illusions and the ordeals of superstitions" by the close similarity between man and the ape. The false similarity with which he wanted to rescue himself from "the pains of embarrassment and the sighs of blindness."¹ He treated ironically Darwin's example that dogs, whose tails were cut off by a society for a period, would produce descendants born without tails by explaining that what Darwin wanted to say here was that nature ceased to bestow tails because they were no longer needed. He wondered whether "the poor" Darwin was deaf to the news of circumcision, which had been practised by the Hebrews and Arabs for thousands of years and none had yet been born naturally circumcised.

Afghāni continued his attack in a chapter entitled "On Naturalists' Aims in Detail".² He said that naturalists wanted to pull down the high castle of religion, to cast man down from his lofty state of humanity to the mean base of bestiality, to abolish his nobility which was maintained by religion, and to ignore the principle of competition by which man could achieve his progress and civilization. Beside, naturalists, he said, denied the future life only to belittle the sense of sinning and to encourage the vices of corruption, crime, and treachery.

In a chapter entitled "On the Benefits of Religion",³ Afghāni deals with what religion confers upon man by way of doctrines and virtues.⁴ The principal doctrines were three: first, that man was the noblest creature on the earth; secondly, that every believer could be

1. J. Ad-Dīn al-Afghāni, The Refutation, op. cit., (1955), P.21.

2. Ibid., P.39.

3. Ibid., P.28.

4. "Virtues" will be seen in the chapter dealing with the question of morality.

certain that his community was the noblest and that all others were in error and vanity; and thirdly, the idea that man came into this world in order to adjust himself by acquiring knowledge and virtues for the future life.

It seems that Afghāni did not differentiate between naturalism and materialism perhaps because both schools directed their interests to the study of sensuous phenomena neglecting everything spiritual or metaphysical. In order to prove the corruption of naturalism, Afghani gives an historical survey of the development of this doctrine in many nations. In his survey he asserts that the appearance of naturalism in a nation becomes the main cause of its decline. None of the authors who wrote about this Islamic philosopher has tackled the validity of his historical arguments. Writers on Afghāni have given much attention to the political role of his religious ideas. Albert Hourani gives a substantial biography of Afghani, his political activities, and his religious innovations. In explaining his thought, Hourani concentrates on the analysis of Afghani's proclamations on pan-Islamism, solidarity in the Muslim world, the adoption of modern sciences, and the rational interpretation of Islamic law for the welfare of society.

Afghāni's adoption of modern thought into Islamic philosophy appears at its greatest in his reply to Ernest Renan's lecture on "L'islamisme et la science"¹ delivered at the Sorbonne on 29th March, 1883. Renan claimed that the terms Arabic or Islamic art, philosophy, or science were erroneously used by Europeans, for there was nothing of the kind. He based his view on two main arguments: firstly, that the inferiority of contemporary Arabs was the result of their religious fanaticism, and secondly, that what had been known as Islamic civilization

1. Œuvres Complètes de E. Renan, edited by Henriette Psichari (Paris, 1947) Vol. i., pp. 945 - 965.

was entirely due to the labours of the non-Arab scholars who transferred the Greek and Roman cultures to the Arabs.

With regard to the first argument, Renan's own words reveal his attitude:

Anyone with a little knowledge of the things of our time can see quite clearly the actual inferiority of the Muslim countries, the decadence of the states governed by Islam, the intellectual incompetence of the races which base their culture and their education solely on this religion.

In order to provide evidence for this intellectual inferiority among the Arabs, Renan turned to the first century of Islam, a time in which he found no trace of philosophy or science, neither in the days of the Prophet's Four Successors nor in the reign of the Omayyads.

With regard to the second argument, Renan praised the non-Arab intellectuals who played a decisive role in the establishment of the Abbasids in Baghdad where philosophy and the sciences had flourished. He appreciated the work of Persian scholars who conveyed and preserved the scientific tradition of the Greeks. The caliphs Hārūn ar-Rashīd and al-Ma'mūn, who seemed to Renan to be semi-infidels, had his respect and esteem because they gave scholars a free hand to introduce other cultures into the Arab world. Renan particularly referred to the Syrian physicians who were employed by the caliphs to translate Greek philosophy and science into Arabic. He claimed superiority for the civilizations of Syria and Baghdad over the Latin world between the eighth and the thirteenth century, and attributed the superiority to their closeness to the Greek tradition.² He held that the absence of both philosophy and science from the Arab world in the thirteenth century and after was due to theological influence. He wrote that:

A partir de ce moment, a quelques rares exceptions pres comme

1. Ibid., P.946.

2. Ibid., pp. 951 - 952.

Ibn-Khaldoun, l'islam ne compta plus aucun esprit large; il a tué la science et la philosophie dans son sein.¹

In fact, Renan's attack, which seemed to be directed against religion, went further and attacked Arab science as a whole and astronomy in particular. The only learning which seemed to him to be Arabic was the Arabic language, nevertheless this language was described as inconvenient for metaphysics. Renan found that from the thirteenth century to the present, Islam persecuted both science and philosophy in a way similar to the Spanish Inquisition where terror of theological authority prevailed. He held that when Islam was weak, it allowed philosophy because it could not prevent it, but when it was strong it destroyed reason, by which he meant even to undervalue the time in which Islam allowed freedom of thought from its early days to the twelfth century.² Time and again, Renan declared that Islam set itself against free thought and science, in particular natural science. He referred to Rifā'a at-Tahtāwī's curious observations in his book on French society.³ Renan stated that Tahtāwī considered European science a heresy simply because it adopted natural laws. He also added that Islam, by killing the spirit of research and science, destroyed itself, for the last word of the Muslim in any discussion was: "Allah aalam, 'Dieu sait mieux ce qui en est' ".⁴ This

1. Ibid., pp. 953 - 954.

2. Ibid., P.956.

3. Rifā'a Rāfi' at-Tahtāwī was the first scholar who spoke of the European modern sciences in Egypt in the 1840's. He was educated at the Azhar and was sent to Paris where he remained from 1826 to 1831, during which time he became acquainted with the writings of Voltaire, Rousseau, and Montesquieu. When he returned to Cairo he became the head of a school of languages and afterwards, the editor of an official newspaper called al-Waqā'i' al-Misriyya (Egyptian Events). He translated about twenty books, mostly of a historical nature, from French into Arabic. Tahtāwī's "curious observations", in terms of Renan, were displayed in Takhlīs al-Ibrīz ila Talkhīs Pariz. Paraphrasing Tahtāwī's ideas on science and religion, Professor Albert Hourani points out: "Egypt must adopt the modern sciences and the innovations to which they would lead, and she could do so without danger to her religion."; Arabic Thought, op. cit., P.81. Also see Khayrī 'Azīz, Udabā' 'Ala Ṭarīq an-Niḍāl as-Siyāsi (Cairo, 1970).

4. Ernest Renan, Oeuvres Complètes de Ernest Renan, op. cit., vol.i., P.958.

dogmatic spirit' in the Muslim was, in Renan's view, more dangerous than superstition and was the cause of the decline of the Islamic world. In his conclusion Renan stressed that science, while it could establish a military and industrial civilization, also was capable of creating a social superiority in terms of moral values, liberty, and progress.

After nearly two months Afghani replies to Renan's arguments in the same journal.¹ He appreciated Renan's observations which unveiled a dark period in Islamic history, and agreed with the French philosopher on many points. But Afghani stressed two points: first, that Renan wanted to prove that Islam itself, as a religion, was de facto opposed to science, and secondly, that the Arabs by their nature disliked philosophy. Dealing with the first idea, Afghani asserted that all religions were the same in imposing supernatural values onto their followers in order to obtain obedience. He recognized that religion was "one of the heaviest and most humiliating yokes" to which man submitted, yet he considered religious teaching as a means of freeing mankind from barbarism. He admitted Renan's view that Islam more or less suppressed science and philosophy, and in his own words: "In truth, the Muslim religion has tried to stifle science and stop its progress. It has thus succeeded in halting the philosophical or intellectual movement and in turning minds from the search for scientific truth."² Nevertheless, he argued that the Christian world freed itself from religious obligations simply because it preceded Islam by many centuries and that: "Muhammedan society will succeed someday in breaking its bonds and marching resolutely in the path of civilization after the manner of western society, for which the Christian faith, despite its rigors and intolerance, was not at all an invincible obstacle. No, I cannot admit that this hope be denied to Islam."³

1. Journal des Debats (May 18, 1883), Afghāni's reply in French was translated into English by Nikki R. Keddie in her book: An Islamic Response to Imperialism, op. cit., pp. 181 - 187.

2. Ibid., P.183.

3. Ibid., P.183.

With regard to the second idea that the Arabs lacked the taste for science, Afghāni remarked that the Arabs in one century could absorb as much of philosophy and the sciences as other nations in several, despite the fact that some European countries were closer to Rome and Byzantium, the centres of civilization and knowledge. He also refuted Renan's view that science and philosophy were the work of only non-Arab scholars by saying that the Syrian scholars, Harranians, and those who were born in Spain like Averroës, Ibn Bāja, and Ibn Tufayl were all Arabs on the grounds of their language and ancestry. He concluded his argument by stating that the conflict between dogma and science on the one hand, and between religion and philosophy on the other, would never cease.

Renan was delighted that an Islamic authority - Afghani - concurred with most of his views on Islam. He appreciated Afghāni's rational approach, a quality which, to Renan's mind, entitled this Muslim shaykh the status of a respectable unbeliever like Avicenna and Averroës. Renan stated that he met Afghāni through Khalil Ghānem¹ and that his conversation with him stimulated his lecture at the Sorbonne. He insisted on the view that not all that had been written in Arabic or Latin should be regarded as Arabian or Latin, for the underlying thought of that language was important. He also referred to an observation (still current in Saudi Arabia) that men were led by terror to the practice of religion. Renan declared that there were not many like Afghāni in the Arab world who had freed themselves from Islam, and recommended that if they wanted the advancement of the Arabs, they should spread education among them.² Renan stressed the need for the free practice of religion and the separation between religion and civil authorities.

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1. Khalil Ghānem was a liberal Christian Arab who represented Damascus in the Ottoman Parliament for a short period. For more information, see E. Kedourie, Afghani and 'Abduh, op. cit., P.40; Thamarat (1877) (22 Nov.), P.4; Muqtataf, vol. 28 (1903-4), P.632.
 2. Renan writes: "Repandre l'instruction chez les musulmans", Oeuvres Complètes de Ernest Renan, op. cit., vol. i., P.964.

A number of recent authors have shown an interest in Afghani's work and life. Professor Keddie, for example, explored Afghāni's response to Western thought, or in her terms "Response to Imperialism". Commenting on Afghani's philosophical bent, Keddie remarks:

As far as Afghani's relationship to the Muslim philosophical tradition is concerned, his writings indicate an emphasis on the rationalist and scientific side of Muslim philosophy, and on the means that philosophy provided for new interpretations of religions and for speaking differently to the masses and to the intellectual elite.¹

Keddie argues that Afghāni's attempt to compromise between religion, philosophy, and science, was ambiguous, for his reply to Renan revealed "a much less exalted view of Islam than a superficial reading of the "Refutation" would suggest."² Commenting on Afghāni's attitude towards Islam as presented in his reply to Renan, Keddie arrives at the conclusion that "Afghani was just as categorical as Renan about the hostility of the Muslim religion to the scientific spirit."³ However, she appreciates Afghani's rejection of Renan's racial approach which seems to her to be more modern in its evolutionary spirit than that of Renan, and she refers to the fact that Afghāni's answer was originally written in Arabic and translated into French. Neither Keddie nor Kedourie, who also refers to this point, have suggested the translator whom I presume to be Khalil Ghānem himself.

Kedourie maintains Renan's picture of an irreligious Afghani and supplements it with an account of his role as an agitator in the framework of his political activities. He also asserts that the idea that Judaism, Christianity, and Islam were complementary as held by both

1. Nikki R. Keddie, An Islamic Response to Imperialism, op. cit., P.48.

2. Ibid., P.49.

3. Ibid., P.85.

Afghāni and 'Abduh for some time, was more or less a rejection of revealed religion. He offers Afghani's conflict with Renan as evidence for Afghāni's rejection of Islam.¹ Kedourie exclusively cites al-'Aqqād, Abdulla Nadīm, Adīp Ishāq, and Salīm 'Anhūri only to show that "Afghani had a reputation for heresy (zandaqa)",² though he remarks that both thinkers were not well-known in their lifetime. The reader of Kedourie's treatise on these Muslim reformists senses a hostility to them. Utterances such as 'liaisons', 'heresy', 'obscure', political 'agent', are used by Kedourie in order to describe the morality, beliefs, political and social activities of the two Muslims. Perhaps, a fair analysis of these men may turn their thought and activities into secular achievements similar to those of the writers of Essays and Reviews or even the group of English agnostics such as Leslie Stephen, Huxley, and Henry Sidgwick.

Kedourie enthusiastically adopted Lord Cromer's statement on 'Abduh's faith in which the former pointed out: "My friend 'Abduh was in reality an agnostic."³ Kedourie also exploited Rashīd Riḍā's statement that 'Abduh's opponents considered him "as mu'tazilite in tendency."⁴ Probably, every thinker passes from one state of mind to another and Afghāni and 'Abduh are not exceptions. Their varying attitudes towards doctrines and events can be considered as temporary reactions to certain circumstances which sometimes seemed to endanger their lives. It can also be argued that the juggling of contradictions sometimes performed by these Muslim thinkers in terms of rationalism, or agnosticism, and belief might be interpreted as a kind of hypocrisy, but it is possible that these were only tactical efforts, though much misunderstood. Perhaps, many of the differences and disagreements between Muslim and Christian writers can be read in these terms. Indeed, a scholarly discussion of this idea can be found in

1. Elie Kedourie, Afghani and 'Abduh, op. cit., P.15.

2. Ibid., P.16.

3. Ibid., P.2.

4. Ibid., P.14.

Hourani's work on Arabic thought.

In his substantial analysis of 'Abduh's secular tendencies, Professor Hourani maintains that 'Abduh's mind was open to modern thought, and that in order to bridge the gap between the Islamic and the modern, he expanded the traditional concepts of Islam as to include secular elements. Referring to 'Abduh's view that Islam always embraced the sciences and encouraged rational principle, Hourani asserts that "This indeed was the subject of 'Abduh's controversy with Farah Antun."¹ When Antun, like Renan, wrote that Islam suppressed science and stifled rational inquiry, 'Abduh, like Afghāni, retorted that the attitude of Christianity was no better than that of Islam towards philosophy and science.

The clash between Antun and 'Abduh seems to me a continuation of that of their masters, Renan and Afghani, for the arguments of the disciples draw on these origins and extend to the political construction of a modern State on the model of the West. Antun presented his views in a series of articles on Averroës which appeared in his own periodical al-Jāmi'ā but, later, in a book "Ibn Rushd's Philosophy", in a similar way to 'Abduh's work entitled al-Islam wa'n Nasrāniyya Ma'al-'Ilm wa'l Madaniyya which was originally published in the Manār. Commenting on 'Abduh's book, Robert M. Haddad points out that it: "may be legitimately regarded as largely an effort to refute Christianity in terms of its lack of suitability to the canons of Western liberal thought rather than to the principles of traditional Islam."²

'Abduh's book resembles Afghāni's The Refutation in two major ways: first, it displays a taste for polemic in style and argumentation, though rather more politely than in The Refutation whose Arabic

1. Albert Hourani, Arabic Thought, op. cit., P.148.

2. Robert M. Haddad, Syrian Christians in Muslim Society, An Interpretation (Princeton: Princeton University Press, 1970), P.90, n.124.

itself is also 'Abduh's, and secondly, it represents some Islamic doctrines as viewed by 'Abduh in a manner more or less like that of Afghāni. 'Abduh's work, consciously or unconsciously, maintains the significance of the educational role played by the non-Muslims in building up of the golden age of Arabic civilization. In the process of his demonstration of the tolerance of Islam with regard to science and philosophy he devotes nearly ten pages to distinguished non-Muslim scholars who attained high positions in the Islamic State. This portion is followed by a critical exposition of such foundations of Christianity as miracles, the authority of the clergy, the neglect of earthly matters, belief in the irrational, the belief that holy books contain all that is needed for this world and the next, and the discrimination between the Christian and the non-Christian.

'Abduh's account of Averroës appears at the end of his book al-Islām wa'n-Nasraniyya, although the opening chapter of the work already indicates the controversy between the two writers and deals with the Christian persecution of science. 'Abduh's first article in which he defends Averroës against Anṭūn's claim that the Muslim philosopher was an atheist or a materialist of some kind, is located on page 229 of the book which consists of 260 pages. The two writers differ in their understanding of Averroës' views on the creation of the universe, force and matter, immortality, and science - in contrast to sophism - as a basis for knowledge and communication with a spiritual power. While Anṭūn asserts, like Renan, that Averroës was a scientific naturalist or a materialist who wanted to base human knowledge on the positive science, like Comte and Spencer, 'Abduh stresses that Averroës believed in God as "Creative Mind" and in the immortality of the soul.

In 1906, Farah Anṭūn's periodical aj-Jāmi'a produced its first volume in America after its disappearance in Egypt for a period.

This volume contains a number of articles¹ on both 'Abduh and Afghāni. Antun puts his dispute with the now dead 'Abduh behind him, and calls him "the President", Avicenna's title in the Islamic world. In these articles Antūn deals with 'Abduh's views and Afghani's work The Refutation of the Materialists. The analysis is based on a personal communication between Antūn and 'Abduh, of some twenty letters of which Antun cites a few.² He especially refers to 'Abduh's view that the progress of the East would be achieved only by the rule of a just dictator (mustabid 'adel).³ In the second article of the series, Antun gives priority to 'Abduh preferring him to his master, for he believes that 'Abduh's ideas were closer to modern thought than Afghani's in terms of social affairs.⁴

In his article on Afghāni's philosophy⁵ Antūn stated that Afghani had no definite school of philosophy but he was an advocate of religious reform in the Islamic world. He added that The Refutation was the only work which could disclose Afghani's philosophic leaning. It is interesting to find that Antun attributed Afghani's small output to the habit of 'high position', or patronage, prevalent in the East.

Commenting on The Refutation, Antūn pointed out that Afghani's views formed an obstacle to the progress of Islam and were entirely inconsistent with modern civilization. He referred to the role

1. al-Jami'a (New York Publication, 1906), vol. I., pp. 32 - 35; 49 - 53; 122 - 129 (this article is a sketch of Afghani's biography by 'Abduh); 133 - 137; 145 - 157; 177 - 180; 196 - 202, 238 - 240.

2. Ibid., pp. 33 - 34.

3. Ibid., P.34.

4. Ibid., P.177.

5. Ibid., p.196.

of both Bismarck and Nietzsche in building up the place of Germany in history by adopting the philosophy of power. He held that the adoption of this mode of thought as a substitute for the lamb-like yielding to Islamic faith and Christian leniency, would raise the East from its stagnant condition. He found Eastern religions, particularly Islam, useless instruments, and claimed that modern civilization was based on positive sciences and those who rejected them and adhered only to religious thought would never see the light of modern life. With regard to the Islamic conquests, Antun held that they were the result of two tendencies: love of wealth and love of Jihād (holy war), as if they were Nietzschean in spirit. We notice here Antun's enthusiastic defence of scientific naturalism in which he sees a means for the development of the Arab world.

Antun attributed Afghāni's attack on naturalism to many motives: first, Afghāni's ambition to hold the leadership of Islamic thought in all Islamic countries, particularly after his deportation from Egypt on the ground of heretic tendencies; secondly, Afghāni's awareness that the young were attracted by the achievements of the West, and this eventually affect religious authority through which he might realize his dream, and thirdly, as Afghāni's belief in the Revelation was not clear, particularly through his utilitarian interpretation of the Quran. From this, Antun inferred that Afghāni, more or less, utilized religion for political gains. Antun concluded his article by remarking that neither religion nor modern civilization was able to eradicate vice from human nature unless "a general social reform" replaces "poverty, tyranny, and ignorance."¹

In his exposition of Afghāni's views implied in The

1. Ibid., P.157.

Refutation, Antun often included his own objection in footnotes. For example, he referred to Afghāni's unbalanced attacks on Darwin's concepts of evolution. He stressed that Afghāni's arguments revealed that he had no first hand knowledge of European books.¹ He concluded this article by saying that Afghani's principles of progress were only worth describing as "schoolboyish", for every schoolboy was taught truthfulness, trust, shyness, belief in God, and immortality.

Butrus al-Bustāni² has provided us with some information on Antūn's non-sectarian schooling, a background which may have allowed the writer an enviable objectivity in questioning the introduction of Western thought into the Arab World, not because it had been proved false, but because it had proved disrupting.³ In his interesting book on Antūn, Donald M. Reid offers a substantial analysis of Antūn's modernism and his debate with 'Abduh.⁴

1. Ibid., P.154.

2. Farah Antūn: Hayātuh, Adabuh, Muqatafatāt Min Āthāreh, edited by Manahel Press (Beirut: 1950 - 1951).

3. Ibid., P.224.

4. Donald M. Reid, The Odyssey of Farah Antūn: A Syrian Christian's Quest for Secularism (U.S.A: Minnesota, 1975), pp. 122 - 126.

VII. ARAB INTELLECTUALS ON THE CONCEPT OF IMMORTALITY AND THE SOUL

In a series of articles entitled: "Judgements of the Wise on Immortality and Perishing",¹ Ya'qūb Ṣarrūf began his introductory paragraph by a lofty rhyming prose in which he described himself as a modern researcher who departed from his country and his friends in 'Bilād ash-Shām' (Syria) and came to settle by the Sphynx and the pyramids in Egypt. He spoke at large about the beauty of scenes around the ruins of Pharoahs and the temptation of the Nile and its sojourning parks. He also quoted a poem by a certain Fakhr ad-Dīn al-Miṣrī, on the description of the pyramids. Afterwards, Ṣarrūf, in a very interesting style, came to handle the question of immortality. He said that when he was going round the pyramids he met an old man (Shaykh) whose opinion he wanted to know about the view that the Sphynx had been built for the purpose of keeping the Pharoahs' bodies for the day of Resurrection and Immortality, though, he said, the idea of immortality had become a superstition for the philosophers and scientists of his time. The old man told him that he was sitting by the Sphynx only to arrange his affairs before leaving for the next life. The Shaykh explained that he was unlike those philosophers and scientists who believed only in sensual evidence and denied the existence of soul. He suggested two proofs in favour of immortality, first, that there was an unknown or an invisible universe, secondly, that this universe was inhabited by sensible beings, souls. But he confessed that his evidence would not decide the matter because it was impossible to prove what was invisible by visible objects. The Shaykh, who represents the author, of course, concluded that the scientists who rejected the existence of the invisible universe could not prove its impossibility, therefore, they accepted its probable

1. al-Muqtataf (1886) Vol. X. pp. 385 - 388; 481 - 486; 587 - 591; 641 - 646; 728 - 732.

existence as did some scientists like Stewart and Tait in their book The Unseen Universe.

In the second serial article (pp. 481 - 486) Şarrūf handled the doctrines of ancient nations on Resurrection and Immortality. Using the voice of his narrator, he explained that a few investigations of the primitive nations had shown that the idea of Immortality had no existence in the minds of some tribes of negroes, Indians, and Sudanese. He maintained that the remains of ancient Egyptians indicated their belief in Immortality, and that they held that existing objects would never perish but might be changed into other forms and that it was their pictures that vanished not their substance. Egyptians believed, he added, that human souls had been derived from a divine source, but some of them were needed for purgation. These souls were judged by Osiris (the Egyptian God of Heaven and Earth) and were sent either to holy places or transfigured into mean animals. Good souls, he continued, would reappear after 3,000 years to live on earth again. This was the concept of immortality for the ancient Egyptians.

Şarrūf said that the Hebrews believed in immortality and resurrection but their concept was vague as displayed in the Book of Moses. Assyrians and Babylonians also believed in immortality and that the souls of virtuous men would live with angels in heaven, while the bad souls would go down to darkness and hunger. All these doctrines, to Şarrūf, were ambiguous and unconvincing, and even the Greeks and Romans were no better than the Babylonians or the Egyptians, as it was revealed in their superstitions and myths. They believed, he said, that good souls would go to Elysium and bad ones to Tartarus. He alluded to the Greek code of morality as depicted by their great poet Homer. He referred to Homer's statement on Achilles' tongue when the latter entering the paradise of Elysium says: "The life of the meanest creature on the

earth is better than all its glories".¹ Commenting on this statement, Sarruf pointed out that such teachings encouraged vices, earthly pleasures, and ignored all reward and immortality. Sarrūf explained that the Greeks believed in reincarnation and that Pythagoras and Plato were the first philosophers who taught it. Plato taught, he said, that souls were created first and that the attachment of a soul to a body was a punishment which would last about ten thousand years, but good souls like those who were devoted to the love of philosophy and beauty might be released from the prison of the body in three thousand years, and that, after a thousand years of the death of the body, its soul would be reincarnated in the forms of a man or an animal according to his past actions on earth. Sarrūf rejected Plato's superstitions and illusions. He held that such fanciful views brought about the doctrine of perishing held by Epicurus who denied the idea of immortality altogether. He referred to the contradictions found in the teachings of Greek philosophers and attacked their metaphysical approaches.

Sarrūf handled, afterwards, the doctrines in the Far East. The Brahmans, he said, believed in immortality, contrary to what was popular, that Indians believed only in transmigration. He quoted a few verses from the Rig Veda to support his point of view. He found that the original Brahma was corrupted by the insertion of paganism and idolatry. He considered the Persian Zoroaster and the Indian prince, Buddha, as reformers, who set the corrupted teachings aright. Sarrūf said that both doctrines of Zend-Avesta and Buddhism maintained the notion of immortality. What was striking in Buddhism, he remarked, was that the end of life lay in the release of soul from the material life - the body - and that matter was the origin of evils to the Buddhists. He illustrated that Zoroaster reformed the essence of their religion and Buddha its

1. Ibid. , p. 483 .

rituals. He pointed to Nirvana, the absolute happiness which could be attained only by the pious Buddhist who restrained himself from earthly pleasures and followed the moral principles which, to Ṣarrūf's mind, were so high that they cope with the morality of revealed religions.

A controversy occurred on the problem of the soul when Bishāra Zalzal published his articles on man noted above. Speaking of man's nature, Zalzal said that both al-Qizwīnī and Buffon held that man consisted of 'body' and 'soul', and that both Greek and Arab philosophers failed to comprehend the real nature of the soul.¹ Zalzal appreciated the Islamic view that man's mental faculties were limited and that only God knew the nature of the soul.² He defended himself against the attack on his article "Man" in the Bashir, the Jesuit periodical, by saying that his opponent lacked two important things, a correct language and a clear understanding of science, characteristics which ranked him only among theologians. He asserted that his article had nothing to do with religion.

Zalzal's attitude was defended in a letter³ in which a certain Zaher az-Zu'ni rejected al-Bashir's claim that the Muqtataf was a secular periodical supporting corruption and encouraging atheism. He asserted that the Muqtataf aimed only at scientific fact, industrial progress, and literary information. Zu'ni declared that had he found irreligious attitudes in the periodical he would have been forced to vigorously defend his own Catholicism. Fortunately, he did not. He pointed out that al-Bashir claimed that the editors of the Muqtataf denied a belief in magic and, eventually, in the metaphysical world itself, a claim which he ^{himself} denied citing statements from the Muqtataf as proof to the contrary.

1. "Man", Bishāra Zalzal, al-Muqtataf (1877), P.204.

2. Ibid., P.205. The Quran reads:

"They will question thee concerning the Spirit. Say: 'The Spirit is of the bidding of my Lord. You have been given of knowledge nothing except a little.'" (The Night Journey), Verse 85; Arthur J. Arberry,

The Koran Interpreted, op. cit., P.283.

3. "Truth is Worth Saying", Zāher az-Zu'ni, al-Muqtataf(1878),pp. 29 - 32.

This letter is followed by a statement¹ in which the editors of the Muqtataf commented on the religious inclination of the Bashir and on the Jesuits themselves, the owners of the periodical. It is interesting to note that the Protestant editors considered the Jesuits as "aliens" in the country. Another letter entitled "Magic is Deception"² took the controversy a stage further. The writer, Iskandar al-Bārūdī, explained that the Jesuits stressed that the editors of the Muqtataf denied that primacy of the soul and the existence of the next world, whereas the truth was that they denied only the existence of magic in the face of natural laws. Bārūdī in turn himself denied the possibility of magic and found it only "a kind of conjury",³ jugglery, and an illusion.

In two articles entitled "Is the Soul a Material or an Abstract Entity",⁴ the writer constructs a dialogue between an optimist and a pessimist (The Ambitious and the Repressed) in which they discuss the question of the soul. It is interesting to note that Şarrūf in a footnote calls attention to the fact that his essay, he claimed, had nothing to do with the notion of the immortality of the soul which pertains to theology, but it concerns itself with the nature of the soul in terms of physiology and psychology.

When the repressed, as a traditionalist, defines the soul as a non-material thing, the ambitious declares that modern science rejects the definition and teaches that there is nothing except "matter" in this world. The modernist argues that there is no existence of a spirit without a body, and that there is no evidence for any action done by spirit alone. He believes that the soul consists of thought, *emotion*, and will, and that all these faculties of the body work together

1. Ibid., P.32.

2. Ibid., pp. 272 - 276.

3. Ibid., P.275.

4. "Is the Soul a Material or an Abstract Entity", Ya'qūb Şarrūf, al-Muqtataf (1880-1881), pp. 161 - 165; 193 - 197.

in an integral unity as the unity between acids and metals produces electricity.¹ All knowledge, the modernist points out, is the result of the five senses whose perception is based on the existence of other material objects. He also states that any harm to an organ, particularly the brain, will affect not only the body but also the soul, and stresses that the soul is the property of the brain as the digestion is the property of the stomach. He concludes his argument by saying that when the body dies there will be no trace for the existence of the soul. These are the views of the advocates of the progressive school.

In the second article,² Ṣarrūf presents the traditionalist concept of the soul, and the analysis is poor. The 'repressed' attacks his opponent, the 'ambitious', and describes him as a moralist like Epicurus. In order to refute the materialist basis of actions, the traditionalist argues that words are abstract concepts, yet they produce different effects on the body according to their associations, and that there are abstract processes which the substances of the brain has nothing to do with them, like deduction and intuition. He adds that if the soul was a substance, it must have been measured in quantity like other materials, or it would therefore behave according to definite laws, and not by the indefinite faculties of reason and will.

The reader of these articles senses that the writer implicitly agrees with the traditionalist point of view that the soul is not a material thing, but a thing of special entity. The writer also disapproves of materialism, an attitude which leads me to presume that the writer was Fāris Nimr, not Ṣarrūf, for one finds resemblances between these articles and another which appeared in the Muqtataf under the title

1. Ibid., P.163.

2. al-Muqtataf, op. cit., pp. 193 - 197.

of "The Corruption of the Materialist Philosophy"¹ in which he comes to the same conclusion. The two articles on the soul are supplemented by three essays which discuss the notions of free-will and determinism², but which do not concern us here.

Jurji Zaydān, the editor of al-Hilal, largely dealt with the doctrines of resurrection and immortality in the last of a series of articles entitled "Foundations of the Natural Sciences"³. The writer expounded that there were two schools of thought which differed from each other over the doctrines of resurrection and immortality. The traditional school, which contained philosophers and scientists of all nations ancient and modern, and the contemporary materialists who denied these doctrines basing their judgement on tangible observation and rational philosophy. He declared that his intention was to refute the materialist claims.

He maintained that man's knowledge was limited to certain facts which could be perceived by observation and calculation. He claimed that there was no question of "chance" in life, but that everything was designed. He gave two arguments to refute the idea of chance. First, if a wall fell over a man and killed him, Zaydān argued, there must be natural factors which cause the fall of the wall and that the man himself was driven to that place because certain natural causes necessitated his presence near the wall. Secondly, if a man died, there must be a cause, mainly natural, such as an illness.

Zaydān divides actions into material and moral. The former deals with the natural actions which occur in the universe as a

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1. "The Corruption of the Materialist Philosophy", Fāris Nimr, al-Muqtataf (1883), pp. 606 - 612.
 2. "Is Man's Will Free?", the editors, al-Muqtataf (1881), pp. 257 - 262; 281 - 284; 313.
 3. Jurji Zaydān, al-Hilal (1894-5), pp. 846 - 852.

whole, and the latter tackles man's spiritual and moral actions. He asserted that natural actions always happened according to certain established laws, while moral actions lacked rational basis. He referred to many events of cruelty in nature, like untimely death and the irrational conduct of mature men. He concluded that moral laws were imperfect and that their perfection would be attained in the next world. He argued that if there was no future life, there would be no sense or wisdom in having imperfect morals on earth, while every natural system was perfectly designed. Thus, immortality was an inevitable conclusion for this imperfect life on earth. A conclusion which did little to satisfy Shumayyil, the materialist par excellence.

In response to an article that appeared in the Hilal on the future life, which seemed to be a repetition of Zaydān's earlier writings, Shumayyil wrote a letter¹ in 1909 in which he criticised Zaydan's conclusion that beyond the natural laws of the universe lay all wisdom and design, that moral laws lacked that wisdom, though subject to a process of perfection, and that the perfection of morals would occur in the next world. In order to reject design in the process of creation, Shumayyil asserted that there was no design in both natural and moral laws, simply because there were rudimentary organs which were entirely useless to the body. Design, he held, was not in the creation but in the development of these bodies. He argued that design required perfection and there was no perfection. This argument appears in a poem which he - like Erasmus Darwin - humorously begins by questioning a gnat whether the wisdom which created the gnat was the same wisdom which created him, whose sleep the gnat is disturbing.

1. Quoted in Majmū'at Shibli Shumayyil, vol. II, pp. 260 - 267; these letters originally appeared in the Hilal, 1909.

This letter led to a controversy between Shumayyil and Zaydān over immortality and the resurrection. Shumayyil stated that Zaydān's account on "design" implied a belief in special creation and that Zaydān deliberately omitted to comment on the wisdom in the creation of rudimentary organs. He rejected Zaydān's view that man was the noblest creature whose construction revealed all wisdom and design by arguing that contemporary science maintained the animal origin of man and his evolution in a long course of time during which now obsolete rudimentary organs had been once useful. These conclusions, he pointed out, entirely refuted the idea of special creation by confirming the existence of a general law which governed all creatures, including man. He wanted to know why, among all creatures, man only surpassed the visible laws of nature to come from an invisible world. Shumayyil, as usual, stressed his materialism and his belief that there was neither resurrection nor immortality. He held that religions developed from doctrines which themselves in turn were derived from superstitious and false understanding of natural laws.¹ He recognized that the belief in the Ghayb (Invisible World) was the reason for the stagnancy of the East.

In a book entitled az-Zahāwī wa Diwānuh al-Mafqūd² (Zahawi and his Lost Poems), Hilāl Nājī, a contemporary man of letters and lawyer, makes a legend of Zahāwī's contribution to modern Arabic thought. Zahāwī seems to him to bear comparison with al-Kindi, an Arab philosopher in the glorious days of the Abbasids. Nājī's book is a collection of selected writings on Zahāwī which consistently praises the poet and his work. He offers a study of Zahāwī's poetry and stresses the poet's modernist predilections in terms of the art of poetry and the philosophy of life. One important effect of Naji's book is to expose the previously exaggerated

1. Ibid., P.85.

2. Hilāl Nājī, az-Zahāwī wa Diwānuh al-Mafqūd (Cairo: Nahḍat Miṣr Press, 1963).

importance accorded to Zahāwi's lost poems.

Nāji's work consists of seven chapters of which the last is given over Zahāwi's lost poems called "an-Nazaghāt, aw ash-Shakk wa'l-Yaqīn"¹ (Evil Thoughts, or Doubt and Faith). In his introduction to these poems Nāji reveals the course of his investigations and the manner in which he came to obtain the manuscript of the poems in 1961. He asserts that Zahāwi gave the collection to Salama Mūsā in 1924, at this time the poet had wanted to settle in Egypt, but was deported because of an irreligious poem.

Zahāwi's collection readily reminds us of Tennyson's In Memoriam in which the English poet attempts to strike a balance between doubt and faith. Similarly, Zahāwi in this collection of poems deals with the same issues. He divides his poems into two parts; those which advocate "doubt" contain 370 lines, and those which appreciate "faith" comprise some 184 verses.² Nāji defends Zahāwi's religious attitude and stresses his faith by stating that the poet's words of doubt reveal only a temporary scepticism,³ while his statements on faith seemed to him to be more trustful. In order to support his conclusion that Zahāwi was a believer, Nāji appeals to his own "poetical taste" as a means to judge Zahāwi's belief, ostensibly revealed in the poems of faith.⁴ Of course, a judgement such as this is subjective and unconvincing simply because Zahāwi's tenets of scepticism, agnosticism, materialism, and even his open atheism, all assert the reverse. What surely seems to be evidence for Zahāwi's faith to Nāji more correctly reflects the poet's discretion and apprehension. Three reasons seem to support this conclusion: firstly, Zahāwi handed the collection to Salama Mūsā, another free

1. Ibid., pp. 313 - 374.

2. Ibid., P.319.

3. Nāji himself seems a religious man, a fact perhaps revealed by his reluctance to use the term 'God' or any of its equivalents in his publication of Zahāwi's poems. He perhaps allows his own beliefs to colour his judgement of Zahāwi.

4. Hilāl Nāji, op. cit., P.319.

thinker, in 1924, during the time of his experience with the fanatical Egyptians; secondly, Zahāwī requested Mūsā to publish the collection after his own death, a request which asserts that the poet was aware of the irreligious attitude adopted in his poems; and thirdly, that Zahāwī's request that his collection be published after his death was not an original intention, but rather one made in the light of his experience in Egypt, for he had previously assessed that his sceptical poems would be well received there since other free thinkers, such as Shibli Shumayyil, were tolerated.

It would seem probable that Zahāwī wrote these (irreligious) poems over a period of, perhaps, ten years, prior to his departure for Egypt. Nājī, like the poet an Iraqi, does not comment on this possibility. It is obvious, owing to their contents, that the poems could not be published in Iraq. Zahāwī earlier had supported the cause of women's emancipation and had been strongly criticised by all sides, as a result. One of his reasons in going to Egypt, then under a more tolerant British control, may thus well have been to attempt to have his poems published.

In a poem entitled "The Invisible and Visible"¹ worlds, Zahāwī denies the existence of an invisible world where some religious men dream of meeting nymphs (houris) after their death. He declares that beyond the earth there is neither paradise nor hell. In another poem Zahāwī says that he who believes in God is certainly a fool.² He also openly asserts that his disbelief in the existence of God and the Unseen World has remained constant since his youth. One could refer the reader here to one of his lost poems called "I am in Doubt".³ A determinist attitude is also presented

1. Ibid., P.321.

2. Ibid., P.322.

3. Ibid., P.323.

in many of Zahāwī's sceptical poems, a doctrine which reflects the poet's pessimism and his despondency. For example, in a poem entitled "As He Came So He Left", Zahāwī stresses the facts of man's determined existence within the framework of a natural process in which the laws of heredity dominate man's body, mind, and morality.

Zahāwī, like Tennyson, recognizes the aspect of nature "red in tooth and claw", but despite his own disbelief he attributes the phenomenon to God whom he blames for providing some men with the characteristics of wolves, while others are caused to act like sheep. In a poem entitled "To Hell" which is irrelevantly contained in the section assigned to the poems of faith, and which probably has been deliberately placed at the very end of the collection, Zahāwī stresses that "Reason alone" must rule and that reason entirely rejects belief in resurrection, Doomsday, and Hell. Time and again, Zahāwī denies the existence of hell and the idea of immortality, and believes that Nature is the only great power and sees it as an alternative to God.¹ How can Nājī reconcile all this quite unequivocal criticism of religion with a belief in the inherent religiosity of the poet?

In his recently published book, Dr. M.M. Badawi, in common with many other authors, refers to the significance of Zahawi's poem called "Revolt in Hell".² He points to the influence of both al-Ma'arri's Risālat al-Ghufrān (Epistle on Forgiveness) and Dante's Divine Comedy, and further defends the artistic elements and the ironic touches of the poem against a certain Jamīl Sa'īd who, he claims, fails to understand the significance of irony in the work.³ Zahāwī's "Revolt

1. Ibid., P.339.

2. M.M. Badawi, A Critical Introduction to Modern Arabic Poetry (Cambridge: C.U.P., 1975). There is a controversy between Edward W.Said and S.B. Bushrui over Badawi's book in the T.L.S. (10 Dec., 1976), pp.1559-1560, and (18 Feb., 1977), p.185.

3. For Badawi's reasons in criticising Sa'īd, see Ibid., P.55.

in Hell"¹ is one of his best poems, a masterpiece of irony and caricature, and the medium through which the poet conveys his rejection of the belief in the existence of angels and devils.² Zahāwī remains true to an agnosticism that denies the belief in a personal God.³ His treatment of paradise is reminiscent of Samuel Butler's sarcastic appraisal of Christian doctrines, particularly as presented in Erewhon.

Zahawi's attitude towards the question of the soul is presented in several poems which assert one major fact that once the soul disappears it will never return.⁴ His concept of the soul is often associated with the phenomenon of electricity,⁵ a phenomenon resulting from the chemical reaction of some material elements.⁶ As regards the fate of the soul Zahawi fluctuates between two views which were dominant at the turn of the century, materialism and spiritualism. He sometimes concurs with the materialists that the soul dies with the body⁷, and even, on occasion, denies its existence⁸, yet he sometimes presumes its immortality in an abstract world, a Platonic view. In fact, the element of agnosticism is a dominant feature in Zahawi's arguments, for Zahawi accepts Gustav le Bon's view that man has more than one soul, as presented in the former's treatise al-Mujmal Mimmā Arā⁹ (The Abstract of My Viewpoints).

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1. Diwān Jamīl Ṣidqī az-Zahāwī, with introduction by 'Abd ar-Razzāq al-Hilālī (Beirut: Dār al-'Awda, 1972), vol.I., pp. 715 - 739.
 2. Ibid., P.720.
 3. He finds no difference between "God" and "ether" except in the utterance. Ibid., P.722.
 4. Khayr ad-Dīn Zirkili, Diwān az-Zahāwī (Cairo: 1924), P.64.
 5. Ibid., P.382.
 6. Jamīl Ṣidqī az-Zahāwī, al-Lubāb (The Essence) (Baghdad: al-Furāt Press, 1928), P.298.
 7. Hilāl Nājī, az-Zahāwī wa Diwānuh al-Mafqūd, op. cit., P.148.
 8. Ibid., P.150.
 9. Ibid., P.154.

CHAPTER SIXTHE DEBATE OVER MORALITY IN THE ARAB WORLDI. NEO-TRADITIONALISTS: AFGHĀNI AND SARRŪF

The ethical system of the Arab World is largely based on the religious instructions of the Quran and Tradition (Hadīth) supplemented by examples drawn from the lives of the Prophet and his Companions. Moreover, there is an accumulation of moral codes which were imported from Greek and Persian systems in the days of the Abbasids¹ when the Muʿtazila school² came into being and began to teach the Islamic dogmas of theology and ethics on rational grounds. Certain Islamic morals have been condemned by Western authors, perhaps because they seemed to them in opposition to the wisdom of their own teachings or tradition. Non-Muslims have found little morality in the Islamic codes relating to divorce, polygamy, slavery, retaliation, stoning for adultery, mutilation for robbery, and war against unbelievers or even believers other than Muslims. Themes such as these have been considered the backbone of Islamic morality, and theologians of different sects have been engaged in debates about them for centuries. The literature of their controversies stretches to hundreds of volumes. Our concern in this study is to draw a picture of the moral concepts of the Muslim and Christian communities in the Arab World during the period in which a naturalist ethic first made its appearance in the second half of the nineteenth century.

Perhaps Jamāl ad-Dīn al-Afghāni's Islamic philosophy was

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1. The Abbasids: were the descendants of al-ʿAbbas, the Prophet's uncle; Duncan Black Macdonald, Development of Muslim Theology, Jurisprudence & Constitutional Theory (reprinted by Khayats, Beirut, 1965), P.12.
 2. This school of theology was founded by Waṣil ibn ʿAta' who held that: "The freedom of the will is a priori certainty, and man possesses Gadar (power) over his own actions." Ibid., P.135.

the dominant work of the period. Being aware of his historical position,¹ Afghani set himself the difficult task of reconciling religion, philosophy, and science. His wide experience of men, manners, and philosophic sciences led him to probe deeply into the history of Islamic thought in order to find clues for compromise between the traditional and the new modes.

Afghani's Islamic system of ethics appeared in his treatise The Refutation of Materialists.² He epitomised the Islamic ethics in three virtues: Modesty, Trust, and Truthfulness. These virtues, he said, had been inherited by nations from ancient times but it was religion that stamped them in the nature of nations. Perhaps he means here that morals are innate in nature and that religion has sanctified them. The Persian text of The Refutation refers to the origin of morality as thus:

(As for) these three qualities that have been produced in peoples and nations from the most ancient times because of religion: (One of them) is the quality of shame (haya) ... The second quality is trustworthiness ... (the third) ... is truthfulness.³

Afghani's concept of the origin of morality is rather ambiguous in both Arabic and Persian texts.

He defined 'modesty' as 'the excitement of the individual in committing an act which causes shame'. He explained that this quality enabled man to refrain from committing sins and crimes as well as preserving society from corruption and disorder. He said that death was the only

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1. "I speak that I know; I am not an obscure individual. My title "Son of the Prophet", may serve to signify to all Europeans that I am known and well accredited throughout the dominions of the Shah, recognized in my high religious dignity by the Shah himself and all his Ministers and ambassadors, and upholders of our holy religion, and accepted as one of the chief teachers of the people." "The Reign of Terror in Persia" by Sheikh Djemal ed-Din Afghani, translated by The Rev. H.P. Haweis, The Contemporary Review, vol. 61, (Feb., 1892), P.239.
 2. Jamal ad-Din al-Afghani, The Refutation of Materialists (1955), 2nd ed., Cairo; Maktabat al-Khanji, Muhammad 'Abduh's translation from Persian into Arabic, with an introduction by Dr. 'Uthman Amin, ed. by M.F.M. Trabulsi. Henceforth cited as The Refutation.
 3. Nikki R. Keddie, An Islamic Response to Imperialism, Political and Religious Writings of Jamal ad-Din "al-Afghani" (1968) pp. 144 -147.

punishment by which vices could be controlled, but it was unfair to apply it to every act of shame. From modesty, he said, other virtues sprang, such as honesty in transactions and pride in achievements; and without this feeling of pride, mankind would never attain progress in knowledge and the sciences. He added that the nations which lacked these merits would inevitably decline and extinguish in the course of time. Modesty encouraged friendship and acquaintance among people who knew their duties and rights, and the modest man, to his mind, was always anxious to acquire virtues of trust and moderation. In his analysis of the virtue of modesty Afghani stressed the phenomenon of competition as a means by which man accomplished good deeds. This was because the modest man, he argued, would be proud of such achievements and be ashamed of bad ones. In this feeling of responsibility, to him, lay the spirit of advancement in nations. Although one finds some exaggeration in Afghani's claim that: "Modesty is the source of every virtue",¹ and a ladder for every success and progress, one may recognize in his view traces of laissez faire principles as well as the positivist philosophy whose publicisers in Britain often insisted on this same sense of duty and achievement in the welfare of humanity. Afghani finds in the schoolmaster an example of wisdom because the latter always urges his pupils to better themselves. He quoted the popular words of the schoolmaster to his lazy pupil: "Aren't you ashamed of yourself to be less than your mate?"² There are two kinds of teachers for Afghani; teachers who enlighten the reason, and the moral guides who conduct people to the right way. The teacher should sow moral principles and sustain virtue in society.

Explaining "trust", the second virtue, Afghani points out that the survival of human beings was based on transaction and mutual utility, and that the spirit of these actions was "trust". He added that

1. J. ad-Dīn Afghānī, The Refutation, op. cit., P.34.
 2. Ibid., P.34.

in the absence of trust between the authorities and the people in a country, decline and anarchy would prevail. The societies in which this quality was not adopted, he held, would be subject to the despotism of their rulers or to the tyranny of the invader who would make them taste the bitterness of slavery. In such a claim one may see Afghāni's own vision of Islamic society at the time, a society which was actually ruled by the despotism of the Ottoman sultans, and was fragmented into multiple denominations and communities. His writings also reveal a desire for social reform through the interpretation of religious virtues in the social context. His view of moral and social reform can be seen in this rare quotation from the Quran: "Verily, God does not change the state of a people until they change themselves inwardly."¹

The third virtue, truthfulness, was explained by Afghāni in a simple way. He compared the truthful man and the liar, and pointed to the differing consequences of false news and true news. Again, he ascribed national misery and disruption to the absence of this virtue. Overall, his treatment of this quality is loose and poor, his explanation insufficient, and his style metaphoric. Although he stresses the social advantages of truthfulness, he does not deploy the idea so as to cover its benefits in any detail on personal and communal grounds. Perhaps the concept of this virtue is rather ambiguous, for one wonders whether there is any such thing as Afghāni's "lying nation". Truthfulness is a personal virtue which is based on the social and economic relations among individuals. It may induce respect and yet respect itself is a personal quality which can be affected by many other factors such as money, social position, mental gifts, and authority. Phrases like: "see how misery would yield its camels in a nation if it lost the quality of truthfulness" illustrate

1. Nikki R. Keddie, An Islamic Response to Imperialism, op. cit., (1968), P.173.

not only Afghani's imprecision of thought, but also Muhammad 'Abduh's metaphoric style in his adapted translation of the treatise.

In a chapter entitled "Belief in God"¹ Afghāni attributed human rules of morality and justice to two beliefs. He argued that the most important restraints on man's behaviour were these two beliefs: belief in God and belief in the after life. Without these doctrines, he held, there would be no virtues in society. He asserted that governments had never been able to prevent deception, corruption, and tyranny because such vices were encouraged by cunning and secrecy. Moreover, rulers themselves were liable to dishonesty and corruption if they had no beliefs to restrain their immoral desires. Later, Afghāni opposed the naturalists who rejected these beliefs and consequently, he claimed, lost all sense of virtue and ethics. His strong attack on the naturalists' morality appears in a chapter entitled: "Evils of Naturalists and Virtues of Religion",² in the Persian translation of the treatise. He writes:

They are the destroyers of civilization and the corrupters of morals; the destroyers of the pillars of knowledge and wisdom. They are the annihilators of peoples; the obliterators of pride, zeal, and honour; the roots of baseness and treachery; and the plants of vices and vile-ness. They are the bases of sordidness and depravity; the standards of lying and falsehood; and the callers to animality. Their love is deceit, their companionship a trick, and their gentleness perfidy. Their kindness is a ruse, their truthfulness a deceit, their claims to humanity imaginary, and their call to science and knowledge a snare and a forgery. They make trustworthiness into treachery, will not keep a secret and will sell their closest friend for a copper coin. They are slaves to the belly and bound by lust.

They do not refuse to perpetrate any kind of base and low act in order to fulfill their passions. They in no way recognize honour, pride, or shame, and they know nothing of nobility of soul. Sons in this group are not safe from their fathers, nor can either of them be barred from daughters according to the ways of nature.³

This passage reveals Afghāni's militant nature as well as his approach to controversy with his rivals. When Afghāni addresses his writings to the common people - as in this passage, he uses the popular, haranguing

1. J. ad-Dīn al-Afghāni, The Refutation, op. cit., (1955), P.72.

2. This passage has been included in the chapter entitled: "Belief in God" of the Arabic text. C. Nikki, R. Keddie, op. cit., P.167.

3. Nikki, R. Keddie, op. cit., pp. 167 - 168.

manner of the religious polemicists which shapes almost all the theological debates of the time. Most of Afghāni's religious and political writings are written in such a style when addressed to the masses. However, when Afghāni criticises a scholar like Renan, for instance, his presentation is extremely different in style and thought. This duality in approach to the common people as different from the intelligentsia is not unique in Islamic philosophy. It is a typical Islamic method which is used by the Prophet and appears in the concrete images of the Quran, particularly in the verses presenting reward and punishment in the future life. It has also been adopted by Avicenna, Farābī, Averroës, and al-Ghazāli.¹

The rhetorical and emotional demonstration is, to Afghani, the proper way to persuade the masses, particularly for the Arab mind which is characterised by emotion and a love of sonorous words. This method of presentation is prevalent in The Refutation, which is, I think, mainly directed to the Muslim masses, and perhaps, Muhammad 'Abduh, its translator into Arabic, has exaggerated it even further. Nevertheless, the treatise contains something for the Muslim intelligentsia.

The contents of the passage above show the nature of morals with which the Muslim community was concerned at the time. Pride, zeal, honour, kindness, restraint of desires and nobility are glorified by Afghani. These qualities are branched from the six pillars of wisdom on which Afghani's philosophy has been established. His six pillars of wisdom consist of three beliefs (that man is the noblest creature, that his community is the noblest, and that he believes in the future life), and of three virtues (modesty, trust, and truthfulness). These beliefs and

1. Recent translations and studies of the works of these philosophers are available in: Arthur J. Arberry, Avicenna on Theology (1951); George F. Hourani, Averroës on the Harmony of Religion and Philosophy (1961); "Ibn Rushd's Defence of Philosophy", The World of Islam, edited by James Kritzeck and R. Bayly Winder (1960).

virtues are, to him, what naturalists want to undermine by adopting animality, appreciating lust, and nullifying the principles of reward and punishment on which the virtues and codes of morality have been founded. I wonder if any of the nineteenth century naturalists in Britain or the Arab world had in fact ever taught dishonesty, the unbridled pursuit of pleasure, or any of the vices here attached to them.¹

Afghāni was equally savage in his attacks on other purveyors of the changing Western morality. Speaking of the morality of the Mormons,² he claimed that "that latter-day prophet and his distinguished gospel of nature" appeared in England only to teach licence and communism. The Mormons, according to Afghāni, formed two societies of fools, one of 'male believers' and the other of 'female believers', and taught that if a female believer was asked whose wife she was, she should answer that she was the wife of the society, and similarly a child would reply that he was the child of the society if he were asked whose son he was. But up to that time the Mormons' moral corruption, he concluded, did not go beyond their communal abyss.

We notice that Afghāni, in his attack on vices, often concentrates on sensual pleasures, particularly on man-woman relationships. These relationships have traditionally been seen in a harsh light in the Arab world: sex outside marriage figured as one of the worst sins in the Islamic canon and dates from the pre-Islam communities where the Arabs used to bury their daughters alive for fear of shame. Afghāni's concept of

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1. Professor N.R. Keddie raises questions about Afghani's unmarried state. She implicitly suggests that he was a latent homosexual, drawing her main evidence from letters addressed to Afghani by his disciples. However, the "adoring phrases" cited by Keddie are very common in Arabic for expressing affection and rarely imply homosexuality. I wonder in passing how Keddie would interpret the mutual kisses on the mouth and nose-touches of male Saudi Arabians, were she to see them? Nikki R. Keddie, op. cit., P.34.
 2. A society of Mormons was established by Joseph Smith in England in 1852. Polygamy was adopted by the members.

morality is a blend of Islamic teachings and social conventions. No doubt, Afghani's attitude towards naturalism, to Sayyid Ahmed Khan and his followers who succeeded to an extent, in spreading the naturalistic doctrine in India, but throughout his career, one may find contradictions in Afghani's attitude towards naturalism and science. While he attempts to secularize Islamic law and reconcile science and religion, on the one hand, he attacks naturalism on the other. These contradictions centre Afghani's work in the preponderantly ambivalent Islamic attitude to scientific naturalism in the second half of the nineteenth century. His attitude towards the materialistic concept of morality is similar to that of the evolutionary ethics because he rarely differentiates between the two doctrines, though his moral concept of the interrelated virtues - modesty, trust, truthfulness - reveals his interest in the social welfare, unlike most traditional theologians.

springs
from his
hostility

In his article, "The Philosophy of True Morality",¹ Muhammad 'Abduh referred to the phenomena of antithesis in the nature of plants, animals, and man in the process of adaptation to their environment. he applied this view to man's moral sense where two antagonistic forces were always at war. The happiness of the world, 'Abduh expounded, was based on the reconciliation between these forces, or in Spencer's terminology the equilibrium between egoism and altruism. This state of equilibrium was described as a moderate virtue by 'Abduh.

The moralist, according to 'Abduh, was a wise man capable of understanding the defects in society just as the medical doctor is able to diagnose the illnesses of the body. The moralist, he stated, must study the history of his nation as exactly as the doctor must be acquainted with natural history, physiology, and pathology. 'Abduh vehemently attacked the

1. "Falsafat at-Tarbiya al-Haqqa" (The Philosophy of True Morality), M. 'Abduh, Thamarat (12 Dec, 1898), pp. 6 - 7. The Arabic term "tarbiya" may mean 'education' or 'morality', according to its use in this article it indicates the latter meaning.

preachers whose ignorance, despite their good intentions, led the nation to negative results. It is difficult to identify this group of preachers, for 'Abduh referred to the preachers in mosques as well as to the writers and editors of periodicals.

However, one recognizes that 'Abduh's argument was implicitly based on Spencer's principles of the survival of the fittest and the optimistic view of progress. It may seem strange to find that the religious leader of the time neither cites nor even refers to any Islamic principle of morality, Quranic, traditional, or otherwise. His Hegelian approach to morality along with the Spencerian ideology, reveal his semi-modernist turn of mind.¹ His contemporary readers must have been delighted to get rid of the monotonous writings of traditional moralists.

Speaking of 'Abduh's moral and religious guidance in 1900, the editor of Thamarat reported that Ahmad 'Umar, one of 'Abduh's closest disciples, recited a poem, apparently his own, in which he declared that his master's achievements were beyond praise.² In reply to the several speeches delivered on the occasion of a religious seminar in 1900, 'Abduh stressed that happiness was the result of two virtues: the acquisition of knowledge and the execution of one's duty. He also demanded his audience to be logical in their judgements and courageous in telling the truth.

In an article entitled "Religious Morals and their Effect on Nations",³ Ahmad 'Umar followed a line of argument similar to that of his masters, Afghani and 'Abduh. He pointed out that the position of nations depended on the application of religious principles both by the individual and by the community. He argued that the spread of religion itself was based on the dissemination of its moral principles. He remarked

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1. Abbas Mahmud al-'Aqqad refers to 'Abduh's early interest in modernism; 'Abqariyyu al-Iṣṣlah wa't-Ta'lim al-Imām Muhammad 'Abduh (Beirut: Dar al-Kitab al-'Arabi, 1971), pp. 14 - 15.
 2. "The Truth of Logic and the Soundness of Thought", Muhammad 'Abduh, Thamarat (6 Aug., 1900), pp. 6 - 7.
 3. Thamarat (8 Jan., 1900), pp. 2 - 3.

that the Prophet and his Four Successors had been exemplars of higher morality. He attributed the early widespread of Islam to the morality of the early generations. Their merits of justice, clemency, piety, and guidance, he wrote, tempted the non-Muslims to embrace Islam, not by force and fear but through free choice and love. In his conclusion he stressed two points: first, that religious morals must be the only basis for learning at schools, and secondly, that these morals were designed for the good of this world and the next. In fact, such conclusion characterises the majority of theological morality, Christian or Islamic.

In a series of articles entitled: "Conscience and Morals"¹ Ya'qūb Ṣarrūf handled the issue of morality and conscience in which he found an arena of controversies among philosophers and scientists. He defined 'conscience' as the faculty by which man recognized whether an action was right or wrong, and whether it was a duty which ought to be done or a prohibited action which must be avoided. He divided the conscientious action into two aspects, a conscious conception and an unconscious feeling. He held that through his mind man could conceive of an act of aggression as right or wrong, whilst feeling would determine the degree of pleasure to be balanced against this. He asserted that the judgement of actions as right or wrong was completely ascribed only to man who had faculties of intellect and free will. Thus, only human actions could be judged as moral or immoral, though the judgement itself might be wrong owing to the circumstances of education and experience. He explained that God imbued man's nature with beautiful and ugly images so that he spontaneously perceived whether an action was wrong or right. He asserted that morality was not an acquired quality, but an inborn property. He believed that the qualities of beauty and ugliness were

1. "Conscience and Morals", Ya'qūb Ṣarrūf, al-Muqtataf (1882), vol.vi, pp. 577 - 581; 641 - 646.

found in the actions themselves and that it was the task of conscience to perceive them and judge accordingly.

In order to present these controversial arguments on the issue of morality, Y. Şarrūf offers an imaginary discussion in which participants of different schools give their arguments on the origin of moral principles. A dialogue takes place between a materialist, who refuses the physical existence of conscience and attributes the difference of judgement to its non-existence; and a naturalist who believes in the spontaneous knowledge of virtue and vice, and argues that the materialist's view can be an evidence of the existence of conscience because the difference in judgement lies in the power of conscience. The materialist retorts that if there had been any so-called conscience, primitive nations would have suffered from their actions of killing, robbing, and adultery. The naturalist says that primitive nations have suffered from some immoral actions, and that their narrow mentality, ignorance, and rudeness have to be blamed. Another character joins the debate and agrees with the naturalist on the existence of conscience but he wants to know why conscience sometimes commits faults and why there is difference in judgements in so far as morality is an innate property by which the sensible man conceives the beauty of virtue and the ugliness of vice as qualities extant in the action itself.

The naturalist argues that man's quality of holding virtue does not mean that he is void of error because every sensible man uses his mind in a different way and this results in the difference in judgement, but the fact of virtue remains in the action itself. He gives an instance that when a man says that a certain war has actually taken place and another denies its occurrence, it makes no difference to the actual fact of the event. In just the same way, the beauty or ugliness of an action remains whether perceived or not. By his argument the materialist stresses

that morality is an acquired quality like habits while the naturalist, a mask for Y. Sarrūf, maintains that morality is engendered with man. As a believer in God and the evolutionary theory, Sarrūf asserts that the moral faculty is God's gift to man.

A Hobbsian now takes part in the debate. He holds that actions, both good and bad, originally have no concepts of virtue and vice till the appearance of the intellectuals who have distinguished between these concepts. Intellectuals, he says, have inferred laws and measures of morality from actions and have introduced them into nations for their progress. The naturalist retorts that without the prior existence of images of virtue and vice in man's mind, moral principles will never be accepted by men because they must comply with the spontaneous requirements of man.

A follower of Locke and Bailey joins the debate and explains that actions are vicious or virtuous according to the influence of ancestors through nursing and education. He rejects the idea of a spontaneous concept of morality. The naturalist accepts his view but wants to know how the ancestors themselves have recognized moral principles and who has taught them if the moral concepts were not originally in their nature. Sarruf, in the footnote, acknowledges that this last argument is Donald Stuart's. A divinist (theist) finds room to launch his view that the old ancestors have been taught by God who revealed to them the understanding of vice and virtue. The naturalist agrees with the theist on God's interference but he points to the difference between his own view and the theist by saying that:

"God recommends us to do virtues because they are virtues by themselves,¹
and prohibits us from doing vices because they are vices in their origin."

He rejects the idea that actions become virtues or vices because God wants them to be so, and argues that it is unreasonable to suppose that by God's

1. Ibid., P.643.

will angels' virtues will be made vices or Satan's vices will be made virtues, just as the assumption that by God's will alone (two and two will equal five) is completely false.

A sympathizer of Hutcheson and Hume suggests that actions are virtuous or vicious according to individuals' outlook and that man has a special sense by which he conceives moral rules and he calls it the moral sense. The naturalist argues that such a sense has no physical existence like eyes - as the Humean suggests - but he agrees with the Humean if he means by such a sense a mental faculty by which man distinguishes between right and wrong.

A Utilitarian explains that actions have been considered as virtuous because of their beneficial effect on man and his society, and as vicious because of their evil consequences. He asserts that if virtues have no benefits for man they have no value and it is utility which gives them the status of morality. He holds that if there is no utility in a virtuous action, there will be no meaning for duty and the same is true for the avoidance of a vicious action. The feeling of happiness results, he says, from the utility of virtue, and the ugliness of vices springs from their harmful effects. The Utilitarian argues that morals are acquired qualities which are measured by their utility to the common welfare. The naturalist accepts the utilitarian arguments but he refuses to consider utility as the only cause of virtue. He explains that utility incites a sense of admiration in man not moral appreciation by referring to the difference in feeling towards a beneficial invention, printing press, for instance, and a benevolent action. The Utilitarian interrupts to say that he means the utility in human actions, not in machines, and the naturalist takes this opportunity to decide that there is an essential difference between moral and materialistic utility and on this note closes the debate.

It is obvious that Sarruf adopts the character of the naturalist in the debate and stresses the natural concept of morality. This series of articles is rich in scientific and philosophic thought, a quality that distinguishes most of the author's writings. Although Sarruf concentrates on the naturalistic school of ethics, he does not fail to evaluate the moral concepts of other distinguished doctrines. Equally he never fails to stress God's providence.

In a series of articles entitled: "Our Greatest Need" which appeared in the Muqtataf, "religious morality",¹ was the sub-title in which Sarruf tackled the phenomenon of morality in the Arabic society. In a striking manner he explained that his purpose in addressing this difficult subject to his readers was stimulated by his emotional feelings and his faithfulness to his fellow men, regardless of religious and sectarian differences. He began by lauding the Arabs who were a distinguished race whose noble feelings, virtuous tendencies, and sound manners pervaded a great part of the world, and whose mental gifts and physical strength were justly appreciated. This opening, however, was designed to refer to past glories only to give the author an opportunity to compare and attack the defects of present society. He attributed the decline of the Arabs to the weakness of their will and their negligence of duty. They lacked, he said, virility and interest in tasks. He pointed to St. Paul's virility, righteousness, and bravery. He demanded that Arabs assimilate St. Paul's merits, to be courageous where needed, and obedient to the call of conscience.

In his religious morality Sarruf insisted on two points: first, the unity of Christian denominations and by referring to the national strength of the country he perhaps included Muslims as well - and secondly, the virtues of tolerance, fraternity, and the love of God. Unity was

1. "Our Greatest Need - Religious Morality", Ya'qūb Sarruf, Al-Muqtataf (1884), Vol. VIII, pp. 641 - 645.

necessary, he said, for the progress of the country, and co-operation among communities were equally necessary for the welfare of the whole, Christians and Muslims alike. If there was tolerance between religious communities, he added, the French could not exploit the construction of roads in Lebanon, nor the British the transportation of water. The author implicitly attacks differences in religion and doctrines which, to his mind, are causes of disruption and the decline of the country. Perhaps, decline lies not in the religions themselves but in the conduct of some of their adherents. The notion of unity between different religious communities has been construed by historians as a nationalist movement, exclusively political, and such authors have been described as the pioneers of that movement, and later as the prophets of independence. Nevertheless, one may at least infer from their calls to reform and attempts to reconcile religious differences, the atmosphere of hostility taught by fatalists in churches, mosques, and schools. Such intellectuals constitute the preachers of the new morality which results from their liberal education. Their attempts at moral reform and scientific progress have been exploited by later politicians and historians alike. None of these earlier intellectuals who introduced the doctrine of scientific naturalism into the Arab world had any essential political interests and their concern was solely to see their country as progressive as those in Europe.

When Şarrūf talked of moral reform, he stressed the role of women in adjusting habits and educating children to principles of virtue and humanity. The significance of women, he said, could be seen in their dual role as mothers and school-teachers who had the authority to instil righteousness and virtues in the young. He glorified altruism, and said that it was women's duty to teach their children how to sacrifice their personal benefits for the welfare of others. He asserted that the

development of a country was based on the examples of its women, and claimed further that contemporary civilization itself was to be measured by the moral status of women. He turned to history to support his views, and illustrated that woman by her kindness and patience taught the barbarian Vladimere of Russia how to be kind, tender and pious - as did Hanna, sister of Constantine the Byzantine King - by marrying him. He also referred to Bertha who married Ethelbert, King of Kent, and to Clotilda who married the pagan King of France. These women, he said, introduced Christianity into Russia, England, and France. He also mentioned the virtuous part played by an English woman - no doubt he means Florence Nightingale, who led the effort of the ninety two nurses who looked after the wounded in the Crimean War. One of the important virtues, for him, was to be found in the role of women at home, where they should encourage and help their fathers and husbands.

We notice that Şarrūf's concept of morality is assigned to the welfare of society in two ways: by appreciating the religious morality which has been based on the virtues of tolerance, confidence, and co-operation among the religious communities, and by urging women to teach moral principles such as kindness, altruism, honesty, and sacrifice. Şarrūf's article does not deal with the origin of these virtues. He was to tackle this problem two years later.

In an article entitled: "The Origin of Morals and Virtues"¹ which appeared in the Muqtataf of 1886, Ya'qūb Şarrūf divided man's actions into the good which should be performed and the bad which should be avoided. He referred to the hierarchical development of plants, animals, and man. He explained that the amoeba was the meanest being in the chain, whose actions did not go beyond providing itself with something to eat only to

1. "The Origin of Morals and Virtues", Y. Şarrūf, Al-Muqtataf (1886), Vol. X., pp. 206 - 209.

survive, while other animals had elaborate actions which seemed to contain intention or will. Afterwards, he compared the primitive communities with the civilized ones, and pointed to the great difference in their methods of survival. He suggested that since the principle of self-preservation was substantial for every human being, it would be wise for a man to perform actions which aided the preservation of himself and his fellow-men. Such an action was the highest virtue. He held that unwise actions would disappear in the course of time and gave as an example the Bedouin raids which were previously considered virtuous and a source of pride, but were no longer so in his day. He explained that the death rate was lower in the civilized nations than the less developed ones, though there were some exceptions to this rule. After the stage of self-preservation, Şarrūf said, came the stage of nursing of progeny, and this phenomenon was at a high level in civilized communities. Nursing, to Şarrūf, was a virtue because it protected the lives of children, prolonged their lives, and resulted in the progress of society. He attempted to show that the evolutionary doctrine based the notion of progress on the wise manipulation of moral laws. He classified moral laws into scientific and philosophic, and held that the former were broader in scope than the latter, though he did not give his reasons.

In his closing argument he showed his philosophic interpretation by commenting on those who apparently hated life and wanted to get rid of it as soon as possible. He said that those men should hurry to the aid of the sick and to everyone who was in need. He quoted a line of verse which illustrated that if old men complained of the weariness of life, they were sighing for lost youth and the difficulties of life, not life itself. He said that while evolutionists seemed to be positive and optimistic about man's nature and his code of morality, philosophers and theologians were passive and pessimistic. While the former group held that man's corruption was in need of reform by intellectuals, the latter

asserted that divine reformers were indispensable for illuminating the dark paths of man.

According to Ṣarrūf, happiness was the aim of this life and the next, and this was the reason why man struggled to gain virtues according to the evolutionary ethics which were imposed by God for the welfare of humanity.¹ When Ṣarrūf was speaking of Resurrection and Immortality in an article entitled: "Judgements of the Wise on Immortality and Perishing",² he stressed the advantages of belief in the future life by showing that the principle of posthumous reward and punishment urged man to adopt virtues and avoid vices. He held that by this doctrine the human community would achieve progress and perfection according to evolutionary principles, principles which developed according to the law of natural selection by which the righteous would multiply because they were the fittest for the advancement and the doctrine of Resurrection and Immortality would prevail over all the world.

In 1906 Ṣarrūf declared that until the appearance of his articles "The Science of Ethics"³ there was nothing written on Spencer's ethics in Arabic literature. Ṣarrūf presented Spencer's views on the nature of aggression in man by referring to infanticide, cannibalism, and other practices which were considered virtues by some Asian and African tribes. Spencer, Ṣarrūf writes, demonstrates that killing was

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1. Ṣarruf's ethics seem to be a combination of three schools: the utilitarian vision of happiness, the evolutionary principle of progress, and the Divine morality.
 2. "Judgements of the Wise on Immortality and Perishing", Y. Ṣarruf, al-Muqtataf (1886), vol. x., pp. 587 - 591.
 3. "The Science of Ethics", Y. Ṣarruf, al-Muqtataf (1906), vol. xxx., pp. 818 - 824; 881 - 885; 977 - 981.

considered by many nations as a virtuous action whose doer deserves reward. Elements of this bestial feeling were still present, he said, in man's nature, though it was somewhat controlled by the ideas of altruism and co-existence in peace which appeared in India and Persia. He also referred to the gradual adoption of altruistic virtues by both Judaism and Christianity.

In the second article, Ṣarrūf spoke of Spencer's views on raiding, plunder, slavery, kidnapping of women and robbery, qualities which were related to man's aggressive nature. He stated that the Turcomans glorified robbery and built shrines for their most distinguished criminals.¹ Later, Ṣarrūf displayed Spencer's views on revenge in the framework of the principle of the survival of the fittest.² Referring to Spencer's account of revenge as a dominant characteristic among the Arabs, Ṣarrūf cited quite a few pre-Islamic verses in support of this view. However, Ṣarrūf does not give an opinion of Spencer's views but from time to time when an account touches upon the Arabs he offers only what comes to mind in Arabic literature. No doubt, he implicitly supports the relative and evolutionary concepts of morality as presented by Spencer, though there is no direct evidence other than his choice of summarising Spencer's Principles of Ethics.

In his letter³ objecting to Spencer's ethics, Hanna

1. *Ibid.*, P.883.

2. *Ibid.*, P.977.

3. "An Objection to Spencer", Hanna Khabbāz of Homs, al-Muqtataf (1906), pp. 1006 - 1008.

Khabbāz, Protestant minister, claimed that Spencer's view that altruism appeared late in the history of man was erroneous because the Hebrew principle of morality - "Love your neighbour as you love yourself" - had been recorded a thousand years earlier than Spencer claimed. In his comments on this letter, Sarrūf referred to the agreement of the "high criticism" writers on the idea that the Old Testament had been written after the Hebrews' return from Babylon in 536 B.C. Sarruf referred the minister to the contemporary writings on the topic, particularly "The Encyclopaedia of the Old Testament".

Probably Sarrūf's interest in moral issues comes from his awareness of the stagnant condition of his society and of his own responsibility as the editor of a leading journal in that society. His sense of duty and enthusiasm for social reform can be identified in his translation of Samuel Smiles' Self-Help (1859), a work whose writer applied moral values to the interests of his society at a critical moment in the Victorian period. No doubt, Sarruf himself in the 1870's recognized that the Arab world was in a transitional phase of its social and national developments, and that it was an appropriate time for social mobility towards progress.

"The Secret of Success" is the Arabic title given to Smiles' work, and it is characterised by the addition to the English text of a collection of statements and verses cited from famous Arab writers or poets who glorified the role of the individual in building up his society and state. The book stresses the importance of duty, con-

centrates on the achievements of a certain class of individuals, mostly commoners, and indirectly teaches in comparison with traditional Arab ethics, a liberal morality. Nevertheless, its moral lesson seems to be equivalent to that of laissez faire, for the work, as a whole, comprises a collection of biographical sketches and individual attitudes of statesmen, business men, and scholars who by their honesty, assiduousness, and hard work, offered great service to their societies. However, the Victorian concept of hero worship is implied throughout the treatment. Perhaps Ṣarrūf himself had much of this tendency in him, for he and Fāris Nimr compiled a book called Siyar al-Abtāl al-Qudamā' wa'l-'Uzamā' (1912) (The Biographies of Ancient and Great Heroes).¹

In fact, Ṣarrūf's approach to ethics is very similar to the attempts made by the majority of Victorian moralists who tried to compromise between, for example, intuitionism and utilitarianism, or between Christian and evolutionary morality. Ṣarrūf himself, in his attempts at compromise between evolutionary and Christian ethics, did not offer a systematic study. One can recognize his hesitant attitude towards the conflicts between science and theology, and at times his love for the new morality shades very close to a mere restatement of Christianity. Nevertheless, Sābā's book displays, though many valuable quotations, a portrait of a man who was rightly described by Ismā'īl Mazḥar as an epoch maker of thought in the nineteenth century. Mazḥar remarked that: "Dr. Ya'qūb Ṣarrūf's name takes its place in the history of the East as one of distinct movements in the history of human thought."²

1. 'Isa Mikhā'il Sābā, Ya'qub Sarruf (Cairo: Dar al-Ma'arif, n.d.), P.14.

2. Ibid., P.49; quoted from al-Muqtataf (1927) Vol. 72, P.427.

II. SOME ADVOCATES OF TRADITIONAL MORALITY

In his article entitled "He who forgives, he indeed does well",¹ the writer presents his views on forgiveness in a very eloquent and highly classical style. He argues that man has two options in dealing with an injury or injustice: he either reacts against it in a similar manner to the wrongdoer, or contents himself with a noble show of tolerance. He refers to the virtuous attitude of ash-Sha'bi, a learned divine, who had forgiven the insolence of a rival by pleading with God to forgive the wrongdoer whether it was his opponent or himself. No doubt, the writer was Ibrahim Ahdab, the editor of the Thamarāt, of whose style the traditional diction is reminiscent.

His moral views can be seen in an interesting article² which discloses a clash on a moral issue. The author refers to a letter, which appeared in at-Tagaddum, a local newspaper, attacking his attitude towards the performance of a play in a school belonging to the Orthodox Church in Tripoli. Defending himself, Ahdab stated that Islamic morality necessitated his departure from a place where pupils were allowed to drink real wine during the performance. He also asserted that the Bishop of Tripoli himself, in his apology to him over the event, confirmed that a Jewish pupil brought the wine without the knowledge of the producer of the play. He found no morality at all in the performance of a play supposed to be designed for moral teaching, as the communication claimed. He argued that it was as wrong to allow a pupil to commit the sin of drinking wine as it would be immoral to allow adultery on the stage for the purpose of denouncing it.

In reply to the question, raised in the letter, that

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1. Thamarat (17 October, 1878), P.4; (signed I.A.).
 2. "Telling the Truth is bitter to the taste of its rejector", by Ibrahim Ahdab, Thamarat (19 Sept., 1881), P.1.

the Ottoman authorities themselves did not prohibit wine-selling in taverns, the traditional moralist remarks that if the government allowed wine-selling in taverns, it did not allow it in public or educational institutions. In fact, the article presents a conflict between two attitudes which emerge from two different religious doctrines. Islamic law prohibits alcoholic drinks altogether, while both Judaism and Christianity do not.

In a letter entitled "The Last Word",¹ another writer joined the debate on the performance of moral plays. He explains that the difference between the disputants could be summed up in four questions:

1. Was the act of drinking wine by a pupil during the performance right or wrong?
2. Was the departure of some guests when they noticed the smell correct?
3. Was the bishop's claim that the wine was brought by a Jewish pupil true or false?
4. Was it moral to raise a problem as such which might affect the unity of the nation?

He appreciates the views of the editor of Thamarat and considers the act of drinking wine to be wrong and the bishop's claim to be false; however, he stresses the idea of a unity between the Christians and Muslims by suggesting that each community must avoid provoking the other by raising problems on moral or religious grounds.

In a series of articles entitled "Morals",² Ibrahim Ahdab dealt with the morality of love, companionship, help, appearance, etiquette, chastity, commercial and industrial dealings, and rule. In the first article of the series he presented his moral views on general grounds by asserting that a moral sense distinguished man from the beast, and that reason formed the essential basis of that sense. He stressed the signifi-

1. "The Last Word", by T.J. of Damascus, Thamarat (10 Oct., 1881), P.4.
 2. "Morals" by I.A. (Ibrāhīm Ahdab), Thamarat (23 April - 25 Jun., 1884). Issue numbers: 477,478,479,480,481,482,483,484,485,486. The full reference appears in the bibliography.

cance of education in acquiring morals and appreciated the wisdom of a man in choosing his friends, obeying his ruler, and refraining himself from the absurdities of meanness and backbiting. The ordinary reader of these articles may be enchanted by their poetic style and the brilliant arrangement of words and expressions, while the investigator may be disappointed finding no rich food for thought in them. Probably, this traditional moralist thought that repetition and rhythmical effect would drum moral habits into the reader's mind. There is every reason to believe that Ahdab drank deep in the words and manner of the early Islamic generations, for he mostly drew his examples from their statements and their conduct. He himself recommends the reader to follow the example of the Salaf¹. The Quranic style dominates his writings, and his short, sporadic sentences readily remind the Arabic reader of the artificially decorated style of al-Maqāmat (Séances) which had flourished in the Arabic literature of the twelfth century.

In the tenth article of the series, Ahdab considered the morality of rule and policy the most important element in the construction of human societies. His Islamic tendency appears again in his derivation of the term Hukm (Rule) from al-Hakīm (Wise), one of the attributes of God, and in his statement that the ruler who did not fear God would not be fit to rule His creatures. He proceeded to imply moral lessons in his prescription for the ideal ruler. He who wanted to rule, he explained, must be wise and unhasty in the application of Islamic law. Wise rulers, he added, must be obeyed, for God's words themselves demanded man's submission to his ruler with his submission to God.²

1. The Salaf refers to the early generation of Muslims; "Morals and Good Habits", by I. Ahdab, Thamarat (10 Dec., 1883), P.2.

2. The Quranic verse reads: "O believers, obey God, and obey the Messenger and those in authority among you." Arthur J. Arberry, The Koran Interpreted, "Women", Verse 59, p. 81.

In an essay on the Caliphate, Ahdab asserts that the ruler is to be considered "the deputy of the Prophet and the shadow of God on earth."¹ Of course, he says in another article that no obedience is due to anybody advocating disobedience of God.² Ahdab often concludes his articles on morality with a few lines of poetry, apparently his own. They seem to be hymns in tone and content. His approach is similar to that of Henry Wace in expounding his views on moral or religious topics.

In his essay entitled "Science is a Glory whose Freshness never Wears out,"³ Ahdab concentrated on the advantages of learning in general. However, he is not accurate in using the term 'Ilm (Science) which seemed to be confused with "Knowledge", and the term "Adab" which itself could be misunderstood as referring to either 'literature' or 'morality'. Ahdab considered the acquisition of knowledge a necessary means to a higher end: a higher morality which would serve the welfare of the individual in this world and the next, as well as the welfare of his society. Although he preferred the mass of knowledge to the rich, he failed to offer a convincing argument.

Knowledge, to the Reverend Harvey Porter of the Syrian Protestant College, was not a sufficient basis for the progress of a nation simply because man's reason failed to comprehend the whole truth. Porter explained that science, though it had achieved great triumphs over nature, still remained dumb in the face of life's mysteries. In his annual address⁴ at the Syrian College, Porter stressed the points: first, that moral rules were the real basis of human progress, and secondly, these rules were preserved when they were supported by religion. In order to

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1. "The Caliphate belongs to Sultan Abdul Hamid", Thamarat, (24 June, 1885), pp. 2 - 3.
 2. "No obedience is due to the man advocating disobedience of God", by I. Ahdab, Thamarat (18 November, 1885), P.2.
 3. Thamarat (17 June, 1885), P.2.
 4. "The Basis of True Progress and Its Preservation", by the Rev. Harvey Porter, Thamarat (29 July, 1885), Part II, P.3.

support his views, Porter referred to ancient civilizations. The morality of the Romans, he said, had declined when their philosophers proved that Roman gods were false and superstitious. He did not, of course, ignore the significance of other factors such as the advancement of the sciences, rational philosophy, and the wisdom of rulers. He declared that the origin of morals was unknown, yet he speculated that it must be related to a metaphysical power.¹ Since the existence of the soul was not rejected by science, there must be a metaphysical basis for morality. However, his attitude towards the question of morality is similar to that of Ahdab, though he shows interest in rational philosophy.

In his review of a book entitled "Morals and Habits"², which was written by Hanna Kurāni, the editor of Thamarat appreciated the subject and style of the work, and noted that it was one of the earliest contributions to the study of morality by a female writer. He introduced her as a *teacher at a Syrian Protestant school*, who was distinguished by her love of virtue and country. He stated that the book was correctly divided into chapters that he failed to find any drawbacks open to criticism. However, he did not like the author's citing from the European moralists and demanded that all native writers quote from their own famous men whose name must be always glorified. Such a view, of course, readily reveals the reviewer's identity which manifests himself in his interest in the old as opposed to the modern thought which was mainly introduced to the Arab world by Christian writers. Unfortunately, the work is not available, and the review of the work is not substantial, for there is no mention of any school of morality or any argument which has been connected with old or new schools of ethics. No doubt, Hanna Kurāni must have based her argument

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1. "The Basis of True Progress and Its Presentation", Harvey Porter, Thamarat (29 July, 1885), Part II, P.3.
 2. "Morals and Habits", a review of Hanna Kurāni's book by the editor, Thamarat (27 April, 1891), P.2.

on Western moral thought since she quoted from it. I presume that Spencer, Sidgwick and other moralists were her major sources.

In his article on "Example and Representation",¹ As'ad Dāgher argued that learning alone was not a sufficient basis for morality unless the parents themselves became good examples for their children. He stated since the strength of observation of the child was very distinct, good conduct of the parents was necessary. He referred to the fact that the child often followed the example of his parents simply because his tendency to imitate them, a tendency which constitutes an essential part of the child's nature. He confirmed that the tendencies of imitation and representation were rooted deeper in the child's constitution than his inherited morals themselves. He declared that there were many authors who shared this view, but gave no further mention of them. Nor did he explain why imitation and representation were stronger instincts than inherited morals.

Noticing a change in the morality of the young, Dāgher directed his moral advice to the parents, particularly to mothers, who must not allow the young to acquire bad habits by treating them loosely and indulgently in the process of upbringing. Dāgher stressed that parents should be strict with their children as he himself was strict and insistent in his advice to the parents.

In another article entitled "Cunning as a Means of getting rid of Want",² Dāgher concentrated on explaining the principle of the struggle for existence as applied to the world of plants and animals, including man. He attributed the progress of the Westerners to their clever and tricky means of exploiting nature. Perhaps, it is worth translating his own words only to reveal his early attitude towards the west, an attitude

1. "A Word on Example and Representation", As'ad Dāgher, Thamarat, (16 April, 1888), P.2.

2. As'ad Dāgher, Thamarat (6 August, 1888), Part I, P.3.

which he later changed:

The Westerners have not confined their cunning methods only to the exploitation of animals, plants, and inorganic matter, but they also set traps in dealing with us, as well as concealing their traps from one another.¹

Dāgher's antagonism² to the West was implied in the argument that the Western corruption crept to the East in the shape of false appearances, in clothing and new fashions. He attacked the Easterners who, in the process of imitating the West, neglected their own traditional cloths, an action which would affect the national textile industry, producing poverty and need in both Syria and Egypt, and, eventually, leading to moral corruption. He referred to the bad conditions of agriculture in the Syrian town of Latakia where Dāgher was living at the time.

Dāgher was born in Kafar Shima, Lebanon, and was educated at the Syrian Protestant College. After graduation, he went to Latakia where he taught at the American School. He contributed to both al-Muqtataf and the Thamarat during his stay in Latakia. Later, he left for Cairo where for two years he was assistant to Fāris Nimr, the editor of the pro-West newspaper, al-Muqattam. Dāgher held a respectable position under the British rule in Sudan where he stayed till 1924. He then settled in Cairo until his death in 1935.

In a series of articles which appeared in the Thamarat under the title of "Advice from the Old to the Young",³ John Wortabet launched his moral views which he mainly based on his religious doctrines. These articles were originally an annual address delivered at the Syrian Protestant College in 1894.

1. Ibid., P.3.

2. Also see Bishāra Shidyāq's antagonistic attitude which was commented upon by the editor of the Thamarat (18 Feb., 1889), P.3.

3. "Advice from the Old to the Young", John Wortabet, Thamarat (1894), Issue nos: 995,996,997,998,999.

Wortabet's moral advice included a collection of statements quoted from intellectuals over some 5,000 years. He asserted that man's conduct was innate and firmly associated with his nature. The main virtues to him were search for knowledge, duty, and piety. He appreciated assiduity and preferred it to wittiness which he described as "an illusion". In spite of their poor circumstances, said Wortabet, Linnaeus, Miller - the geologist - Stevenson, and Watt achieved great success. Man's success, he argued, depended on his choice of a particular end which must be followed up in the development of any career, scientific, industrial, or commercial. Although he laid much weight on the skill and expertise of a profession, he asserted that honesty, righteousness, and truth were more important than craftsmanship. He stated that money itself could be used in different ways, good and evil, and that only the wise would be able to choose what could be benevolent in this world and the next.

It is interesting to find that Wortabet, in the last article of the series, referred to the existence of a large number of translated books which were found in the houses of those who had been particularly acquainted with European languages and thought. Some of these books seemed to him to be immoral and, therefore, they must be deported like any insolent company. He did not name any of these books. Moreover, he concentrated in his moral advice on flexibility in conduct and kindness in dealing with people, qualities which reveal, to me at least, Wortabet's practical principles of morality. There is, of course, no particular theory of morality which was adopted by Wortabet except the general and ordinary principles of traditional morality. Yet, his views seemed to be modern in the sense that he stressed the significance of duty, honesty, and righteousness, all prototype Victorian models of behaviour. Wortabet never failed in support of his views to cite verses from both the Bible

and Islamic tradition.¹ He also exploited some familiar local sayings as well as some Islamic moral rules which were implied in classical Arabic verses either attacking frivolity, meanness, and dishonesty, or appreciating assiduity, truthfulness, and good company.² His words implicitly reveal that he expected a promising future for his students. Like most traditional moralists, he praised trust and truthfulness.³

In several articles entitled "The Adjustment of Morals",⁴ a writer from Damascus signed himself M.M. defined ethics as the knowledge of virtues and the means of their acquisition. He divided man's conduct into two aspects natural and acquired. By natural conduct he meant man's temperament which seemed to him to be innate and unchangeable, while by acquired morals he referred to the morals which were the result of man's choice and habit. He linked acquired morality with the Islamic principles by citing the Prophet's words that: "I have been sent to complete the sanctions of morals."⁵ The Prophet was sent, to the writer's mind, to adjust the acquired morals, for he referred to a Quranic verse⁶ which maintained that man's spirit was inspired by both characters of right and wrong. The moral role of the soul, he expounded, could be seen in the process of judging whether an action was right or wrong by perceiving the

1. Thamarat (24 Sept., 1894), P.3.

2. Thamarat (1 Oct., 1894), P.3.

3. "A Word for the Sensible Man", J. Wortabet, Thamarat (26 March, 1906), pp. 5 - 6.

4. "The Adjustment of Morals", signed M.M., Thamarat (26 Sept. - 5 Dec., 1898); Issue numbers: 1199, 1200, 1201, 1208 and 1209.

5. Thamarat (26 Sept., 1898), P.1.

6. The Quranic verse reads thus:

"By the soul, and That which shaped it
And inspired it to lewdness and godfearing!
Prosperous is he who purifies it,
And failed has he who seduces it."

(The Sun,XCI); A.J. Arberry, The Koran Interpreted, op. cit., P.646.

causes of difference and concordance in it, and this was not achieved through the tangible senses. He attributed the faculty of cognition sometimes to the soul and sometimes to the mind.¹ He presumed, for example, the existence of an ideal image for every person, a concept similar to that abstract world of Plato. He held that man's morality would be measured by his struggle to attain that perfect image.

The moral vision of the writer is not clear, particularly when he attempts to philosophise his religious principles. His arguments, though containing some facts, seemed to be unconvincing. His examples revealed his obsession with his local environment, for he presumed that man's morals could be judged in a way similar to the way by which the qualities of the horse and the hawk were to be judged.² He classified the virtues under four labels: wisdom, chastity, courage, and justice, and included a number of moral qualities under each label. He connected man's happiness with that of his society without analysing the nature of utility or necessity in that relationship.

The writer devoted a special article³ to his views on the innate nature of morality. He referred to the traditional controversy between those who held that man was born good and innocent, but was spoiled by education and society, and those who held the contrary. He adopted Aristotle's view that man's nature was characterized by both good and evil, and that evil nature could be influenced by moral and religious education. He accepted Aristotle's argument that what was changeable in man's conduct could not be considered as innate. Although he believes that good or bad temperament was innate, he holds that religious education and moral guidance

1. Thamarat (3 Oct., 1898), P.1.

2. Thamarat (10 Oct., 1898), P.6.

3. "The Adjustment of Morals: Temperament", signed M.M., Thamarat (5 Dec., 1898), pp. 6 - 7.

would affect vicious tendencies.

In his essay entitled "Our Morality And Western Civilization",¹ Muṣṭafa Ṣādiq ar-Rāfi'ī argued that man's instincts indicated God's design and that there was no moral principle without a function or utility in it. He held that although instincts were determined by Divine Law, man controlled them by striking a balance between the bestial and the human in his nature. He argued that although moral sense seemed individual in part, it was actually social in essence. He defined morality as the process of the individual's organization into the common interests of his society.

Man's conduct, he stated, was characterized by two elements, external and internal, and he connected internal behaviour with religious feeling, attributing the moral decline of the West to the individual's indifference to this religious feeling. The Westerners, he wrote, made fun of morality simply because they believed in natural law, forgetting the moral causes of the First World War. He presumed that there was a certain law which controlled every energy in the universe, and that similarly man possessed a law by which he directed his energy towards good or evil. He believed that religious doctrines and moral principles were nothing but the destined movement of that law. He declared in morality Easterners surpassed the Westerners because they (the Westerners) lacked a sense of humanity through their adherence to natural law. He also argued that Westerners were bound to accept what was moral or immoral in a civilization they themselves had made, while the Easterner had the option of choosing from that civilization what suited his habits and doctrines.

His article is more or less polemical for he vehemently attacks the secularists who seemed to him merely a group of translators. It is worth translating his own words:

I say that in the course of progress we have been infected by a

1. Hilal (1928 - 1929), pp. 801 - 804.

group of interpreters who have made translation from European languages their profession. Translation is, consciously and unconsciously, a mere imitating profession and an enslaving subordination, for the translators' mind by force of habit and nature, will become attracted to their source material without reflection. If it is true, as some wise men say, that our career makes us, then, how great a danger are those interpreters to the nation, its nationality, and its individuality if the nation submits to what they make claim to..., they will interpret it into another nation.¹

Rāfi'i's theory of modernism differed from that of the Christian writers. He wanted his countrymen to be selective in importing Western culture and morals, for he thought that by the preservation of their individuality Arabs would achieve progress; and he announced that this same Arabic individuality had resulted in the present position of the Arabs in the struggle for civilization. This concept of individuality is not clear; it is neither the Arab nationalism, claimed by Christian writers, nor an Islamism, claimed by Afghani and his disciples. It reflects, to me at least, a kind of arrogance or emotional partisanship, for his attack on Western morality lacks subtlety and cogency. Rafi'i forgot, I presume, the influence of 400 years of Ottoman rule on that same Arab "individuality" whose omission was repeated throughout the period. A belief in an original, pure Arab "individuality" is one of the cornerstones of traditionalist thought. Indeed, Rafi'i was considered a modernist by some of his contemporaries because of his advocacy for "selective" appropriation of Western culture and morality. Another advocate of this view was Abbas Mahmud al-ʿAqqad, a member of the avant-garde in modern Arabic literature.² M.M. Badawi, fellow of St. Antony's College, Oxford, remarks that: "ʿAqqad can also be a stern moralist, as in his "The Lesson of Beauty" (Diwan, P.36) or "Pharoah's Column" (P.37), where he draws an obvious contrast between man's ephemeral and fragile existence and the

1. Ibid., P.804. The translations are mine.

2. M.M. Badawi, A Critical Introduction to Modern Arabic Poetry (Cambridge: C.U.P., 1975).

durability of stone."¹

In a similar manner to that of Rāfi'ī, the writer of an article entitled "Arrogance and Modesty"² attacked the advocates of modern morality and civilization on the grounds of their arrogance. His attack on arrogance was based on al-Ghazāli's moral views implied in the latter's enormous work, Ihyā' 'Ulūm ad-Dīn.³ The writer of the article stressed that man should not be arrogant because of his family name, appearance, or even his scholarship, simply because these characteristics were all transitory. This view reflects, of course, the author's pessimistic attitude as well as his adoption of al-Ghazāli's ascetism.

In his reply to a question⁴ raised by Dr. Jessup of the Syrian Protestant College which appeared in the Nashra al-Usbū'iyya (The Weekly News) about the greatest dangers which threatened mankind in the twentieth century, a certain Yusuf Jurjus ar-Rishāni pointed out that there were two dangers, decline in religion and decline in morality. He confined these dangers to Syria where he found the Syrians of his time over-indulged in their earthly interests. He recognized the marks of decline in religion in six observations⁵, while he attributed the moral decline to

1. Ibid., pp. 109 - 110.

2. "Arrogance and Modesty" (signed Bashir-Sidon) Thamarat (29 July, 1901), pp. 3 - 4.

3. Muhammad al-Ghazāli, Ihyā' 'Ulūm ad-Dīn, 5 vols. (Beirut: Dar al-Mārifā, n.d.), vol.ii.

4. "A Reply to a Suggestion" by Yusuf Jurjus ar-Rishāni, Thamarat (16 Sept., 1901), pp. 6 - 7.

5. They are:

- The lack of religious enthusiasm in cities, towns, and even in villages.
- Sectarian differences among the Christian Churches, emerging from their early fanaticism and ignorance.
- The lack of local and national societies of charity which had allowed the Americans and the French to sponsor the Syrian churches over a long period.
- The limitations imposed on missionary work by the churches themselves on the grounds of the unavailability of talent.
- The distinguished Syrian's devotion of too much time and labour to profit and social position rather than to religious pursuits.
- One could rarely find a Syrian, whether rich or poor, who was content with his present state of living, a phenomena which attested to the decline in their religious tendencies.

three points which more or less accord with the Muslim traditionalists: imitation of the West, adoption of an immoderate liberty in moral conduct, and the effect of drunkenness on morals as a whole. With regard to the first observation, he stated that the Syrian succeeded only in imitating the West in terms of modern fashion, but failed to avail himself of the great progress in industry, commerce, agriculture, and the sciences. Dangers of imitation in fashion, he wrote, would have effects in two ways: firstly, by the loss of national capital in buying foreign clothes, and secondly, by reducing the national welfare which would undoubtedly lead to poverty and evil.

As for the unrestricted liberty in morals, the author held that it would decrease the population, spoil family life, spread dishonesty, and reduce chastity. The writer also sharply attacked the habit of drinking which seemed to be very common at the time. He largely spoke of the disadvantages of this habit by stressing its effects on the body, the mind, and, eventually, on morals. He added that this bad habit would remove man from his religion, the source of moral principles. He concluded that if the Easterner lost his religion and morality, there could be no other result than the loss of his civilization and the decline of his society.

The views of this Christian writer are extremely similar to the religious and moral tendencies of the Thamarat whose editors and most of its contributors never freed themselves from this limiting line of argument.

In his essay entitled "A Moral Philosophy without Religion"¹, Father Alexander de Viallé, a Jesuit, dealt with what he called "La Morale

1. Alexander de Viallé, al-Mashriq, vol.7 (1904), pp. 834 - 842.

Indépendente", a secular system of morality which denied its Divine origin. The author attacked the advocates of this system who seemed to him to be writing a contradiction, atheism and *immorality*. For him, there was no morality without a belief in God, and any attempt to found a system of ethics which separated morals from their religious origin would be doomed to failure. He declared that this type of moralist included the evolutionists.

III. SOME ADVOCATES OF SECULAR ETHICS

In a letter entitled: "Are Morals Innate or Acquired"¹ which appeared in the Hilal in 1892, Aspridon Abu ar-Rūs tackled the problem of morality as one of the many questions raised by Jurji Zaydan, the editor of the periodical, in the first issue in order to stimulate writers to contribute to his review.

Abu ar-Rūs began his letter by defining "morality" as the avoidance of disgraceful actions; "innate" morality was something that was rooted in man's nature, and "acquired" morality acts which were accepted or performed through man's free will. He explained that sociologists asserted that man's progress is based on his recurring needs, and that his development is according to three stages, innate, social, and political. The author applied the so-called principle of necessity or need to plants and animals which saved no effort to preserve their lives. He argued that the concept of morality was not spontaneous in man because in his early history man did not recognize the principles of morality, and that it was the principle of necessity that made him think of moral rules. He supported his view by Montesquieu's hypothesis that man's earliest

1. "Are Morals Innate or Acquired", Aspridon Abu ar-Rūs, al-Hilal (1892), Vol. I, pp. 86 - 88.

sensations were fear, fright, weakness, besides his main needs for food and preservation of life. He believed that there was no room for morals in the vision of the early man because his mental faculty was not mature enough to construe such a concept.

It was also need and necessity, he said, that made man think of how to preserve his life and property, and that brought him close to his fellow-men whose partisanship resulted in the ordinary social life from which man began to acquire morals. At this stage man's mental faculty developed and his wisdom came into being when he began to differentiate between right and wrong. Supporting his idea, he referred to Voltaire's view that reason is the basis of morals in the society, though he does not cite the source of Voltaire's argument. The author tries to show that the principles of struggle for existence and the survival of the fittest, which seemed so barbaric at the time, in fact became the origin of morality in acts of restraining those primitive desires by moral rules laid down by the intellectuals who created the odd civilizations of Phoenicia, Egypt, Babylon, and by the Prophets who established the new civilizations. He held that morals were acquired concepts resulting from man's living in a community whose survival and development were based on the morality and honesty of mutual transactions. Virtue became known as good or right, he explained, by its antithesis, evil or wrong, and later virtue became a familiar concept and settled in man's mind as an abstract entity.

Perhaps some European writers share with him his views that morals are acquired characters, particularly the intellectuals of the rational school and sociologists, but Abu ar-Rūs does not explain the idea of free will, though he has defined the word 'acquired' as man's own intentions in approaching an action. Although he bases the concept of morality on the development of reason and displays his interest in

Montesquieu and Voltaire (which shows his interest in rational philosophy), he does not offer any specific interpretation of the French writers. His treatment is characterized by general ideas only.

An answer to the above communication appeared in the Hilal¹ in which Niqola Fayyad rejected Abu ar-Rūs' negative attitude and the Western basis of his argument. He refuted the idea that man had been like the animals in his early history, and argued that the evolutionary morality suggested by Abu ar-Rūs implied that animals must also develop into moral beings according to such universal natural laws of progress, but this was impossible. He wanted to know how it was to be proved that man had no morals in his early life, and why animals had no morals at any time, though they were similar in their sensations of fear, fright, hunger, and weakness. He explained that man's mind was the place of his emotions and these emotions were the source of morality. Morals, he said, were already present in man's nature and from this source morals sprang to fulfil social needs.

He said that man's nature had a spontaneous faculty with which he invested morality. In order to explain his idea of moral spontaneity, Fayyad said that if a newly born baby was put in a place untrodden by man and was left to live with beasts, he would not articulate a language, but as soon as he was brought into human society, his inborn faculty of articulation would appear. The same would not be true for animals which had been raised in a human community. He did not ignore the role of mutual transactions in society, but stressed that without the innate readiness of man to virtues there would be no moral concepts ensuing from the mutual interests. His words imply that there is a power beyond these faculties and that the evolutionary theory of morality cannot be applied to man's achievements.

1. Ibid., pp. 161 - 164.

In an article entitled: "Virtue"¹ which appeared in the Muqtataf in 1896, Jurji Yanneh tackled the conceptual development of morality. The article originally was an address delivered to a women's charitable society in Beirut. The author offered many definitions for virtue as depicted by philosophers, Greeks, Romans, and Easterners. He explained that neither articulation nor mind distinguished man from animal because both, to him, shared senses, desires, and other bestial tendencies. He said some scientists held that animals had their own language and brains by which they might, to an extent, conceive of what was going on around them. What decided man's superiority to other creatures, he said, was the moral power in his spirit where images of absolute beauty were resident. He believed that earthly desires were controlled by the moral power which rebuked the deviating tendencies in man. He asserted that the conflict between virtue and evil took place from the earliest history of man as pictured in ancient religions, particularly Buddhism. He added that there was no scientific definition for man's faculty of morality, and that scientists held that morality could only be recognized through its effects. He showed that universality was one of the main characteristics of morality because virtue did not belong to one individual, one country, or one nation, but was found in man from the earliest time of his existence. Such a statement, of course, shows that the author believed in the spontaneous doctrine of morals.

Jurji Yanneh, a distinguished historian, argued that belief was a virtue prior to all other virtues because the origin of worship itself in the ancient nations was based on the distinguished actions of gods whose virtues entitled them to adoration. He said that all religions described their gods as having extraordinary merits of which

1. "Virtue", Jurji Yanneh, Al-Muqtataf (1896), Vol.XX, pp. 415 - 424.

purity, truthfulness, magnificence, and wisdom were part. He held that old nations first worshipped one God which they called by many names such as Jehovah, Allah, Zeus, and Jupiter, which all meant one conception, the magnificent. Paganism, he said, appeared later when abstract conceptions were incarnated in idols for the common people. Thus the author - like Afghani - differentiated between the belief of the masses and that of intellectuals. He asserted that the clergy and the learned men believed in one God and that their belief was a virtue. He explained that other virtues were also embodied in the shape of gods such as wisdom (Minerva) and truthfulness as in Baal.

He referred to some bad habits which had been exercised by such ancient nations as Egypt, Assyria, and Persia. He criticised the Egyptian idea of morality as shown in the Egyptian warrior's practice of mutilating the bodies of their slaughtered enemies, and any government which considered such actions as virtues, by assigning special records to them. Assyrians were also, to him, cruel and barbarian for they used to cut off heads of their enemies and carry them on their spears; besides, they tortured their captives either by piercing their lips in order to tie them together in tens or more, or by flaying their skins. Persians, he said, were wrong in avoiding trade and transactions for fear of falling into the vices of lying and humiliation, because their leisure brought other corruptions. Spartans displayed immorality in the treatment of their servants for the young Spartans used to kill the serfs only to practice archery. Raiding and stealing were common and encouraged by Spartans who admired the cleverness of the robber. He added that the Romans were no less vicious than the Spartans for they built particular amphitheatres whose arenas presented displays of bestiality and murder. He disapproved of the Indian morality of wife-burning after the death of the husband, and found that such an action was in contrast to their religious teachings, which denied even the slaughter of an animal. By

referring to the vices mentioned above, the author wanted to show that the old concepts of morality were imperfect and lacked wisdom and subtlety.

He found that the moral principles of his time were very close to perfection by virtue of the natural laws of selection and progress. Morality flourished, he said, with the appearance of Christianity which spread of gospel of love of God and one's fellow-man. He demanded that writers devote their energies to spreading virtues for the advancement of the nation.

As we have seen the author traces the development of moral concepts through the ancient nations and doctrines and shows the difference between virtue and vice, and how some vices have been considered by some nations as virtues. The author believes that Christian morality comes at the apex of all other moral systems, but he does not explain how Christianity, by patience, sacrifice, and tolerance, has overcome tyranny and cruelty, and how it has changed the history of mankind. He says nothing of the modern civilization or of its debt to Christian morality or the progress of science, though he alludes to the gradual laws of perfection. Nothing is said of Islamic morality perhaps because the members of the society were exclusively Christian. Such gathering into doctrinal or sectarian groups is still active in the Arab world today, particularly in Christian communities. Morality, for the author, seems to be an innate quality which has been conferred by God upon man from his existence on earth, though the author's historical survey shows that morality has gradually developed in the course of time. One may find some contradiction in these two concepts of morality as either innate or as God's gift, for morality as an innate quality submits to the law of gradual perfection while morality as God's gift to man should not submit to such a law because God's gift needs no process of perfection. The

contradiction lies in the author's attempt to compromise between an evolutionary and a traditional ethics. He has not pointed to the role of mind, will, and education in adjusting morals and implanting virtues. Although he says that the meeting was held to celebrate the virtue of charity, he does not explain the advantages of this virtue and its effects on the relationship between social classes.

A controversy between Salama Mūsā and Tawfīq Diyāb, an Egyptian writer, over the connection of literature with moral principles appeared in the Hilal¹ in the 1920's. The controversy originally occurred in a verbal symposium held in Cairo, but was published later in the Hilal and stimulated several articles.

Mūsā argued that literature should not be influenced by moral rules because morals were changeable while literature was eternal. In order to support his view of change in morals, he referred to an interesting example: some three hundred years previously a certain Shaykh (Chairman) of the Azhar claimed that coffee was not allowed according to the Islamic law of morality, while the contemporary Azharites, he said, were fond of drinking coffee calling it the virtuous wine (Khamr as-Ṣāliḥim)². He also referred to Muṣṭafa ar-Rāfi'i,³ a distinguished man of letters, who described the Egyptians who wore hats as impudent and frivolous. He ironically wanted to know whether such a modern habit was to be judged as virtuous or vicious. Of course, the wearing of a hat, to Musa, was a virtue only because it reflected a spirit of progress, while it was a vice to Rafi'i who belonged to a neotraditional school of morality.

In his argument Musa concentrated on the view that morals were relative in time and place, while literature was not. Appealing to history, Mūsā pointed out that it was immoral in France to be a royalist,

1. "The Open Literature", by Salama Musa, Hilal (1927-28), vol.36, pp. 310 - 316.

2. Ibid., P.310.

3. Rāfi'i's attitude towards western morality has been mentioned above.

while it was a crime in Egypt to be republican. He also asserted that the morals of ancient Egypt were no longer accepted in his contemporary society, while the value of a literary work one or two thousand years old remained. For example, if a writer clung to the morality of chivalrous Europe, or to pre-Islamic polyandry, or to the principle exhibited by Cleopatra's marriage to her brother, his art would not seem as universal or prophetic. Moralists, to him, were like prophets, if not prophets themselves, for all prophets revolted against traditional morality.

Mūsā held that innovation was a necessary element in the process of improving the phenomena of morality, religion, and politics. The advocates of modernism must be protected, to his mind, against traditional morals and thought. He wrote that when Thomas Bain, a hundred years before, claimed that the royal rule in England must be demolished, the government offered a reward for his death, while the contemporary Times, only after a period of a hundred years, changed its moral attitude towards Bain by appreciating the man's merits and commemorating him.¹ In the face of such continuous change in moral concepts, Mūsā suggested that the man of letters must only respond to his own spontaneous and creative inspirations, for there would be no progress if he adhered to the morality of his time. The learned man, he argued, never fears any authorities, religious, moral, or political. The scientist would deny morality, he remarked, as Bruno denied religion, and the artist would be a failure if his observations and judgements were not freed from moral restrictions. Science, he said, dealt with the facts, while literature elevated the observations of real life to a more superior world. Faithfulness to the work of art must

1. Ibid., P.312.

be, said Mūsā, the only obligation of the writer who should be allowed to deal with social, particularly sexual, problems as exactly as the scientist was allowed to investigate poisonous gases, though, following the use of such gases in the First World War, the latter work seemed certainly more dangerous and immoral when compared to the former.

In fact, Mūsā's secularism was implied in almost every argument. The departure from traditional morality required by a Christian writer living in a conventional Islamic society was indeed a revolt which came from a sincere scholar whose moral principles manifested themselves in a demand for social reform and freedom of thought. He referred to many artistic examples only to indicate the noble intentions of the artist in depicting what might be thought to be an immoral action. Indeed, some apparently immoral scenes which are skilfully manipulated by moral writers can render vice naked and stimulate moral lessons in the hearts of the reader or the audience. Mūsā declared that frankness must be the writer's duty, particularly after the advancement of psychology, a science which revealed the hidden causes of some moral deviations. If moral problems were dealt with in a rational spirit, he suggested, they would help man to control his bestial half. However, Mūsā himself, as can be seen here, could not completely separate literature from morality, for he recognized the role of the writer in stimulating higher morality or in creating new laws of morality.

Ismā'īl Maḥḥar, in the article entitled "Science and Ethics",¹ gave his summary of Haldane's views as they appeared in the latter's reply to Bishop Inge. Maḥḥar declares that he deliberately deletes the biologist's direct, perhaps polemical, tone in replying to the Bishop and has confined himself to the effects of science on morality.

1. "Science and Ethics", Ismā'īl Maḥḥar, al-Muqtataf, vol. 73 (1928) pp. 128 - 133.

He paraphrases Haldane's arguments into five points:

1. that science by such inventions as steam-ships and electricity can offer help to those who are afflicted by calamities in the Far East in modern times, while previously the moralist had been bound hand and foot.
2. that science can produce new responsibilities and duties which would render man's conduct moral or immoral according to the consequences inferred by the scientist from hereditary disease, for example.
3. that science provides man with various outlooks which could help control mythological doctrines, or the belief in the principle of the survival of the fittest, or the adoption of a position of moderate Epicureanism which would ignore social questions entirely.
4. that anthropology offers specimens of comparative morality which throw light on the development and nature of the moral sense and its conduct.
5. that science might affect morality through the noble conduct of the scientist who devoted themselves to the search for truth.

Mazhar also referred to Haldane's view that man's morality in general could be seen in terms of material help for his fellow-men - food, clothing, and medicine - or in terms of education about hygiene, which preserved his body rather than preparing him for salvation in the next world. Haldane argued that medicine would be more beneficial than any hedonistic principle of happiness. However, Haldane's ethics are based on the view that man's moral sense must be functional towards society in the same way as cells are in physiological harmony in the body, preserving the unity of the body.

In his article entitled "Between Science and Religion",¹ a certain Ibrahim al-Misri claimed that science failed to offer any positive information about the origin of morality in man's nature. It is interesting to see that the author here refers to the habit of associating science with scepticism and atheism. He stated that the insistence of scientific methodology on observation and verification led to the rejection of the existence of the metaphysical world, and that scientific conclusions deny Revelation. Advocates of such a claim, he said, were many and he gave the examples of Büchner, Haeckel, and Renan who wanted to replace religion by science and make the latter a basis for morals.

The author asserted that modern science was only able to establish the laws of natural phenomena by understanding the external relationships between them, while it failed to comprehend the essence of life in matter. He also added that the process of evolution itself was a puzzle for scientists and failed to explain why there was evolution and what was the ultimate aim of such a theory. He held that religion was a means, or a method, other than science which enabled man to understand what science failed to explore. Scientific conclusions, he said, were temporary, relative, and changeable; they dealt with tangible objects, not spiritual ones. He was aware that scientists of the nineteenth century succeeded, to an extent, in removing both religion and metaphysical philosophy from their privileged position, but he found no relationship between science and ethics, despite the attempts of scientists by a mere rational approach to base moral sense on either a biological interpretation or sociology. Philosophers such as Nietzsche, for example, he wrote, exploited Darwin's principle of the survival of the fittest to glorify a philosophy of power which justified the destruction of people and encouraged vices such as avarice, exploitation, and imperialism. With regard to a sociological

1. "Between Science and Religion; Religious Sensation is the Origin of Morality", Ibrahim al-Misri, Hilal, vol. 36 (1927-28), pp. 1114 - 1119.

origin of morality, Ibrāhīm Miṣri referred to Durkheim's attempts to base moral principles on social interests and co-operation. The author concluded that the first group failed simply because they relegated man's moral sense to mere biology whose concern was the study of external movements, whereas morality was in fact a faculty, a part of man's spirit. He also rejected the sociological ideas of co-operation, which consider morality as only a social necessity, by arguing that co-operation was imposed on man and man is, theoretically, more or less free to adopt or reject it. He believed that the moral sense was not a product of society but was a component of man's nature, and that only man himself could decide to sacrifice his own interests for the welfare of society. He concluded that only in the religious feeling of man could be found the origin of virtues and that religion itself, broadly understood, based its teachings on moral virtues. Although the author stated that religion depended on the moral faculty, he converted the formula by considering religion the basis of morality. The article seems to be logical in its presentation and substantial in its rational exposition, yet one feels that the author has an overriding sympathy with religion as against science. This article can be considered a reply to Maḥzar's argument which supports science, though there is no evidence.

Allowing for a certain degree of overlap, one can identify three main types of moralist in the Arab world during the period 1860 to 1930. First there were the traditionalists - such as Ibrahim Ahdab - who derived their moral codes entirely from their religious doctrines and traditional habits. Muslim traditionalists founded their ethics, in theory, on the moral principles of the Qurān, and in practice, on the examples of the Prophet, his Companions, and the early generation of Muslims. Christian traditionalists, mainly Jesuits, of course based their moral views on Christianity. These moralists held that revelation

was the only origin of morality, and that inherited habits and conventions constituted principles of conduct and codes of behaviour. The virtues recommended were particularly designed for man's interest on earth and his salvation in heaven.

The second group, which I term "neo-traditionalists", was formed by the majority of the Muslim and Christian writers who were, more or less, attracted by the Western way of life as displayed in the labours and manners of Western philosophers, scientists, and social reformists. The Muslim neo-traditionalists, such as Afghāni, 'Abduh, and their disciples, in the process of compromise between traditional and "secular" morality, stressed the moral principles of the Salaf (the early generation of Muslims), though the term Salaf itself was expanded by 'Abduh as to mean the Sunna tradition in general.¹ Utilizing the Islamic principle of Maṣlaḥa (public interest), Afghāni and 'Abduh allowed innovations and modern interests to remain in the framework of the moral concepts of Islam. Both thinkers embraced modern science and philosophy by applying scientific methodology and rational conclusions in their writings. Hourani remarks that the term Maṣlaḥa gradually turns into utility, ... Islam itself becomes identical with civilization and activity, the norms of nineteenth-century social thought".² While the Muslim neo-traditionalists stress a utilitarian view of altruism, as appears in rationalist interpretation of Quranic verses, the Christian equivalents welcome Western morality in so far as it leaves Christian faith untouched.

The difference between these two groupings within neo-traditionalism lies in the fact that the Christian moralists implicitly and explicitly separated moral and religious authorities by stressing the significance (on the Western example) of the more socially based virtues

1. Albert Hourani, Arabic Thought, op. cit., P.149.

2. Ibid., P.144.

of duty, assiduity, and social interests, while the Muslims adhered to the traditional integrity between the two authorities. However, by the end of the nineteenth and beginning of the twentieth centuries, the symmetry of this group was disturbed by the advent of a third "select-ionist" faction. These writers - such as Mustafa Sādiq ar-Rāfi‘ī and A.M. al-‘Aqqād - while insisting on the importance of the Islamic past were equally vocal on the necessity of bringing over some of the new Western innovation (in rather a piecemeal way) as the Arab world entered the twentieth century.

The third group consisted of those, like Mūsā and Mazhar, who , enthusiastic about Western industrial and scientific progress, unconditionally accepted the prevalent Western morality . Of all the groups this last was probably the least effective, attempting as it did , to superimpose an alien morality on a traditional society .

CONCLUSION

The confrontation between scientific naturalism and religion mainly developed out of the incommensurability of their respective approaches. While theories of scientific naturalism claimed to demonstrate man's history and his nature on scientific grounds and by empirical methods, religion depended upon speculation and metaphysical interpretation. At the time religious controversies began to appear in British periodicals, secular teachings and sceptical trends were already prominent among the educated. These trends were either imported into or generated within the country. As an imported doctrine in the 1850's, Positivism was introduced to the British public through ^{the} work of a few intellectuals such as Harriet Martineau, George Eliot, J.S. Mill, G.H. Lewes, and others.

Positivist philosophy adopting the scientific method, worked side by side with the theory of evolution to pull down the metaphysical pillars of traditional concepts. And, though it came into conflict with the pure scientism expounded by men such as T.H. Huxley, both Positivism and Utilitarianism provided scientific naturalism with a climate of reason and rational philosophy. Men such as J.S. Mill with his inductive methods, and Herbert Spencer, arguing for deduction, supported the scientific movement by their philosophic contributions from, as it were, outside the main movement.

But, in fact, Positivism was to form an alternative religion which substituted the worship of humanity for that of God. Positivists believed in a priesthood, spiritual power, and a certain code of morality ensuing from their system of philosophy. In his article: "Huxley and the Positivists",¹ Sydney Eisen points out: "What

1. "Huxley and the Positivists", Sydney Eisen, Victorian Studies (June, 1964), Vol. vii, No.4, pp.337-358.

distinguished Positivists among unbelievers was their claim to a complete system - a philosophy, a religion, a way of life - based on science and calculated to fill the gap left by discredited theology."¹ Some of the Positivist disciples such as Mill and George Eliot rejected the rituals of this doctrine. W.M. Simon in his article entitled: "August Comte's English Disciples", says that: "The men and women who did become disciples ... were attracted to the movement precisely because Positivism offered not only intellectual but also spiritual and emotional nourishment."²

The leading participants in this religion of humanity have been well documented by W.M. Simon who considers Richard Congreve to be the leader of the organised movement after 1857. Congreve's attitude is illustrated in his argument that Positivism was "Catholicism plus Science", the phrase by which he rebutted Huxley's catch-phrase: "Catholicism minus Christianity". Simon relates that E.S. Beesly, J.H. Bridges, and Frederic Harrison, who all were Congreve's pupils at Wadham College, became Positivists in the 1860's; and that a Positivist society was established under Congreve's leadership in 1867, in Chapel Street, London, to practice the rituals of Comtism. Tracing the development of this movement and citing some of its prayers, W.M. Simon remarks that: "Outwardly this movement was manifested in the name "Church of Humanity" given to the rather bleak Chapel Street room, and in the appearance of the paraphernalia of liturgy: an altar, a sort of 'Prayer Book' containing the 'Order of Services' for various occasions, and a separate booklet setting forth in greater detail the ceremonial for the Positivist Sacrament".³ It is worth quoting a piece of a Positivist prayer to see

1. Ibid., P.338.

2. "Auguste Comte's English Disciples", W.M. Simon, Victorian Studies, (December 1964), Vol. VIII, P.162.

3. Ibid., P.166.

how Comte was worshipped: "Great Teacher and Master, August Comte, Revealer of Humanity to all her children, Interpreter of her Past, Prophet of her future, Founder of her Religion, the One, the Universal Religion...; we who meet today mourn thy loss."¹

The Church of Humanity extended its influence to Liverpool and Newcastle where further groups of Positivists sprang up. These churches flourished for a period and then disappeared. The success of Positivism in Newcastle was largely due to Malcolm Quin who was later converted to Roman Catholicism. Simon refers to internal troubles between the priests of this religion, particularly between Congreve, the President, and his three disciples. The reasons for differences of opinion were doctrinal as well as moral. The Pradeau affair² was a blow to Positivist morality and resulted in a dispute between Congreve and the three disciples who separated themselves from the authority of Chapel Street and constituted the Newton Hall Positivists. The Chapel Street Society was dissolved in 1879.

Frederic Harrison who acted as a leader of the Newton Hall group was a brilliant Positivist, a lawyer with a wide reputation, and a first class essayist. The significance of his role lay in his substantial contributions to the well-known periodicals of the time, notably the Fortnightly and The Nineteenth Century. He succeeded in publicising Positivism and in stimulating many intellectuals to participate in debates on various issues. He fought on two fronts, against both Christianity and scientism, as a rule defending Positivism by scientific arguments when the rival was a metaphysician, and by spiritual philosophy when the disputant was a pure scientist or a materialist. His inconclusive conflict with Huxley lasted for a quarter

1. Ibid., P.167. (Quoted from Congreve's Religion of Humanity (1891), pp. 2, 21, 29.

2. Pradeau was a French pianist who came to live in London with an English mistress, leaving his wife in France. He was a Positivist favoured by Congreve.

of a century and both furthered and harmed his cause. Harrison forced Huxley to make judgements on religious and moral issues, although the latter often endeavoured to avoid this. Harrison and Huxley were intimate friends before their quarrels and used to meet each other at the Metaphysical Society which was established in 1869.

Armed with the weapons of science and supported by a considerable fame and reputation, Huxley defended scientism against both Christianity and Positivism. His arguments were distinguished by their militant spirit and destructiveness though his apparent inability to provide constructive alternatives was frequently derided by his critics. Huxley rejected the Positivist claim to scientific ideology because he considered it devoted to an idealised god-humanity which had no basis in reality. However, his adherence to scientism was regarded as proof of atheism and the Positivists were astute enough to take advantage of such a reputation. The conflict between Huxley and Harrison brought disadvantages for both. "It hurt the cause of Positivism", says Sydney Eisen, "it forced Huxley into the uncomfortable position of having to define, analyse, and defend his views on religion and morality."¹

In his Edinburgh address "On the Physical Basis of Life" which appeared in the Fortnightly in 1867, Huxley objected to an article entitled "On the Limits of Physical Inquiry" which was written by the Archbishop of York and published the day before Huxley's address. Huxley declared that the protoplasm, of which he had a specimen to show his audience, was the substance of life on earth. Huxley stressed two points, the existence of a materialistic ground of life (though he reminded his audience that he was not a materialist), and the need to adopt an agnostic

1. Sydney Eisen, Victorian Studies, op. cit., P.340.

attitude as regards the phenomena of life. His attack on Comtism, as epitomised in the memorable phrase that it was "Catholicism minus Christianity",¹ gave the Positivists an opportunity to launch their cause and explain their views on many issues of religion and science. Reactions to Huxley's attack were many: a letter to him from E.S. Beesly, an article entitled: "Mr. Huxley on M. Comte" by Richard Congreve, which appeared in the Fortnightly (April, 1867) and Frederic Harrison's article: "The Positivist Problem" which was published in the Fortnightly of November, 1869. While Huxley concentrated on Comte's lack of scientific knowledge, the Positivists stressed Huxley's lack of Comtist philosophy.

The controversy between Harrison and Huxley in the 1870's was fiery and restless. Each wanted to go beyond his field of experience. Harrison, by his philosophic arguments, wanted to incorporate all scientific inquiry in support of his doctrine, while Huxley, was led beyond science to philosophy and eventually to religion. Perhaps both failed to offer arguments which could be universally accepted. The concept of immortality explained by Harrison in "The Soul and Future Life", mentioned above, contrasted strongly with scientific and traditional concepts. His belief in humanity was a blend of those spiritual and emotional concepts by which Positivism distinguished man from other beings. This system adopted the love of humanity, and suggested a new concept of immortality which was glorified by George Eliot in her famous poem². Comte's sociological studies had convinced him of the important position that the desire for immortality occupied in human nature. Perceiving the power of such a feeling as well as its effect in reinforcing religious beliefs, Frederic Harrison - like his master - stressed the spiritual aspect of man's nature by substituting the imaginary concept of humanity for the

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1. "On the Physical Basis of Life", T.H. Huxley, Fortnightly (1869), P.141 ; S. Eisen, op.cit., pp. 340 - 341 .
 2. " O May I Join The Choir Invisible ", George Eliot, The Legend of Jubal and Other Poems (London and Edinbrugh: William Blackwood & Sons, 1874), pp.240 - 242.

supernatural speculations of theology and traditional philosophy. Perhaps Harrison exerted some influence on the Victorian mind, but this was mainly due to his logic, superb language, and poetic style which seemed to be more successful than his actual thought.

The third conflict between Harrison and Huxley in the 1880's is emblematic of two important attitudes: the agnosticism adopted by many intellectuals such as Leslie Stephen, Darwin, Huxley, and Spencer, and the deep pessimism which seemed to climax so many thinkers' life-long investigations. In his article: "The Future of Agnosticism" which appeared in the Fortnightly of 1889, Harrison predicted no future for the agnostic doctrine which offered no solutions to the important questions of life, though it helped, he said, to maintain Positivism by clearing the way for it. Huxley's retort which appeared in his article: "Agnosticism",¹ pointed to the significance of reason and the claim that every unbeliever was an agnostic of some kind, opposing this to Harrison's assertion that every atheist was a Positivist. Huxley's concept of agnosticism seems somewhat meagre when defined: "neither a religion nor a philosophy, but simply a method", and in Sydney Eisen's words: "Huxley's idea of agnosticism was boiled into vapour by intense heat."² But the rival's antagonism in this round was not intense and, as Sydney Eisen puts it, Huxley himself was in good spirits with his old friend Harrison.

Another controversial debate took place between the two champions in 1892, but it was characterised by trivial arguments and the staleness of its thought. The debate began when Huxley published his Essays on Some Controversial Questions of 1892, in which he included his essay on agnosticism. Reviewing this work, Harrison, in his article

1. "Agnosticism", T.H. Huxley, The Nineteenth Century (1889), Vol. XXV., pp. 169 - 194.

2. Sydney Eisen, op. cit., P.352.

entitled: "Mr. Huxley's Controversies" published in the Fortnightly in 1892, seemed to offer an olive branch to Huxley with one hand, though he dismissed him as a "Rudimentary Positivist" with a wave to the other, a phrase which perhaps made the offer unacceptable. In his article Harrison insisted on having Huxley's views on Creation, Providence, and Immortality. Huxley's reply came in an article: "An Apologetic Irenicon",¹ in which he said that he had already rejected the idea of special creation as given in his essay on the Origin of Species, and that sciences must be understood as referring to a "harmonious order governing eternally continuous progress".² Although, in his reply on the question of Providence, Huxley professed the existence of a rational order, he pointed out that science had nothing to say about Supreme Being. He also rejected the idea of Immortality which was based on reward and punishment in both Christianity and Positivism.

Huxley found no basis for a cosmic morality operating through human communities or through men individually, and he attributed the development of moral codes to man's conscience which differentiated between right and wrong, and to their rejection of acceptance by communities, as predicted by the dictates of the struggle for existence.

Losing all hope of converting Huxley to Positivism, or in defeating him, Harrison showed indifference to agnostics who possessed a despondent outlook on life. While Harrison expected a promising future for Humanity, Huxley's pessimistic calculation prophesied a dark world, perhaps because of his belief in the fierce laws of nature, which appeared to Tennyson as "red in tooth and claw".

Intellectual movements, however, are often judged by their consequences. Positivism in Britain, as it seems, was not designed

1. Fortnightly, (1892), pp. 557 - 571.

2. Ibid., P.567.

for ordinary people, but concentrated upon an intellectual elite so as to cope with the sophisticated arguments of other doctrines. The Positivist movement in England faced many difficulties both internal and external. W.M. Simon gives a good portrait of the internal difficulties of the movement in England. The problematic effect on Positivist morality of the Prodeau affair and Comte's attitude towards his wife's suicide should be self-evident. Meanwhile, Positivism was attacked from outside by both theologians and scientists. Followers of this doctrine constitute a slight minority compared with other camps, though they did add to the total number of unbelievers in England. By the turn of the century, the Positivist movement had lost its leading figures. Congreve died in 1899. Beesly resigned in 1901, Harrison left London in 1905 in order to live in the country and, as Simon rightly points out, the movement had virtually disappeared by the outbreak of the First World War.¹

Darwin's theory of species had revived the old hostility between theology and science. Militant controversies arose when the Darwinist interpretation was brought to bear on what had previously been considered to be exclusively religious issues, such as the origin of man, and his faculties, particularly his mental and moral ones. One of the most important ideas which was inferred from the theory of transmutation was that of the descent of man from the ape. It was difficult for theologians everywhere, as well as for the common people, to accept such a devaluation of man, who was supposed to have been made in the image of God. Clashes and prejudices were unavoidable, since the new concepts were implicitly and explicitly opposed to religious views.

Looking at the classes of people in Britain, one may speculate that the ape hypothesis was hardly credible among the uneducated

1. W.M. Simon, op. cit., P.170.

which constituted the majority of the population, though Huxley attempted to introduce the new ideas to the common people in his Lay Sermons and attained a temporary popular success in his dispute with Wilberforce. The educated class was divided into followers of Christian dogma and evolutionists, but it is difficult to satisfactorily assess the composition and importance of these camps since the affirmation of a belief often tends to be a private affair, conditioned, on occasion, as much by social circumstances as by the relative truth or value of the doctrine. Even amongst the educated it was perhaps only the distinguished intellectuals who guided the debate and were aware of the intricacies of the highly scientific and philosophic questions involved. The question of the teleological interpretation of nature, the nature of scientific analysis itself, and the relationship between scientific concepts and man's morality and ideals were perhaps a little too sophisticated to demand the attention of mere mortals, though they remained aware of the conflict. Alvar Ellegard in his book: Darwin and The General Reader, asserted that Chambers' Vestiges "acted more strongly on the popular mind than The Origin" of Species by appealing to the imagination and tackling the whole universe.¹ Perhaps the Vestiges was more popular than The Origin because it possessed a narrative style and construction, a simple presentation of evolutionary views, and its speculations were more closely allied to those of traditional creeds. In addition, the fact that the author referred from time to time, to God's providence and wisdom may well have added to his appeal. Darwin's work was professional in the sense that it was mainly addressed to geologists, biologists, naturalists, and other professional scientists. Its significance for ordinary people emerged from the implications of his analysis of the complicated questions of life. Its popularity largely arose out of its opposition to traditional views of religion and philosophy. The resulting

1. Alvar Ellegard, Darwin and The General Reader, op. cit., P.333.

campaign by theologians against Darwinism, both in Britain and the Arab world, had a greater effect on the masses than educated circles, though in Britain scientific criticism achieved some modification of Darwin's theory on occasion. Opponents such as Samuel Butler cannot be ignored.

Some points for and against Darwinism should be recalled here. On scientific grounds this doctrine proved that the evolutionary hypothesis was true by showing the similarity in form among animals, including man. Physical and physiological investigations supported the theory. Biological research was in favour of the principles of natural selection, heredity, and the survival of the fittest. Geological strata provided the evolutionary theory with valuable information and evidence. That Darwinism could not give actual instances to prove the theory of transmutation, that it could not change variations into their original species, and that it failed to give satisfactory answers to many problems, such as sterility, were some scientific arguments raved against Darwinism.

On philosophical grounds, Darwinism destroyed the metaphysical explanation of life science, the doctrine which formed the backbone of traditional philosophy and religion. It also affected the idea of special creation by adopting the atom theory already speculated by Epicurus and Lucretius. Although Darwinists apparently admitted that God was the Creator of the original atoms of life, they rejected His interference after this stage. Appreciating Darwinism, Alvar Ellegard remarked: "Thanks to Darwin, the Epicurean and Lucretian picture of a fortuitous concourse of atoms giving rise to the world as we see it was changed from a patently absurd speculation to an eminently plausible hypothesis."¹ The intuitive explanation of the growth of belief and morality played its part against Darwinism which could not offer con-

1. Ibid., P.336.

vincing argument and analysis to account for man's mental and moral faculties. Some intellectuals also found grounds for criticism in what they considered to be the everlong duration of the evolutionary process. In the last quarter of the nineteenth century the debate moved on to examine the validity of the proposed scientific method and the empirical approach itself. Thus the philosophy of science came into being, a natural result perhaps, that testifies to the attempts made by science to fill the metaphysical vacuum that would result upon the decline of religion. We have already seen how Positivism developed as a virtual religion, now purely scientific naturalism, was faced with the same problem of satisfying the desire for a comprehensive interpretation of life. Positivism had declined into compromise, as science entered into the sphere of the religious, a metaphysical interpretation was placed upon the scientific facts.

The work of many naturalists and moralists was similarly conditioned by a spirit of compromise as they attempted to justify the exclusive claims of rationality. The elements of compromise was present in almost every work that related to scientific naturalism. Both English and Arab intellectuals were anxious to bridge the gap between influential tradition and the attractive modernism. Tennyson, in his poem, In Memoriam, strikes a balance between the love of God and the love of Nature. Henry Sidgwick, in his The Methods of Ethics, tries to compromise between intuitionism and utilitarianism. Agnosticism itself, can be viewed, in a sense, as inverted compromise, and even Herbert Spencer, evolutionist par excellence, attempts to compromise between "design" and "chance" in his later writings.

The majority of Christian intellectuals in the Arab world, except Shibli Shumayyil and Salāma Mūsā, viewed scientific naturalism as an interpretation of God's words. The rational interpretation of The Quran was a method of compromise by which the Muslim modernist

attempted to cast the old and the new in a modern mould.

In his book on the reception of the evolutionary theory between 1859 and 1872, Alvar Ellegard asserted that Darwinism won the battle against both theology and ideology, and that secular thought superceded ecclesiastical. But perhaps this is true only on theoretical grounds and within a limited class of educated people who can only be counted in thousands, as his own statistical tables indicate.¹ Besides this, Ellegard presents the case of Darwinism at a time when it was fluctuating between fact and fiction, and his thanks should be given to Huxley, the militant defender of the case, as much as Darwin, the shy and reticent scholar. Moreover, the Copley Medal which was awarded by the Royal Society to Darwin in 1864 came to him through Huxley's efforts.

The retreat of the religious groups before the invading naturalists can be seen in the attempts at compromise between Revelation and science. Attempts at a declaration of belief were made in the 1860's, particularly after the clash between Huxley and the Bishop of Oxford.

1. Professor A.J. Meadows, in his paper on "Science and the General Reader in the 1870s" states that the average circulation of the seven periodicals (per issue) was about 2,000 copies of each title, varying from a high of 18,000 for the Cornhill, to a low of 2,500 of the Fortnightly, and that the space devoted to science in these periodicals was "between 3 - 5 per cent."

In response to this paper and Ellegard's book, I have attempted to collect information about the circulation of scientific periodicals in the Arab world, but unfortunately the difficulties involved have proved insurmountable. To say that the information is not readily accessible would be to considerably underestimate the position. Despite consulting a number of available works, such as Ibrahim 'Abduh's 'Alam as-Sahafa al-'Arabiyya (1944) (The Masters of Arabic Press) and Martin Hartmann's The Arabic Press of Egypt (London, 1899), I have failed to find any statistical information on the circulation of the periodicals. Hartmann's book, however, does list a total of 168 newspapers and periodicals that were in print; thirty one are identified as scientific journals, 18 as political and the rest are described as miscellaneous journals dealing with literature, science, and religion.

A study of these declarations has been made by W.H. Brock and R.M. Macleod in a substantial article entitled: "The Scientists' Declaration: Reflections on Science and Belief in the Wake of ESSAYS AND REVIEWS, 1864-5" which recently appeared in the British Journal for the History of Science.¹ The authors demonstrate the difficulties suffered by the religious authorities who were affected by the scientific inquiry and rational philosophy which manifested itself in works such as Lyell's Evidence of the Antiquity of Man (1863), Renan's Vie de Jésus (1863), and Swinburne's Atlanta in Calydon in 1865. The authors of the article have explained that the Essays and Reviews acted as a spark for the declarations, and that the declarations themselves were designed to support religion against the spread of scientific notions, either by condemning secular writers, as the "Oxford Declaration" did, being directed against the authors of Essays and Reviews in 1864, or to maintain a compromise "between Physical Science and Revealed Religion", as was the case in The Declaration of Students of the Natural and Physical Sciences, published in 1865.

Dr. Brock and Macleod related that in 1864 a group of London chemists delivered an appeal to the religious authorities of Canterbury, demanding convocation and the adoption of natural theology. Commenting on the aims of these chemists, as seen in their declaration, the authors point out that:

Its intention was to draw attention to the nature of conventional 'Test' of belief in the Thirty-nine Articles to which all members of the Church of England and graduates of Oxford and Cambridge Universities were required to subscribe; and to state explicitly a 'Fortieth Article' of religious belief to which all Christian men of science should be asked to subscribe.²

1. "The Scientists' Declaration", W.H. Brock and R.M. Macleod, The British Journal for the History of Science (March, 1976), Vol.IX, Part 1, No. 31, pp. 39 - 66.

2. Ibid., P.41.

The authors wonder how men such as Capel Henry Berger, John Stenhouse, Charles Edward Grove, and Philip Gosse, who acted as protagonists for the 'London Declaration', were able to reconcile their religion and their science. Explaining the hesitancy in the text of this Declaration and criticising its defects, the authors remark that:

The Declaration reveals a sense of fear, both of science and biblical criticism; it also reveals, beneath a mask of apparent reasonableness, a serious confusion of objectives. It makes no distinction between scientific fact and hypothesis, or between experiment, discovery, and verification. Theologically, it fails to distinguish between literal authenticity and literal belief. Finally, it signally fails to define the process of 'elucidating truth', sees no critical standards for men of science, apart from the doubtful goal of bland compromise.

Perhaps there were many students of science, who suffered from such a state of mind, and it seems from such declarations that the decline had penetrated the very citadel of religion as well as its outposts. Such hesitant attitudes and attempts to strike a balance between two approaches different in nature may be considered as weakness, if not two-faced scepticism. Perhaps such declarations of belief may seem very ironic to Muslims since they generally consider that belief is a hidden feeling which relates man to his Creator, and that only God knows whether the words of the believer or the disbeliever are truly faithful or not.

The authors of the article refer to one of the arguments offered in opposition to the process of compromise by Owen Chadwick, who states that "Scientific explanations require a system of uniform naturalistic and fundamentally materialistic notions of causation, independent of metaphysical explanation."² They conclude that the declarations which were originally designed for the defence of scriptural belief resulted in a plethora of attitudes developing among religious scientists: some became agnostics, others remaining religious, and others turned to

1. Ibid., pp. 43 - 44.

2. Ibid., P.60.

atheism. There were also some men, they say, who tried to compromise between belief and science, and others who avoided taking sides in the issue entirely.

Perhaps the influence of the religious authorities was supported by the religious convictions of statesmen like Gladstone, Balfour, and Disraeli. The adherence of the clergy to the literalism of the Bible and the militant attitudes of their intellectuals towards scientific research, worked together to hinder the advancement of science. If this was the situation in Britain, the source of scientific naturalism, what would be the attitude in the Arab world, where ignorance took its lead from the Ottoman rulers whose primary interest was only to reinforce their armies with Arab warriors?

The influence of the Muslim clergy ('Ulama) on the State was more dominant than the clergy in Britain. The 'Ulama conducted the prayers and religious orations by which they mastered the minds of the masses, while their effect on child education appeared in the seminary rooms attached to mosques exactly as the missionary schools were arranged and conducted by the Jesuit and Protestant clergy all over the Arab world. The horizon of knowledge in these seminaries was often confined to the study of holy books, the Quran and the Bible, particularly to their literal concepts. Missionary schools excelled national and State schools by teaching modern languages and a few secular subjects. Muslim institutions gave priority to Arabic language and literature, and neglected philosophy and natural sciences, as subjects leading to heresy. This hatred of philosophy and science imposed by the Muslim clergy during the rule of Omayyads and the Ottomans is pictured in Renan's article "Islam and Science" despite the few meliorating touches added by Afghani, the only philosopher of modern Islam in the Arab world at the time.

Afghani wanted to wake the Arabs from their slumber by offering new interpretations of the Quranic Verses, based on rational philosophy, but the camp of Orthodoxy was so strong that it arranged an imperial prison for him, planned by Abu al-Huda as-Şayyādi and executed by the Sultan ‘Abdul-Hamīd himself. Afghāni's ideas, though, found a fertile soil among Egyptian intellectuals, particularly the Azharites Muhammad ‘Abduh and ‘Ali ‘Abd ar-Rāziq who became pioneers of Islamic modernism after the death of their master in 1897. Although Afghani initiated a philosophic explanation of the Quran, he offered no really substantial contributions to this field. Two of his disciples, Muhammad ‘Abduh and Rashīd Riḍā, began a modern exegesis of the Quran, but it was not completed. Rashīd Riḍā was the editor of al-Manār, the periodical of the modernist Muslim writers in which they exhibited their conflict with Christian writers on the one hand, and with scientific naturalists on the other. The conflict between Christian and Muslim intellectuals focussed on the controversy between Muhammad ‘Abduh and Farah Antun, which resulted in the disappearance of the al-Jāmi‘a review which was edited by Antūn and Antūn's own migration to America.

It is not strange to find that the scholars who attempted a scientific exegesis of the Quran were not the ‘Ulama, but a group of physicians of whom Muḥammad Ibn Ahmad Iskandarāni and Muḥammad Tawfīq Şidqī (1881 - 1920) were distinguished examples. The former published his first work entitled: Kashf al-Asrār an-Nuraniyya al-Kurāniyya (the disclosing of the luminous secrets of the Quran) in 1880, and his second book entitled: Tibyān al-Asrār ar-Rabbāniyya (the demonstration of divine secrets) in 1883.¹ These books give a kind of scientific interpretation for some concepts mentioned in the Quran. The latter became known

1. J.J.G.Jansen, The Interpretation of the Koran in Modern Egypt (Leiden: E.J.Brill, 1974), p. 40.

in literary circles by way of an attack on the Bible in a series of articles which appeared in al-Manār in 1905.¹ His articles were considered so harmful that the Christian community asked the English authorities in Egypt to interfere, and consequently "Dr. Sidki was forbidden to write further articles of that nature."² He also contributed many articles to al-Manār on various themes of natural history. These articles later appeared in two volumes entitled: Durūs fi Sunan al-Kā'ināt (lessons on the laws of creatures), and Muhādarāt Tubbiyya, 'Ilmiyya, Islāmiyya (Medical, Scientific, and Islamic Lectures).³ Such attempts at compromise between religion and science, however, show the influence of scientific naturalism on the interpretation of the Quran. Thanks are not only due to Darwin, Huxley, Wallace, Lyell, Tyndall and others who inaugurated and guided the scientific movement in Britain, but also are due to the Arab writers, both Christian and Muslim, who conveyed modern thought to the Arab world.

In an attempt to compare Arab and English writers who played a part in the scientific movement, one may find something in common in their situations and attitudes. Shibli Shumayyil could, for example, occupy the same place in Arab history as Thomas Huxley in English. He was - like Huxley - a believer in pure science. He was the first writer to introduce scientific naturalism, particularly Darwinism, into the Arab world. His condensed translation of Ludwig Büchner's treatise on Darwinism revealed his philosophic tendencies. Huxley himself tended to the philosophy of science in some of his latest contributions. Shumayyil began as an agnostic, like Huxley, an attitude which appears in his earlier writings, despite his attempts to hide it, though he finally adopted the materialistic doctrine and he became well-known as an

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1. "ad-Din fi Nazar al-'Aql as-Sahih", (Religion in the light of sound reason), M.T. Sidqī, al-Manar (1905), Vol.VIII, pp. 330 - 335; 417 - 427; 495 - 500; 693 - 705; 732 - 737; 737 - 744; 771 - 782, followed by a commentary by the Editor, and later, by a letter of protest against Sidqī's attitude to Darwinism, P.920.
 2. Quoted in Jansen, op. cit., pp. 43 - 44, from C.C. Adams: Islam and Modernism (1968), pp. 239 - 242.
 3. J.J.G.Jansen, op. cit., P.44.

atheist, like Büchner. Shumayyil believed in spontaneous generation as a consequence of his belief that only 'matter' had the power of creation. In short, he went to the very end of the conflicting extremes. He also believed in the laws of perfection and progress which were entertained in the West; and he was optimistic to the end of his life, unlike Huxley who became a pessimist in his later years. Shumayyil's attitude is illustrated in an article entitled: "Burial and Cemeteries":

I fear neither death nor what comes beyond it. I do not care whether I be burnt or buried in the earth; whether a sheikh, a priest, or a rabbi prays for me or not, or even if they all have to supplicate for me the rains of mercy or to beseech the swords of retaliation upon me; or whether they lift me to heaven or push me into hell. (For) I have not the least hope for that and I do not fear anything of the like. All that I fear is "the awakening" of the grave! Therefore I demand to be buried when I am actually dead with no least possibility of coming back to life.

The passage reveals that the writer, like many Victorian agnostics, does not believe in immortality and the religious notions of reward and punishment. All that he fears is a coma-like condition, which might be wrongly considered as death. This view of death shows his obsession with scientific facts. Perhaps the sickness which was an adherent company of the writer has affected his thought and resulted in such a stoic attitude towards life and death. Perhaps his sickness also has protected him against the persecution of the masses and religious authorities, as did blindness for the sceptic poet Abu al-'Ala' al-Ma'arri. Shumayyil quotes this blind poet who says of man:

That which perplexed the world ²
Is an animal made up of matter.

Shumayyil, as a physician who graduated from the Syrian College with a scientific background of physics, chemistry, and physiology, exerted some influence on the readers of the Muqtataf, to which he

1. Shibli Shumayyil, The Philosophy of Evolution and Progress (1910), Vol.II, P.340. The translation is mine.
2. Ibid., P.341.

contributed many articles in addition to those he wrote for his own journal ash-Shifā' (Healing), a purely medical magazine. It is deplorable to find no one specific book wholly assigned to the study of this radical writer, life and work, except a few articles which appeared in the Muqtataf after his death in 1916.

A similar attitude to Shumayyil's provoked a disturbance in Cairo fifteen years after the publication of his book, when the Iraqi poet, Zahawi, published a poem entitled "Tears Speak"¹ in the Ahrām, a leading Egyptian newspaper. In this poem Zahāwī denied the immortality of the soul and stressed the verification through the senses. This declaration by a Muslim poet produced intense excitement in all circles, schools, colleges, and the Azhar University. Reactions were decisive, particularly when a certain shaykh 'Abdul Ḥamīd Quṭayṭ, a professor at the Azhar, demanded the authorities to expel "the heavy guest" from Egypt, in a letter to the Home Secretary in which he says:

The Azhar, the biggest University of Religion, demands you condemn this atheist... for spreading heresies which may tempt simple people who have a settled account of Divine Guidance.²

Zahāwī can be fairly considered as the only evolutionary poet in the Arab world at the time. He was agnostic, like Shumayyil and Huxley. He was engaged in many controversies with religious authorities. In his epic entitled: " Nazaghāt " , he says:

I paused knowing nothing of the truths,³
Have I created God or is He my Creator!

One of his controversies with the religious authorities, for instance, took place when he was an Iraqi representative at the Ottoman Parliament

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1. al-Ahrām, September, 1926, the literal translation of the title is "Tears articulate".
 2. Az-Zahāwī: A Study and Texts, ed. 'Abdul Ḥamid ar-Rashūdi (1966), P.244.
 3. Ibid., P.285.

in 1912.¹ The poet noticed in the military budget a sum of money which was assigned to the reading of al-Bukhāri, a famous *study of Tradition* (Ḥadīth). At a meeting of the Parliament he wanted to know whether the Ottoman warships were sailing by the power of Bukhār (steam), or by al-Bukhāri, the title of the religious book which means "steamy". Such attitudes often resulted either in his exile or imprisonment, or in his resignation from an official position. In the Encyclopaedia of Islam, the orientalist, A. Kratskovski, refers to Zahawi's pessimistic outlook of life by saying that "He was extremely pessimistic, which is not strange regarding his circumstances; but we find also that he had ideas on suicide and this is strange in Arabic literature!"²

Ya'qūb Ṣarrūf's enormous contributions to scientific literature may establish him in the forefront among those who brought scientific naturalism to the Arab world. He provided the Arab reader with the most developed ideas and beliefs of the natural sciences in the West. He conveyed faithfully what was happening in the literary and scientific circles in England at the time. The literature of his periodical al-Muqtataf was, indeed, an anthology of arguments and ideas which were scattered through the Western periodicals of the time. He translated and summarised a good number of articles written by eminent Westerners. No doubt, as a tutor at the Syrian Protestant College, he exerted as great an influence on his students as he did as an editor on the minds of his readers. The literature of natural history was a new exploration of knowledge for the Arabic reader and Ṣarrūf spared no effort to find Arabic moulds for the Western literature of science and philosophy. His work reveals a brilliance in synthesizing the most complex theories of

1. 'Abdul Razzāq al-Hilālī, Az-Zahāwi: Between Revolution and Reticence, (Beirut, 1964), P.16.

2. Quoted in: Az-Zahāwi: A Study and Texts, ed. A.Ḥ. Ar-Rashūdi, op. cit., P.274.

scientific naturalism, and in conveying them in a simple Arabic style, rich in new vocabulary and fresh thought. He publicised scientific naturalism in a way not dissimilar to Harrison's efforts on behalf of Positivism in England. His gifts of writing, elucidating ideas, presenting views, retorting to objectors, and his devotion to the doctrine of natural theology were analogous to those of Harrison, not forgetting their difference in belief. While Sarruf stressed the power of Providence in nearly every article, Harrison clung to his idol of Humanity. Both had no scientific background in pure science or laboratory research, but both wrote about the history and philosophy of sciences. Logical analysis was a shared characteristic of their writings, but Harrison was distinguished from Sarruf by his substantial articles of literary criticism on writers such as Tennyson, Ruskin, J.S. Mill, Matthew Arnold and others.¹ Şarrûf rarely tried to write on literary work, though he compared Milton and Abu al-'Alā' al-Ma'arrī (a classical poet), Spencer and Ibn Khaldūn, Richard the Lion Heart and Saladdin.²

Şarrûf showed moderation and remained consistently polite in his criticism of, or replies to, other writers. His mastery of both English and Arabic made him a first class reviewer of scientific literature, but he was at the same time a dogmatic Christian and an optimist until the end of his life. He, sometimes, failed in his attempts to compromise between science and religion regarding facts and philosophic analysis, though he often succeeded in striking a balance between his thought and his belief. In fact, this writer has not been given his due by Arab critics, perhaps because his sources and his political bias to the West is evidenced by his support of English policy in Egypt where he settled

1. Frederic Harrison, Tennyson, Ruskin, Mill, and other Literary Estimates (1899)

2. al-Muqtataf (1885 - 1886), P.393.

in 1885. Speaking of Şarrūf and Nimr, the editors of al-Muqṭataf and al-Muqaṭṭam, the latter a political newspaper, Albert Hourani remarks that both gave "support to Cromer's policy".¹ Hourani himself, who has achieved a high reputation in exploring the secular thought of Arab writers in the nineteenth century, makes no other mention of Şarrūf except on this occasion in his widely circulated book, but he is aware, as he points out in the preface, that he has been selective in his analysis and that he intends to give the opportunity to other scholars to cover what he deliberately left untouched. Under Hourani's guidance Nadia Farag wrote her doctoral thesis on: al-Muqṭataf 1876 - 1900: A Study of the Influence of Victorian Thought on Modern Arabic Thought (1969) in which she offers an essential study of Şarrūf's life and achievements. Nevertheless, I feel that the writer deserves greater attention.

Arab writers on scientific naturalism, as a whole, lack originality in both the fields of science and philosophy. Those who introduced scientific literature into the Arab World are either interpreters or plagiarists of ideas and arguments which were presented in the Western periodicals and works of the time. There were no contributions to scientific research in the Arab World simply because the Ottoman State itself had no interest in such fields, and the necessary financial aid could not be provided by individuals alone. There is no substantial contribution to laboratory research, though some professors at the Syrian College had certain successes, notably William Van Dyck's communication with Darwin, and his paper which had a bearing on Darwin's last investigations into sexual selection.

1. Albert Hourani, Arabic Thought, op. cit., P.200.

That the Arab writers enjoyed the freedom of presenting secular thought, that they were aware of the latest developments of thought in the West, that Islam was more tolerant than Christianity regarding the new doctrines, all are crucial facts which cannot be overlooked in this conclusion. No doubt the Christian writers played a major role in the introduction of scientific naturalism in Arab countries, particularly Ya'qūb Ṣarrūf and Shibli Shumayyil, but the general reaction of Christian writers to science was either a long and difficult process of compromise between their beliefs and the new theories, or the stubborn rejection of scientific thought. Muslim writers varied in their approaches: some clung to the Orthodoxy and rejected everything scientific or philosophical, others tried to adapt the Western concepts to the interests of their communities, while a few tried to find an alternative outside the Western mainstream.

Having examined a large number of arguments and controversies, one may come to such questions as: have theologians, scientists, and philosophers who participated in the debates come to an agreement on the problems of life in man and on the status of his moral and intellectual faculties? And how far has science or philosophy exerted an influence on morality? Has science or philosophy worked out the principal problems of existence?

The answers to these questions seem to be disappointing in the sense that the problems which were tackled in the second half of the nineteenth century about Providence, creation, immortality, man's origin and nature, and his moral and intellectual properties, still occupy the minds of modern scholars. Science which has proved to be more powerful than philosophy and religion in influencing social development, seems to be less effective than both in imposing its code of morality so that humanity can live in peace and happiness. Contrary to scientists'

ethics and aspirations, statesmen, politicians, and economists decide the morality of science. While science has deeply probed into the world of particles and atoms, politicians have tested its utility and morality over Nagasaki and Hiroshima. While science has realized progress in industry and discoveries, the leaders of progress have looked for new markets and gains beyond the limits of their own countries. No doubt that this progress has initiated imperialism in the world, from which human beings still suffer.

The ethics of theologians and philosophers are no better than those of the scientists, for the morality of heroism adopted by some religious or irreligious educators in the second half of the nineteenth century have been used to justify similar attitudes, imperialist ambitions and imperialistic tendencies. Such ambitions have appeared markedly in public schools and the leading universities of Oxford and Cambridge, where the educators have exercised their influence. Secularists as well as theologians have concentrated on a heroism which seems to be a divine demand for the theologians and a secular necessity for the secularists. Even in the evolutionary ethics the principle of the Survival of the Fittest has been used to glorify strength, superiority, and racism. While the Orthodox and secular systems of morality seem to be in conflict with each other, they cooperate in justifying the invasion of other countries in order to impose their doctrines and ideology over them. Egypt was one of the invaded countries in the late nineteenth century. The citizens of Egypt consisted of the Muslim majority and the Christian minority. The invading power was not alien to the Christian minority simply because Christianity united them. Therefore, they were in favour of the British occupation, at least, in the early years. Perhaps this attitude was the real cause of hostility between the two communities, Christians and Muslims. For the Muslims, the British were

enemies on secular and religious grounds, and it was at this time that the Syrian Christians, who guided scientific naturalism in the Arab World, migrated to Egypt where they found every help from the authorities there. As a consequence of their liberal activities, Muslim thinkers began their attempts at compromise between the new doctrines and the traditional ones, as we have seen in the attempts of philosophic or scientific exegeses of the Quran. The influence of scientific naturalism appeared in the works of poets such as Ahmad Shawqī, the poet Laureate, Hafiz Ibrāhīm, ‘Abdul Rahmān Shukrī, Zaki Abu Shādī, and al-‘Aqqad. The last three and Zahāwi were the pioneers of innovations in Arabic poetry. No doubt these poets and the Christian writers such as Ṣarrūf, Shumayyil, Farah Antūn, Fāris Nimr, and others, constitute the Arab renaissance of the nineteenth and the early twentieth centuries.

The idea of Arab renaissance itself is a subject of considerable discussion among Arab historians. Their historical visions differ according to their religious or ideological interests. For example, Abdalla Laroui, a Moroccan scholar whose book - The Crisis of Arab Intellectual: Traditionism or Historicism? - has recently been translated from French into English, considers that Arab historians and politicians as well, failed to perceive the significance of the evolutionary concept in their history. In his account of the status of the Arabs between 1850 and 1914, the period he calls the "First Nahda"¹ (Renaissance), Laroui finds the Arab intelligentsia split between the past and present, or between "appearance and reality".² He criticises the recent campaign conducted by the authors Kedourie, Keddie, Sylvia Haim, and Hourani against the Salafiyya modernists, Afghāni and ‘Abduh, whose liberalism has been portrayed as a response to imperialism, a campaign which seems

1. Abdalla Laroui, The Crisis of Arab Intellectual: Traditionism or Historicism? translated by Diarmid Cammell (Berkeley, Los Angeles and London: University of California Press, 1977), P.85.
2. Ibid., P.172.

to Laroui to impede the progress of Arabs.¹

A glance at recent literature may throw light on the attitudes towards science today. Reviewing David Holbrook's work on Sylvia Plath, Poetry and Existence, in the Times Literary Supplement, Anne Stevenson says:

The individual is not created in the image of God, nor is he tempted romantically by the evils of sensuality. His existence is far more terrible to contemplate: he must see himself as no more than an evolved biological specimen, a surviving carrier of DNA,² or, as a leading sociologist has put it, DNA's way of more DNA.

What further solution has been offered to the problem of life other than a substitution of the DNA theory for the nineteenth century cellular biology. Perhaps Macfarlane Burnet discloses for us the power and the limits of this DNA theory. In his book entitled Genes, Dreams, and Realities, Burnet, the Nobel Prize winner, points out:

There is present in the nucleus of the fertilized egg cell from which a new human being develops, all the information... that is needed to determine the form and function of the future infant, child, and adult.³

Yet this information, since it does not explain how life begins in these genes, nor tells us about the nature of life itself, cannot justify a metaphysical interpretation. Have scientists succeeded in modifying the human being genetically towards perfection? Macfarlane Burnet himself refers to the limits of chemical research and shows his desperate attitude towards the problems of life and death. He points out:

None of my juniors seems to be worried, as I am, that the contribution of laboratory science to medicine has virtually come to an end... But everything must come to an end and I

1. Ibid., P.172.
2. "A Matter of Life and Death", Anne Stevenson, Times Literary Supplement (1976) (1 November, 1976), P.1412.
3. Macfarlane Burnet, Genes, Dreams, and Realities (Penguin, 1973) P.10.

think that I can already see signs that scientists are recognizing this and modifying their activities accordingly.¹

This is the statement of a scholar whose authority is well-known in the field of genetics. Macfarlane Burnet's attitude is reminiscent of that adopted by Huxley towards the end of his life. A pessimism perhaps conditioned by an awareness of scientific facts. Science, then, seems impotent as regards the metaphysical problems of death, though it has exerted crucial influence on diseases.

Finally it is obvious that science, which is now so close to the everyday life of man, is more influential than philosophy or religion. The superstitious doctrines of the past are no longer entertained by educated people of the present, though we may find some philosophical, psychological, or political doctrines which have been interpreted as in an ultimately superstitious way. Nevertheless, unless science concerns itself with the rigorous limitation of the metaphysical derivations of its findings it is doomed to come into conflict with religion. It remains a question whether science is able to limit itself in this way, for its grander conclusions are continually in conflict with more traditional beliefs, and in this way the predicaments of nineteenth century science are still firmly with us.

1. Ibid., pp. 235; 237.

APPENDIX

A letter from Salama Musa to Wilfrid Scawen Blunt.

23 Pandora Road
West Hamstead
N.W.

6th July 1910

Dear Sir,

Having read your excellent "Secret History", I thank you for your many services to my country, and beg here to make a suggestion:

I had an idea of translating the book, but as Abbas now seems to have his way, (last month an editor was imprisoned because he opposed the idea of making a statue for Ismail), and as I shall not be in Egypt before eighteen months to think of publishing it, I see that the question of translation must be deferred for some time. But I beg you to make a cheaper edition of it for the Egyptians. The government cannot stop its sale because the seller is generally European.

I once saw a brief translation of it in Almoiyad. But it was too brief to be of any use.

If we suppose even that it can be printed at Constantinople there will be many difficulties in sending it to Egypt. Therefore I beg you to republish it in a cheap form for Egypt and the colonies.

Yours truly

S. Moussa

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IV. SELECTED ARTICLES IN SOME ARABIC PERIODICALSA. THAMARAT AL-FUNUN (1875 - 1908)1875

- No. 1, 20th April, the first page of the periodical.
- No. 9, 15th June, "Nabdhā fi al-‘ilm wa'j-Jahl" (A Treatise on Knowledge and Ignorance), unsigned.

1876

- No. 54, 27th April, "at-Ta‘assub" (Fanaticism), not signed.
- No. 84, November, a reply to a letter which appeared in the Parisian Echo in which the writer reports a religious event which took place in Aleppo.

1877

- No. 92, 25th January, "al-Isḥāḥ al-‘Uthmāni", an Arabic translation of a letter published in The Times by an Ottoman scholar who was living in Vienna, P.2.
- No. 92, 25th January, an advertisement concerning the forthcoming translation of Francois Guizot's book: "at-Tuḥfa al-Adabiyya fi Tārīkh ‘ammaddun al-Mamālik al-Awrubbiyya" (Histoire de la civilisation en Europe), by Hanin Khuri, P.4.
- No. 93, 1st February, an Arabic translation of a letter in Turkish addressed by Shayk al-Islam of the Ottoman Empire to a German man of letters, Walmann, who had pleaded with him to be allowed to become a Muslim.
- No. 97, March, Hanin Khuri advertises the translation of Guizot's book into Arabic.

1877 (cont'd)

- No. 134, 22nd November, Khalil Ghānem's letter in which he thanks those Syrians who had elected him as a representative, P.4.

1878

- No. 191, 17th October, "Aḥsana man Ṣafaḥ" (He who forgives, he indeed does well), P.4.

1879

- No. 226, an Arabic translation of a Turkish letter by Mr. Redhouse, an English scholar, addressed to the Governor of Damascus asking him about "The True and False Dawn", pp. 2 - 3.

1880

- No. 269, 23rd February, "Sina'at al-ʿArab", (the industry of the Arabs), pp. 3 - 4.
- No. 298, 20th September, "al-ʿAql" (Reason) by Faḍl Pasha, the Governor of Zafar, P.3.

1881

- No. 317, 7th February, "al-ikhtirāʿ" (Invention) on an astronomical lustre invented by Ilias Ājiyya and a testimony by Cornelius Van Dyck, P.4.
- No. 332, 23rd May, "al-Kutub al-ʿIlmiyya wa Ghayruhā" (Scientific books and others), quoted from al-Waqaʿiʿ al-Misriyya, P.3.
- No. 336, 20th June, a statistical list of schools in Syria, P.1.
- No. 338, 4th July, "Najm abi Dhanab" (meteor) by ʿAbdalla Rasūl Mastī, P.4.
- No. 348, 19th September, "Qawl al-Ḥaq Murr fi Dhawq man Abāh" (Telling the truth is bitter to the taste of its rejector), P.4.

1881 (cont'd)

- No. 350, 3rd October, "al-ʿUḥda al-Muḥammadiyya" (Muhammad's Covenant) by Muhammad ʿAbdul Qādir al-Māzini, quoted from al-Waqāʿiʿ al-Miṣriyya, pp. 2 - 3.
- No. 351, 10th October, "al-Qawl al-Faṣl" (the last word), signed T.J., P.4.

1882

- No. 402, 31st November, "Mudīr aj-Jawāʿib" (the Director of aj-Jawāʿib) a clash between the Thamarāt and aj-Jawāʿib, P.4.
- No. 410, 27th December, the same clash continued, P.3.

1883

- No. 413, 17th January, "ash-Shukr" (Thankfulness) by Shaykh Muhammad Abu'l-Huda as-Sayyādi on the Sultan's achievements, pp. 3 - 4.
- No. 421, 10th March, a communication from Aleppo which gives an account of as-Sayyādi's superstitious powers.
- No. 456, 10th December, "al- Akhlāq wa'l-ʿAwāʿid al-Hasana" (Morals and Good Habits) by I.A., p.2 .
- No. 460, 26th December, "al- Āthar al-Qadīma" (Ancient Ruins), pp. 3 - 4.

1884

- No. 462, 9th January, "aḏ-Zulm" (Tyranny), by I.A., P.2.
- No. 466, 6th February, "al-Ḥikma" (Wisdom), by I.A., pp. 3 - 4.
- Nos. 470 - 472, "al-Aʿmār aw Muddat al-Hayāt" (The Duration of Life) by Tufayli, pp. 3 - 4 .
- No. 477, 23rd April, "al-Ādāb" (Morals) by I.A. (Part I), P.2. The initials I.A. refer to Ibrāhīm Aḥḍab, editor.

1884 (cont'd)

- No. 478, 30th April, "al-Ādāb: Adab al-Maḥabba" (Morals: The Morality of Love) by I.A. (Part II), P.2.
- No. 479, 7th May, "al-Ādāb: Adab al-Mujālasa wa'l-Muḥādara "(Morals: The Morality of Company and Meeting), by I.A. (Part III), P.2.
- No. 480, 14th May, "al-Ādāb: al-'I'āla wa'l-'Ināya " (Morals: Support and Care), by I.A. (Part IV), P.2.
- No. 481, 21st May, "al-Ādāb: Adab al-Kuswa wa'l-Libās" (Morals: The Morality of Clothing and Dressing), by I.A. (Part V), P.2.
- No. 482, 28th May, "al-Ādāb: Adab aṭ-Ṭa'ām wa'sh-Sharāb" (Morals: The Morality of Eating and Drinking), by I.A. (Part VI), P.2.
- No. 483, 5th June, "al-Ādāb: Adab an-Nikāḥ al-Mashru'" (Morals: The Morality of Chastity), by I.A., (Part VII), P.2.
- No. 484, 12th June, "al-Ādāb: Adab at-Tijāra" (Moral: The Morality of Commerce), by I.A. (Part VIII), P.2.
- No. 485, 19th June, "al-Ādāb: Adab as-Sinā'a " (Morals: The Morality of Industry), by I.A. (Part IX), P.3.
- No. 486, 25th June, "al-Ādāb: Adab as-Siyāsa wa'l-Ḥukm" (Morals: The Morality of Politics and Rule), by I.A. (The last article in the series), P.3.

1885

- No. 537, 17th June, "al-'Ilm 'Izz La Yablā Jadīduh" (Science is a Glory whose freshness never wears out), by I.A., P.2.
- No. 538, 24th June, "al-Khilāfah Lijalālat as-Sultan 'Abdul Ḥamīd" (the Caliphate belongs to the Sultan 'Abdul Hamid), pp. 2 - 3. It refers to al-Afghāni's opinion about the matter.

1885 (cont'd)

- No. 541, 22nd July, "Asās at-Taḡaddum al-Haḡīqī wa Ḥifẓuh" (The Basis of true Progress and its Preservation), by the Rev. Harvey Porter, Part I, quoted from the Nashrah al-Uṣbū'īyyah, a weekly magazine, P.3.
- No. 542, 29th July, "Asās at-Taḡaddum al-Haḡīqī wa Ḥifẓuh" (The Basis of True Progress and Its Preservation), Part II, by the Rev. Harvey Porter, pp. 2 - 3.
- No. 549, 23rd September, "Khuyūṭ al-ʿAnkabūt" (Cobwebs), signed M.S.M., P.4.
- No. 553, 21st October, "Husn al-Khulq Qarāba ʿInd al-Ajāneḡ" (Good Conduct is the Kinship of the Aliens), by I.A., pp. 2 - 3.
- No. 557, 18th November, "La Ṭa ʿatali Makhlūq fi Ma ʿsiyyat al-Khāliq" (No Obedience is Due to the Man Advocating Disobedience of God), by I.A., P.2.

1886

- No. 564, 6th January, "al-Intiqād" (Criticism), signed M.ʿ., P.4.
- No. 566, 20th January, "La khayra fi Ladhdha Ta ʿqibu Alama" (There is no good in the pleasure that is followed by pain), by I.A., P.2.
- No. 569, 10th February, a review of Dr. Wortabet's book entitled "al-Hygiene" (Hygiene), by Shaykh Husayn aj-Jisry, Part I, pp. 3 - 4;
No. 570, 17th February, Part II, P.4.
- No. 580, 28th April, "al-ʿizz Taḡta Zilāl as-Suyūf" (Glory is made by Swords), by I.A., P.2.
- No. 583, 19th May, "al-ʿAzīz an-Nafs huwa al-ladhī la Yazīl li'l-Fāqah" (The Self-sufficient Man never Slips to Poverty), by I.A., P.2.
- No. 583, 19th May, "Ikhtirāʿ Waṭanī" (a national invention) by Yūsuf Iliās, P.2.

1886 (cont'd)

- No. 584, 26th May, "Ma Aṣ ʿaba Ḥājat al-Karīm ila 'l-La'īm" (How difficult it is for the Generous to be in need of the Criminal) by I.A., P.2.
- No. 586, 9th June. "La Taʿmal fi as-Sirr Ma Tastaḥi minhu fi 'l-ʿAlaniyah" (Do not do in secret what you are ashamed of in public), by I.A., P.2.
- No. 587, 16th June, "Kutub al-Maghāzi wa Ahādīth al-Qaṣṣāsīn" (Books of Invasions and the Words of the Narrators) by M.ʿ., pp. 1 - 2.
- No. 587, 16th June, "ash-Shabāb Bākurat al-Hayāt" (Youth as the Early Reflection on Life), by I.A., P.2.
- No. 591, 21st July, "Inbiṣātuka ʿAwrah min ʿAwratik ilā tabdū lahū illā li maʿmūn ʿAlayh" (Your Pleasing Manner will Render you Naked if you are not Cautious), by I.A., P.2.
- No. 598, 15th September, "al-Ijtihād fi Ghayr Awānih Sharr min at-Tawāni" (The Premature Attempt is Worse than the Slow Attempt) by I.A., P.2.
- No. 599, 22nd September, "Afdal an-Nās man Kana bi ʿaybihī Baṣīra" (The Most Virtuous Man is He who Knows his own Defects), by I.A., P.2.

1887

- No. 656, 2nd November, "Aḥwāl al-Muslimīn fi Ifrīqiya ʿAn Qissis Masiḥi" (A Christian Bishop on the Circumstances of the Muslims in Africa), P.2.

1888

- No. 668, 2nd January, "Kitāb Jalīl" (A Respectable Letter), Shaykh al-Islam's answer to a certain Schumann of Hanover, Germany, who intended to convert to Islam, translated from Turkish into Arabic, P.2. The letter reveals the basic teachings of Islam as seen by the highest religious authority at the time.

1888 (cont'd)

- No. 668, 2nd January, "al-Islām fi Ingeltrā" (Islam in England), pp. 2 - 3.
- No. 668, 2nd January, "ʿAwd ila kalima fi al-Ittihād al-Waṭanī" (Another Word on the National Unity), by Asʿad Dāgher, P.3.
- No. 671, 15th February, "ʿAwd ila kalima fi al-Ittihād al-waṭani" (Another Word on the National Unity), by Asʿad Dāgher, P.2.
- No. 672, 22nd February, "al-Islām ʿInd al-Ingīz" (Muslims and the British), a translation of an article in the Daily Telegraph (3rd February, 1888), by Mr G.W. Litz, on Islamic schools in India.
- No. 677, "al-Bashīr wa ath-Thamarāt", a clash between the two periodicals, pp. 2 - 3.
- No. 678, 16th April, "Kalimah fi al-Qudwa wa at-Tamthīl" (A Word on Example and Representation), by Asʿad Dāgher, P.2.
- No. 683, 21st May, "al-Islām wa'l-Muslimin" (Islam and Muslims), by the Rev. Isaac Taylor, an Arabic translation of the English text which appeared in the St. James Magazine on the 18th of April, 1888, pp. 2 - 3.
- No. 686, 18th June, "Samāḥat Abu al-Huda Afandi wa Mukātib Jarīdat al-Mail" (The Honourable Abu'l-Huda and the correspondent of the Mail), pp. 2 - 3.
- No. 690, 16th July, "al-Qurān wa 'l-Kutub al-Munazzala " (The Quran and the Revealed Books), by the Rev. Isaac Taylor, an Arabic translation of the English article which appeared in the St. James Magazine, on 13th May, 1888, pp. 2 - 3.
- No. 693, 6th August, "al-Iḥtiyāl li at-Takhalluṣ min dīq al-Ḥāl" (Cunning as a Means of Getting Rid of Want), by Asʿad Dāgher, P.3.
- No. 694, 13th August, "al-Iḥtiyāl" (cont.) by Asʿad Dāgher, P.3.
- No. 701, 8th October, "ar-Riq" (Slavery) an article against the Archbishop of Algeria at the time (Cardinal Lavigne), pp. 2 - 3.

1888 (cont'd)

- No. 702, 15th October, "ar-Riq" (Slavery) or (Islam and Cardinal Lavigerie), P.2.
- No. 703, 22nd October, "Jarīdat al-Bashīr wa aj-Jarā'id" (al-Bashir and the Newspapers), P.1.
- No. 710, 10th December, "Āthār Adabiyya" (Moral Attitudes), by I.A., P.3.
- No. 711, 17th December, "al-Muslimūn fi al-‘Alam" (The Muslims in the World), P.2.
- No. 712, 24th December, "ar-Riq wa Ba‘d al-Ajānib" (On Slavery), P.2.
- No. 713, 31st December, "ar-Riq" (Slavery), a reply to Cardinal Lavigerie by Sadād Bey, son of Jawdat Pasha, Minister of Justice in Istanbul, an Arabic translation of the Turkish letter, pp. 2 - 5.

1889

- No. 716, 21st January, "Kardinal Lavigerie wa ar-Riq" (Cardinal Lavigerie and Slavery), P.2.
- No. 721, 18th February, "ad-Dīn wa'l-Adab wa't-Ta‘āwun" (Religion, Morality, and Co-operation), by Bishāra Shidyāq, quoted from Lisān al-Hāl, P.3.
- No. 722, 25th February, "al-Riq wa'l-Insāniyya" (Slavery and Humanity), translated from the Vicar, P.2.
- No. 731, 29th April, "at-Tamaddun wa'l-Hurriyya" (Civilization and Liberty), by Sa‘id al-Karmī, Part I, pp. 3 - 4; No. 732, 6th May, Part II, pp. 3 - 4.
- No. 735, 27th May, "Tashabbuth Dīnī" (A Religious Adherence), P.2.
- No. 763, 23rd December, "Jarīdat al-Muqattam" (al-muqattam Newspaper), a letter by Şarrūf, Nimr, and Macarius, followed by an article about the Ottoman land and sea forces, P.3.

1889 (cont'd)

- No. 763, 23rd December, "al-‘Ayān la Yahtāj Ila Burhān" (The Eye-witness does Require Proof), P.2.

1890

- No. 791, 7th July, "al-Islām ‘Ind al-Munṣifīn" (Islam as Seen by Just Men), pp. 2 - 3.
- No. 792, 14th July, "Al-Aḥkām wa Aḥwal al-Umam wa 'z-Zamān" (Laws, The Conditions of Nations, and Time), Part I, pp. 1 - 2; No. 793, 21st July, Part II, P.3.
- No. 794, 4th August, "al-Qawl al-Faṣl fi at-Tabarri Min aj-Jahl" (The Last Word on the Denial of Ignorance), by Sa‘id al-Karmī, pp. 2 - 3.
- No. 803, 6th October, "Aḥwal an-Nasturiyyīn" (The Conditions of the Nestorians), P.4.
- Nos. 810, 812, 813, 814, "Adrār ad-Dahriyyīn" (The Abuses of the Naturalists). These articles are fragments from Afghani's book The Refutation of the Materialists.
- No. 815, 29th December, "al-Madaniyya al-Islāmiyya wa Awrubbā" (Islamic Civilisation and Europe), pp. 3 - 4.

1891

- No. 816, 5th January, "al-Madaniyya al-Islāmiyya wa Awrubbā" (Islamic Civilisation and Europe), pp. 2 - 4.
- Nos. 816, 817, 818, 819, 820, 821, 822, (5th January - 16th February) "Adrār ad-Dahriyyīn" (The Abuses of the Naturalist). These articles nearly cover the whole of Afghani's book, the Refutation.

1891 (cont'd)

- No. 822, 16th February, "Dīn al-Islām" (Islam), an Arabic translation of an English article which appeared in The Star (16th December, 1890), pp. 2 - 3.
- No. 832, 27th April, "al-Akhlāq wa'l -'Awā'id"(Morality and Habits), a review of Hanna Kurāni's book, P.2.
- No. 860, 23rd November, "Maṭbū'āt" (Publications), on Jurji Zaydān, P.2.
- No. 865, 28th December, "al-muslimūn fi Liverpool" (The Muslims in Liverpool), P.2.

1892

- No. 898, 3rd October, "al-Ikhwah al-maghrūrūn wa iktishāf Amerika" (The Discovery of America and the Arabs), by Shakīb Arslān, a communication from Paris, pp. 1 - 2.

1893

- Nos. 928, 929, 930, 933, "an-Nayāzīk aw ash-Shuhub al-Munqaddah" (Meteors or the Falling Stars), by As'ad Dāgher.
- No. 932, 5th June, "al-'Ālam al-Islāmī" (Islamic World), a word on an Islamic periodical which appeared in English in Liverpool, edited by Abdalla Quilliam, an English convert to Islam.

1894

- No. 969, 26th February, "Lafz aj-Jalālah" (The Term God), a conflict between the Thamarāt and the Hilāl, Nos. 10, 12, (1893 - 4), P.2.
- Nos. 972, 973, 974, 975, 976, 977, "al-Bashā'er al-Muhammadiyya" (The announcement of Muhammedan Tidings).

1894 (cont'd)

- No. 978, 7th May, "Idāhāt al-Bashā'ir al-Muhammadiyya" (Illustrations of Muhammedan Tidings), by M.M. Mukhtār, P.2.
- No. 979, 14th May, "Idāhāt al-Bashā'ir al-Muhammadiyya" (Illustrations of Muhammedan Tidings), by M.M. Mukhtār of Damascus, pp. 2 - 3.
- No. 979, 14th May, "Mabhath fi' l-Lughah" (A Treatise on Language), by Fadlalla Şarrūf, a lecturer in Arabic Language at the Oriental School of Petersburg, Russia, P.3.
- Nos. 995, 996, 997, 998, 999, (10th September - 8th October) "Wasāyā ash-Shuyūkh l'ish-Shubbān" (Advice from the Old to the Young), by Dr. John Wortabet of the Syrian College.

1895

- No. 1014, 28th January, "aj-Jāmi' al-Azhar" (The Azhar Mosque), pp. 2 - 3.
- No. 1015, 4th February, "Qarār Majlis al-'Ulama' al-A'lām" (The Decision of the Council of the Distinguished Scholars), P.3.
- No. 1046, 23rd September, "ad-Dīn wa's-Siyāsa" (Religion and Politics), by Hasan Husni; quoted from an-Nīl (a periodical), pp. 1 - 2.
- No. 1054, 18th November, "Wafāt" (Death), the periodical Thamarāt reports the death of Cornelius Van Dyck with a brief sketch, pp. 3 - 4.
- No. 1061, Dr. Wortabet and Van Dyck certify that the quality of a certain kind of tea (in tablets) was good, P.3.

1896

- No. 1062, 1st January, "Risālat ad-Dokor Garner", an Arabic translation of a letter published in the New York World about Dr. Garner's investigations on the Apes in Africa, pp. 3 - 4.
- No. 1071, 23rd March, "al-Muqtataf wa'l-Mar'a" (The Muqtataf and Woman), a refutation of an idea adopted by the Muqtataf about women's hair, P.4.

1896 (cont'd)

- No. 1081, 8th June, "aj-Jāmi' al-Azhar" (The Azhar Mosque), P.1.
- No. 1082, 15th June, "aj-Jāmi' al-Azhar" (The Azhar Mosque), pp. 1 - 2.
- No. 1089, 3rd August, "Qānūn aj-Jāmi' al-Azhar" (Regulations of the Azhar), P.3.
- No. 1101, 26th October, "ad-Dawla al-'Aliyya al-'Uthmāniyya" (The High Ottoman State), a communication from Liverpool about the Armenian case, pp. 1 - 2.
- No. 1107, 14th December, "al-Muslimūn fi Liverpool" (Muslims in Liverpool), P.1.
- No. 1109, 28th December, "Muslimū Liverpool" (The Muslims of Liverpool), pp. 3 - 4.

1897

- No. 1159, 13th December, "al-Ittiḥād al-Islāmi" (Pan-Islamism), a name of a periodical in Arabic and French, edited by Eugene Claville, a judge at the mixed courts in Egypt, P.1.

1898

- No. 1181, 23rd May, "al-'Ilm wa Anwā'uh" (Science and Its Kinds), P.6.
- No. 1187, 4th July, "Aqsām an-Nās Biḥasb al-Madhāhib wa'l-'Ulūm" (Groups of People according to Philosophy and the Sciences), pp. 5 - 7.
- No. 1191, 1st August, "Kashf al-Ghitā' 'An al-Atibba' wa'l-Falāsifa al-Qudamā'" (On the Ancient Philosophers and Medical Doctors), by Salīm Madḥat ash-Sham'ā of Damascus, P.5.
- Nos. 1199, 1200, "Tahdhīb al-Akhlāq" (The Adjustment of Morals), unsigned.
- No. 1201, 10th October, "Tahdhīb al-Akhlāq: Fadīlat an-Nafs" (The Adjustment of Morals: the Virtue of Self-control), pp. 5 - 6.
- No. 1208, 28th November, "Tahdhīb al-Akhlāq: Anwa' al-Faḍā'il al-Arba'" (The Adjustment of Morals: the Four Kinds of Virtues), pp. 1 - 2.

1898 (cont'd)

- No. 1209, 5th December, "Tahdhīb al-Akhlāq: al Khuluq" (The Adjustment of Morals: the Temperament), pp. 6 - 7.
- No. 1210, 12th December, "Falsafat at-Tarbiya al-Ḥaqqā" (The Philosophy of True Morality) by Muhammad ʿAbduh, pp. 6 - 7.

1899

- Nos. 1214, 1216, "Fahm al-ʿArab wa Dhakā'uhum" (The Apprehension and Intelligence of the Arabs), by Mahmūd Shikrī al-Ālūsī, pp. 5 - 6.
- No. 1217, 30th January, "Bismark wa'd-Dīn" (Bismarck and Religion), by Muhammad ʿAbduh, pp. 2 - 3.
- No. 1221, 6th March, "al-Istiʿdād al-irthī li'l Maraḍ" (Hereditary Propensity to Diseases) by Salīm Madḥat Shamʿa of Damascus, pp. 3 - 4.
- No. 1226, 10th April, "al-ʿĀdah" (Habit), by Salīm Madḥat Shamʿa, P.3.
- No. 1235, 19th June, "Taṭbīq ad-Diyāna al-Islāmiyya ʿAla an-Nawamīs al-Madaniyya" (The Application of Islam to Civil Laws), by Muhammad Farīd Wajdī, a review of a book of the same title which was written in French and Arabic, P.2.
- No. 1236, 26th June, "Maqām al-ʿAmal wa'j-Jadd fi Nazār al-Islām" (The Place of Labour and Assiduity in Islam), by Muhammad Farīd Wajdī, pp. 2 - 3.
- No. 1241, 29th July, "Ijtimaʿat al-Falāsifa wa Dhakā' Aristatālīs" (The Philosophers' Assemblies and the Intelligence of Aristotle), by Salīm Madḥat Shamʿa of Damascus, pp. 6 - 7.
- No. 1243, 14th May, "Iftiqār aṣ-Ṣināʿa li'l-ʿUlum" (The Reliance of Industry on the Sciences), by Salīm Madḥat Shamʿa, pp. 2 - 3.
- No. 1251, 9th October, "adh-Dhākira" (Memory), by Salīm Madḥat Shamʿa, P.7.

1899 (cont'd)

- No. 1254, 30th October, "'Abdalla Pasha Fikrī", the late Egyptian Minister of Education, P.6, a fictitious conversation between an astronomer and a theologian .
- No. 1256, 13th November, "an-Najm Dhu adh-Dhanab" (The Meteor), by Mustāfa Muhammad al-Falakī, a practitioner of Islamic law, pp. 6 - 7.
- No. 1258, 27th November, "an-Nujūm Dhawāt al-Adhnāb" (Meteors), by Salīm Madḥat Shamʿa, P.3.

1900

- No. 1264, 5th January, "al-Akhlāq ad-Dīniyya wa Ta'thīruhā fi'l-Umam" (Religious Morals and their Effect on Nations), by Ahmad ʿUmar, pp. 2 - 3.
- No. 1268, 12th February, "at-Tamaddun" (Refinement), by Salīm Madḥat Shamʿa, P.3.
- No. 1282, 21st May, "aṣ-Ṣahāfa al-ʿArabiyya wa'd-Doktor Hartmann" (Arabic Press and Dr. Hartmann), a review of Hartmann's book, P.6.
- No. 1293, 6th August, "Ḥaqīqat al-Manṭiq wa Saḥiḥ al-Fikr" (The Truth of Logic and the Soundness of Thought) by Muhammad ʿAbduh, pp. 6 - 7.
- No. 1295, 20th August, "al-ʿIlm wa't-Tamaddun" (Science and Refinement) by Hasan Qatlān of Beirut, pp. 2 - 3.
- No. 1296, 27th August, "an-Nafs" (The Soul), signed ʿ.A., P.7.
- No. 1310, 10th December, "ash-Sharīʿa al-Islāmiyya: Shahādat ʿUlamā' Awrubba" (Islamic Law as viewed by European Scholars), pp. 3 - 4.

1901

- No. 1318, 11th February, "al-ʿĀdah" (Habit) by Salīm Madḥat Shamʿa, pp. 3 - 4.

1901 (cont'd)

- No. 1323, 18th March, "ash-Shu'ūbiyya" (Alienism or non-Arabism), a review of Qāsim Amīn's book, Tahrīr al-Mar'a, (The Emancipation of Women), by 'Abdul Ḥaqq Ḥaqqi al-A'zamī of Baghdad, a traveller in India, P.3.
- No. 1324, 25th March, "Fi Ithbāt Allāh bi'l Barāhīn at-Ṭabī'īyya" (On the Natural Proofs of the Existence of God) by Muhammad Farīd Wajdī, pp. 3 - 4.
- No. 1334, 17th June, "at-Ṭūfan" (The Deluge), a review by Muhammad 'Abduh of Shaykh Bakr at-Ṭamīmī an-Nābilsī's book entitled (at-Ṭūfan), P.2.
- No. 1339, 22nd July, "al-Mar'a Mar'a" (Woman is woman), pp. 3 - 4.
- No. 1339, 22nd July, "Asbāb at-Taraqqī" (Causes of Progress) by Baṣīr, P.4.
- No. 1340, 29th July, "Qīmat al-Ḥayāt" (The Value of Life) by 'A., P.2.
- No. 1340, 29th July, "al-kibar wa't-Tawāḍu'" (Arrogance and Modesty) by (Basir) of Sidon, pp. 3 - 4.
- No. 1341, 8th August, "al-Mar'a al-Muslima" (The Muslim Woman), by M.F. Wajdi, pp. 6 - 7.
- No. 1342, 12th August, "al-'Ulamā' Hudāt al-Umma" (The 'Ulama are the Saviours of the Nation), by Muhammad 'Abduh and Shaykh al-Islam, pp. 1 - 2.
- No. 1342, 12th August, "Naẓra" (A View), a communication about the article entitled: "Asbāb at-Taraqqī" (Causes of Progress), pp. 2 - 3.
- No. 1345, 2nd September, "Intiqād 'Ala Intiqād" (A Critique of a Critique) by (Basir), pp. 6 - 7.
- No. 1345, 2nd September, "Daf'u Waḥm" (The Refutation of a Deluded Claim), pp. 6 - 7.
- No. 1347, 16th September, a reply to Dr. Jessup, the American missionary and the editor of an-Nashra al-Isbū'īyya (The Weekly News), by Yūsuf Jurjus Zakham ar-Rīshāni, pp. 6 - 7.

1901 (cont'd)

- No. 1347, 16th September, "Nazra fi Asbāb at-Traqqi" (A View on the Causes of Progress) by 'Abdalla Mu'adh^hden of Tripoli, P.3.
- No. 1347, 16th September, "al-'Umran" (Civilisation) by Salmān Mṣawba^ʿ of Sidon, P.3.
- No. 1351, 16th August, "Tarikat as-Salaf" (The Legacy of the Ancestors) by Muhammad Kurd 'Ali, pp. 6 - 7.
- No. 1352, 21st October, "al-Madaniyya al-Islāmiyya wa'l-Madaniyya al-Ḥadītha" (Islamic and Modern Civilisation) by Muhammad Farīd Wajdī, pp. 2 - 3.

1902

- No. 1368, 24th February, "al-Qadā' wa'l-Qadar, aw al-Asbab wa'l-Musabbibāt" (Fate and Destiny, or Cause and Effect), by the Grand Qādi of Egypt, a certain Jamāl ed-Din, P.2.
- No. 1411, 29th December, "al-Islām fi 'Asr al-'Ilm" (Islam in the Age of Science) by Muhammad Farīd Wajdī, pp. 2 - 4.

1903

- Nos. 1412 - 1418, 1420, "al-Mustaqbal li'l-Islām" (The Future of Islam) by Muhammad Tawfīq al-Bakrī, the head of a mystic creed in Egypt (seven articles).
- Nos. 1414, 1415, 1420, "Adwār al-Ḥayāt" (The Stages of Life) by Salmān Mṣawba^ʿ.
- No. 1418, 16th February, "al-'Awatif wa 'la'thīruha fi'n-Nafs" (Emotions and their Effect on the Self), quoted from the Mu'ayyid magazine, P.6.
- No. 1425, 13th April, "al-Akhlāq 'Us an-Najāh" (Morality is the Essence of Success), P.4.

1903 (cont'd)

- No. 1434, 15th June, "al-Ḥayāt fi al-kawākib" (Life on the Planets), P.7.
- No. 1440, 27th July, "aj-Jāmi' al-Azhar wa Durusuh: al-'Ulūm al-'Aqliyya" (The Azhar and Rational Sciences), pp. 2 - 3.
- No. 1441, 3rd August, "Iftirāq am Ittifāq" (Separation or Agreement) by H.S. of Homs, pp. 2 - 3.
- No. 1451, 12th October, "al-'Ilm wa't-Ta'ālīm" (Science and Education) by Muhammad 'Abduh, an address delivered in Tunisia, pp. 1 - 2.
- No. 1453, 26th October, "al-'Ilm wa't-Ta'ālīm" (Cont.), by M. 'Abduh, pp. 2 - 3.

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- Nos. 1462, 1463, 1464, 1465, 1466, "an-Naqd wa'n-Nazar fi Madaniyyat al-Bashar" (The Criticism and Evaluation of Human Civilisation) by Salman Mṣawba'.
- Nos. 1462, 1463, 1464, 1465, "al-Lughāt ash-Sharqiyya fi Awrubā" (Oriental Languages in Europe) by Edward Brown of Cambridge.
- No. 1462, 4th January, "Akhlāq wa 'Adāt: Muṭala'a" (Morals and Habits: A Vision), pp. 3 - 4.
- No. 1469, 22nd February, "Tfāwut al-blād fi 'Awā'idihā" (Different Countries, Different Habits), by Muhammad Hāshim al-Kutubī, P.6.
- No. 1471, 14th March, "Tfāwut al-Bilād fi 'Awā'idihā", a reply by an anonymous correspondent (signed Syrian), pp. 3 - 4.
- No. 1476, 18th April, "'Ushshāq al-Ḥaqīqa wa Ṭullāb al-Kamāl" (Lovers of Truth and Students of Perfection), by (F - A) of Damascus, on al-Kutubī's statement, pp. 6 - 7.
- No. 1478, 2nd May, "Dhikrā" (A Memoir), by (R - F) commentary on the Kutubi controversy.

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- No. 1479, 9th May, "ash-Shafaqa" (Mercy) by (ع - A), P.2.
- No. 1479, 9th May, "al-wujdān" (Conscience) by (M.KH) of Damascus, a translation of an article by Rajā'ī Zāda Maḥmūd Akram, pp. 2 - 3.
- No. 1484, 13th June, "al-Mustashriqūn al-Gharbiyyūn" (The Western Orientalists) by M.KH. of Damascus, pp. 2 - 3.
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- No. 1488, 11th July, "al-Madaniyya" (Civilisation) on Tolstoy's views on race, pp. 7 - 8.

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- No. 1502, 6th March, "Ayna Hiya al-Madaniyya?" (Where is civilisation?) by (ع - A), P.6.
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- No. 1555, 26th March, "Kalima li'l-'Āqel" (A word for the Sensible Man) by Dr. J. Wortabet, pp. 5 - 6.

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- Nos. 1601, 1605, 1611, 1613, 1614, "al-Ḥarara al-Markaziyya fi Bāten al-Ard" (The Hot Core of the Earth), signed (F.A.).
- No. 1606, 1st April, "al-'Ulūm at-Ṭabi'iyya fi'l-Islām" (Natural Sciences in Islam), an article on Draper's book, History of the Conflict between Religion and Science, pp. 3 - 4.
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- No. 1650, 17th February, "al-Islām fi awrubba" (The Muslims in Europe), pp. 1 - 2.
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- "as-Sahafah al-'Arabiyyah fi Misr" (Arabic Press of Egypt) a review of Martin Hartmann's book by Jurji Zaydān, pp. 73 - 77.
- "ad-Dīn wa'l-'Ilm wa't-Tamaddun" (Religion, Science, and Civilisation) by Nasīm Fihmī, pp. 676 - 677.

-- "ad-Dīn wa'l-'Ilm" (Religion and Science) a communication in which an anonymous writer rejects the incompatibility of science and religion, P.329.

-- "al-Qaḍā' wa'l-Qadar" (Fate and Destiny) by Jurji Zaydān, pp. 647 - 656.

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-- "Wujūd al-Khāliq" (The Existence of God) by Iskandar al-Khūrī of Cairo, pp. 89 - 95.

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-- "Falsafat at-Tārīkh" (The Philosophy of History), J.S. az-Zahāwi, pp. 1033 - 1035.

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-- "ad-Dīn fi Nazar al-Falāsifa" (Religion as viewed by Philosophers), a commentary on the forthcoming book entitled "Malqā as-Sabīl fi Madhhab an-Nushū' wa'l-Irtiqā'" by Isma‘il Mazhar, pp. 509 - 510.

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-- "al-Ab Lewis Shaykho (1859 - 1927)" (a biographical sketch of Shaykho), the editor, pp. 477 - 479.

-- "al-Akhlāq wa Hal Yumkin Taghyīruha" (The Possibility of Change in Morals), the editor, pp. 545 - 547.

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- "Bayn al-ʿIlm wa'd-Dīn" (Between Science and Religion), Ibrāhīm al-Miṣrī, pp. 1114 - 1119.

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- "al-Ḥayāt Baʿd al-Mawt: Ḥaqīqa aw Khayāl?" (Is the Future Life a Reality or a Vision?), the editor, pp. 314 - 318.
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- "Asrār al-Mādda" (On Life and Immortality), the editor, pp. 1236 - 1240.

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- "Baqiyyat al-Kalām fi an-Nubuwwah" (The Continuation of the 2nd Essay on Prophecy), by M.T. Ṣidqī, pp. 495 - 500.
- "ad-Dīn fi Naẓar al-'Aql aṣ-Ṣaḥiḥ : al-Islām huwa al-Iṣlāḥ al-Akbar" (Religion as Viewed by Sound Reason: Islām as the Best Reform) Essay III, Part 1, by M.T. Ṣidqī, pp. 693 - 705.
- "ar-Raqīq wa Iṣlāḥ Ḥalih wa Taḥrīruh" (The Slaves, the Betterment of their conditions and their liberation) by M.T. Ṣidqī, pp. 732 - 737, Essay III, Part 2.
- "Fi Raḍd Ba'd Shibuhāt" (A Reply to Some Claims), Essay IV, by M.T. Ṣidqī, pp. 737 - 744.
- "ad-Dīn fi Naẓar al-'Aql aṣ-Ṣaḥiḥ: ash-Shubḥa ath-Thālithah - Mariam Ukht Hārūn" (Religion as Viewed by Sound Reason: the Third Claim, Mary, Harun's Sister), by M.T. Ṣidqī, pp. 771 - 782, followed by the editor's comments, pp. 782 - 783.

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- "Abūnā Ādam wa Madhhab Darwin: Min Bab al-Intiqād 'ala al-Manār" (Adam and Darwinism: a Criticism of the Manar), a rejection of M.T. Ṣidqī's account for Darwinism, P.920.

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ABSTRACT: The Comparative Reception of Scientific Naturalism in Great Britain and the Arab World by A.M. Hassani.

The advancement of the natural sciences, particularly geology and biology in the second half of the nineteenth century, affected traditional modes of thought concerning the origin of man, his mental and moral faculties, and his religion.

My purpose in this study is to analyse the reception of this scientific movement in both Great Britain and the Arab World during the period 1860 - 1930 as presented mainly in the contemporary periodicals. It deals with the impact of scientific naturalism on certain religious and moral issues and the reaction, or response, of certain writers who participated in the debate over these issues. This analysis reveals Western influence on the Arab intelligentsia in terms of scientific thought and metaphysical philosophy.

The thesis is divided into two sections. The first is assigned to English writers, and the second to the Arab intellectuals. A historical chapter precedes each section. Two other similar chapters appear in each section: one is assigned to the conflict between science and religion, and the other to the conflict between traditional and new concepts of morality. The concluding chapter provides a comparison between the Western and Eastern writers concerned, and underlines the consequences of the analysis.

I have confined myself, in this study, to an examination of the scientific literature which appeared in Syria (including Lebanon and Palestine), Egypt, and Iraq where the impact of the West first took place.

Among all evolutionary doctrines the principle of progress was the most attractive to the Arab writers, both Christians and Muslims. Although some writers rejected scientific naturalism and others advocated the complete acceptance of Western thought, the majority saw compromise between the old and the new as the key to progress. Muslim modernists suggested a new interpretation of the Quran and a return to the earliest Islamic teachings, while the Protestant writers did so concerning the Biblical doctrines.