THE QUR'AN AND MODERN SCIENCE

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In the Name of Allah The Most Gracious and Most Merciful.

PREFACE

The content of this book constitutes a lecture given by Dr. Maurice Bucaille at the Commonwealth Institute, London on 4th June 1978 under the auspices of the Islamic Council of Europe. Dr. Bucaille is an eminent medical scientist of France and a well-known member of the French Academy of Medicine. The Islamic Academy of Science of Malaysia (ASASI) has decided to publish this lecture in a booklet form for the benefits of our English-educated audience, Muslims and non-Muslims alike.

Various reasons have led us to undertake this publication Firstly, there is an urgent need to increase the volume of Islamic literature on the natural sciences. As it is, there are two few writings on the subject especially those written by scientists themselves. As a result, there is a widespread ignorance of Islamic views on science and the popular misconception of Islam's incompatibility with science is usually based on false inferences from historical and intellectual experiences of other religions and civilisations. We wish to point out that Islam did develop a brilliant scientific tradition within its civilisation and history and it is this Islamic science which greatly influenced the birth and rise of modern science in the West. And Islam has made very significant contribution to Western civilisation in the field of knowledge and in the inculcation of the rational and scientific spirit. In our efforts to combat effectively this widespread ignorance and misconception, the publication of Dr. Bucaille's lecture on the Quran and Modern Science is indeed timely and invaluable and it certainly provides a kind of intellectual refreshment. It will no doubt provoke certain people to reappraise and re-examine some of their current views and notions about Islam and its relation to science when Dr. Bucaille remarked that "it comes as no surprise to learn that Religion and Science have always been considered to be twin sisters by Islam and that today, at a time when science has taken <pii> such great strides, they still continue to be associated, and furthermore certain scientific data are used for the better understanding of the Quranic text. What is more, in a century where, for many, scientific truth has dealt a deathblow to religious belief, it is precisely the discoveries of science that, in an objective examination of the Islamic Revelation, have highlighted the

supernatural character of certain aspects of the Revelation".

Secondly, Dr. Bucaille's lecture contains a special message for today's scientists in particular and modern man in general, who in the name of scientific knowledge and objectivity deny or reject religious and spiritual truths and higher levels of reality than the purely material, without them realising that their denial and rejection of such truths are usually based upon certain lines of thinking that are against the very objectivity they themselves have demanded and appeared to uphold. In an age where scientifically based materialistic atheism seeks to gain control at the expense of the belief in God, to quote Dr Bucaille's own words, he [Dr. Bucaille] belongs to that rarer species of scientists who believe scientific knowledge to be highly conducive to reflection on the existence of God. What is more, with the authority of their own personal experiences, they are affirming the truth that if one remains totally objective in one's study of the Quran, in the light of modern knowledge, then one is forced to see in the Quran a text revealed to a prophet. As Dr. Bucaille beautifully concluded his lecture .." a totally objective examination of it [The Quranic Revelation] in the light of modern knowledge, leads us to recognise the agreement between the two ..It makes us deem it quite unthinkable for a man of Muhammad's time to have been the author of such statements, on account of the state of knowledge in his day. Such considerations are part of what gives the Quranic Revelation its unique place, and forces the impartial scientist to admit his inability to provide an explanation which calls solely upon materialistic reasoning".

And thirdly, in line with the objectives of the Islamic Academy of Science, that is to encourage and promote scientific activities among the Muslims and to stress on the Muslim scientists the need to uphold the Quran as a source of inspiration and guidance in their scientific activities we hope that Dr. Bucaille's exposition will induce other scientists to share his realisation of the fact that the Quran does in fact contain infinitely more precise data which are related to facts discovered by modern science as well as those <piii> which have not, as yet, been confirmed by modern science. As such, it is hoped, the Quran will inspire them to achieve new knowledge .

In conclusion, we wish to thank IMPACT INTERNATIONAL for making available to us the content of Dr Bucaille's lecture.

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7 Zulkaedah 1398
10th October 1978.

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On 9 November 1976, an unusual lecture was given at the French Academy of Medicine. Its title was 'Physiological and Embryological data in the Qur'an. I presented my study on the existence in the Qur'an of certain statements concerning physiology and reproduction. My reason for doing this was that our knowledge of these disciplines is such, that it is impossible to explain how a text produced at the time of the Qur'an could have contained ideas that have only been discovered in modern times.

There is indeed no human work prior to modern times that contains statements which were equally in advance of the state of knowledge at the time they appeared and which might be compared to the Qur'an.

In addition to this, a comparative study of data of a similar kind contained in the Bible (Old Testament and Gospels) seemed desirable. This is how the project was formed of a confrontation between modern knowledge and certain passages in the Holy Scriptures of each monotheistic religion. It resulted in the publication of a book under the title, The Bible, the (Qur'an and Science. The first French edition appeared in May 1976. (Seglers, Paris). English[*] and Arabic editions have now been published.
[1 Published by American Trust Publications, 7216 S, Madison Ave., Indianapolis, Ind. 46227, USA.]

It comes as no surprise to learn that Religion and Science have always been considered to be twin sisters by Islam and that today, at a time when science has taken such great strides, they still continue to be associated, and furthermore certain scientific data are used for the better understanding of the Qur'anic text. What is more, in a century where, for many, scientific truth has dealt a deathblow to religious belief, it is precisely the discoveries of science that, in an objective examination of the Islamic Revelation, have highlighted the supernatural character of certain aspects of the Revelation.

When all is said and done, generally speaking, scientific knowledge would seem, in spite of what people may say, to be highly conducive to reflection on the existence of God. <p2>

Once we begin to ask ourselves in an unbiased or unprejudiced way about the metaphysical lessons to be derived from some of today's knowledge, (for example our knowledge of the infinitely small or the problem of life), we indeed discover many reasons for thinking along these lines. When we think about the remarkable organisation presiding over the birth and maintenance of life, it surely becomes clear that the likelihood of it being the result of chance gets less and less, as our knowledge and progress in this field expand. Certain concepts must appear to be increasingly unacceptable; for example, the one put forward by the French winner of the Nobel prize for Medicine who tried to ge; people to admit that living matter was self-created as the result of fortuitous circumstances under the effect of certain outside influences using simple

chemical elements as their base. From this it is claimed that living organisms came into being, leading to the remarkable complex called man. To me, it would seem that the scientific progress made in understanding the fantastic complexity of higher beings provides strong arguments in favour of the opposite theory: in other words, the existence of an extraordinarily methodical organization presiding over the remarkable arrangement of the phenomena of life.

In many parts of the Book, the Qur'an leads, in simple terms, to this kind of general reflection. But it also contains infinitely more precise data which are directly related to facts discovered by modern science: these are what exercise a magnetic attraction for today's scientists.

For many centuries, man was unable to study them, because he did not possess sufficient scientific means. It is only today that numerous verses of the Qur'an dealing with natural phenomena have become fully comprehensible. I should even go so far as to say that, in the 20th century, with its compartmentalization of ever-increasing knowledge, it is not always easy for the average scientist to understand everything he reads in the Qur'an on such subjects, without having recourse to specialized research. This means that to understand all such verses of the Qur'an one is today required to have an absolutely encyclopaedic knowledge, by which I mean, one which embraces very many disciplines.

I use the word 'science' to mean knowledge which has been soundly established. It does not include the theories which, for a time, help to explain a phenomenon or a series of phenomena, only to be abandoned later on in favour of explanations which have <p3> become more plausible thanks to scientific progress. I basically only intend to deal with comparisons between statements in the Qur'an and knowledge which is not likely to be subject to further discussion. Wherever I introduce scientific facts which are not yet 100% established, I shall, of course, make this quite clear.

There are also some very rare examples of statements in the Qur'an which have not, as yet, been confirmed by modern science: I shall refer to these by pointing out that all the evidence leads scientists to regard them as being highly probable. An example of this is the statement in the Qur'an that life is of aquatic origin; and another is that somewhere in the Universe there are earths similar to our own.

These scientific considerations should not, however, make us forget that the Qur'an remains a religious book par excellence and that it cannot, of course, be expected to have a 'scientific' purpose per se. Whenever man is invited to reflect upon the works of creation and the numerous natural phenomena he can observe, the obvious intention, in using such examples, is to stress Divine Omnipotence. The fact that, in these reflections, we can find allusions to data connected with scientific knowledge is surely another of God's gifts whose value must shine out in an age where scientifically based materialistic atheism seeks to gain control at the expense of the belief in God.

Throughout my research I have constantly tried to remain totally objective. I believe I have succeeded in approaching the study of the Qur'an with the same objectivity that a doctor has when he opens a file on a patient: In other words, by carefully confronting all the symptoms he can find to arrive at a diagnosis. I must admit that it was certainly not a faith in Islam that first guided my steps, but simple research for the truth. This is how I see it today. It was mainly fact which, by the time I had finished my study, had led me to see in the Qur'an a text revealed to a prophet.

We shall examine statements in the Qur'an which appear today merely to record scientific truth, but which men in former times were only able to grasp the apparent meaning of. How is it possible to imagine that, were there any subsequent alterations to the texts, these obscure passages scattered throughout the text of the Qur'an were able to escape human manipulation? The slightest alteration to the text would automatically have destroyed the remarkable coherence which is characteristic of them, and prevented us from establishing their conformity with modern knowledge. The presence of these statements spread throughout the Qur'an <p4> looks to the impartial observer like an obvious hallmark of authenticity.

The Qur'an is a preaching which was made known to man in the course of a Revelation which lasted roughly twenty years. It spanned two periods of equal length on either side of the Hegira. In view of this, it was natural for reflections having a scientific aspect to be scattered throughout the Book. In the case of a study such as the one we have made, we had to regroup them according to subject, collecting them sura by sura.

How should they be classified? I could not find any indications in the Qur'an suggesting any particular classification. So I have decided to present them according to my own personal one.

It would seem to me, that the first subject to be dealt with is the Creation. Here it is possible to compare the verses referring to this topic with the general ideas prevalent today on the formation of the Universe. Next, I have divided up verses under the following general headings: Astronomy, the Earth, the Animal and Vegetable Kingdoms, Man, and Human Reproduction in particular; the latter is a subject which, in the Qur'an, is alloted a very important place. To these general headings it is possible to add sub-headings.

Furthermore, I thought it useful to make a comparison between Qur'anic and Biblical narrations from the point of view of modern knowledge. This has been done in the case of such subjects as the Creation, the Flood and the Exodus.

Let us first examine the Creation as described in the Qur'an.

An extremely important general idea emerges: this is its dissimilarity with the Biblical narration. This idea contradicts the parallels which are often, and wrongly, drawn by western authors to underline solely the resemblances between the two texts.

When talking of the Creation, as of other subjects, there is a strong tendency

in the West to claim that Muhammad only copied the general outlines of the Bible. It is indeed possible to compare the six days of the Creation as described in the Bible, plus an extra day of rest on God's sabbath, with this verse from sura Al A'raf

[Verse rendered in Arabic not reproducible in ASCII.] <p5>
Your Lord is Allah Who created the heavens and the earth in six days.

We must point out straight away that modern commentators stress the interpretation of ayyam, one translation of which iS 'days', as meaning 'long periods' or 'ages' rather than periods of twenty-four hours.
What to me appears to be of fundamental importance is that, in contrast to the narration contained in the Bible, the Qur'an does not lay down a sequence for the Creation of the Earth and Heavens. It refers both to the Heavens before the Earth and the Earth before the Heavens, when it talks of the Creation in general, as in this verse of the sura Taha (20:4).

[Verse rendered in Arabic not reproducible in ASCII.]
(God) who created the earth and the high heavens.

In fact, the notion to be derived from the Qur'an is one of a concomitance in the celestial and terrestrial evolutions. There are also absolutely fundamental data concerning the existence of an initial gaseous mass (dukhan) which is unique and whose elements, although at first fused together (ratq) subsequently became separated (fatq). This notion is expressed in the sura Fussilat (41:11).

[Verse rendered in Arabic not reproducible in ASCII.]
God turned to Heaven when it was smoke.

And the same is expressed in the sura Al Anbiya' (21:30).

Do not the Unbelievers see that the heavens and the earth were joined together, then We clove them asunder? <p6>

The separation process resulted in the formation of multiple worlds, a notion which crops up dozens of times in the Qur'an once it has formed the first verse in the sura Al Fatiha (1:1).

[Verse rendered in Arabic not reproducible in ASCII.]
Praise be to God, the Lord of the Worlds.

All this is in perfect agreement with modern ideas on the existence of primary nebula and the process of secondary separation of the elements that had formed the initial unique mass. This separation resulted in the formation of galaxies and then, when these divided, of stars from which the planets were to be born.

Reference is also made in the Qur'an to an intermediary Creation between the Heavens and the Earth, as in the sura Al Furqan (25:59).

[Verse rendered in Arabic not reproducible in ASCII.]
God is the one. Who created the heavens, the earth and what is between them.

It would seem that this intermediary Creation corresponds to the modern discovery of bridges of matter which are present outside organised astronomical systems

This survey certainly shows us how modern data and statements in the Qur'an agree on a large number of points. We have come a long way from the Biblical text with its successive phases that are totally unacceptable; especially the one placing the Creation of the Earth (on the 3rd day) before that of the Heavens (on the 4th day), when it is a known fact that our planet comes from its own star, the Sun. In such circumstances, how can we imagine that a man who drew his inspiration from the Bible could have <p7> been the author of the Qur'an, and, of his own accord, have corrected the Biblical text to arrive at a general concept concerning the formation of the Universe, when this concept was not to be formed until centuries after his death?

Let us now turn to the subject of Astronomy.

Whenever I describe the details the Qur'an contains on certain points of astronomy to westerners, it is unusual for someone not to reply that there is nothing special in this, considering the Arabs made important discoveries in this field long before the Europeans.

This is, in fact, a singularly mistaken idea resulting from an ignorance of history. In the first place, science was developed in Arabian countries at a time that was considerably after the Qur'anic Revelation had occurred; in the second, the scientific knowledge prevalent at the highpoint of Islamic civilization would not have made it possible for a human being to have written statements on the Heavens comparable to those in the Qur'an.

Here again, the subject is so wide that I can only provide an outline of it.

Whereas the Bible talks of the Sun and the Moon as two luminaries differing in size, the Qur'an distinguishes between them by the use of different epithets: light (nur) for the Moon, torch (siraj) for the Sun. The first is an inert body which reflects light, the second a celestial formation in a state of permanent combustion, and a source of light and heat.

The word 'star' (najm) is accompanied by another qualifying it which indicates that it burns and consumes itself as it pierces through the shadows of the night: it is the word thakib.

In the Qur'an, the kawkab definitely seems to mean the planets which are celestial formations that reflect and do not produce light like the Sun.

Today it is known how the celestial organisation is balanced by the position of stars in a defined orbit and the interplay of gravitational forces related to their mass and speed of movement, each with its own motion. But isn't this what the Qur'an describes, in terms which have only become comprehensible in our own day, when it mentions the foundation of this balance in the sura Al Anbiya ' (21:33). ot reproducible in ASCII.] <p8>

[Verse rendered in Arabic not reproducible in ASCII.]

[God is] the One Who created the night, the day, the sun and the moon. Each one is travelling in an orbit with its own motion.

The Arabic word which expresses this movement is a verb sabaha (yasbahun in the text); it carries with it the idea of a motion which comes from any moving body, be it the movement of one's legs as one runs on the ground, or the action of swimming in water. In the case of a celestial body, one is forced to translate it in the original sense, that is, 'to travel with one's own motion'.

The description of the sequence of day and night would, in itself, be rather commonplace were it not for the fact that, in the Qur'an, it is expressed in terms that today are highly significant. This is because it uses the verb kawwara in the sura Al Zuma (39:5) to describe the way the night 'winds' or 'coils' itself about the day and the day about the night, just as, in the original meaning of the verb, a turban is wound around the head. This is a totally valid comparison; yet at the time the Qur'an was revealed, the astronomical data necessary to draw it were unknown.

The evolution of the Heavens and the notion of a settled place for the Sun are also described. They are in agreement with highly detailed modern ideas. The Qur'an also seems to have alluded to the expansion of the Universe.
There is also the conquest of space. This has been undertaken thanks to remarkable technological progress and has resulted in man's journey to the Moon. But this surely springs to mind when we read the sura Al Rahman (55 :33).

[Verse rendered in Arabic not reproducible in ASCII.]
O assembly of jinns and men, if you can penetrate regions of the heavens and the earth, then penetrate them! You will not penetrate them save with [our] Power. <p9>

This power comes from the All-Mighty, and the subject of the whole sura is an invitation to recognize God's Beneficence to man. Let us now return to Earth.

Let us examine, for example, this verse in the sura Al Zumar (39:21)

[Verse rendered in Arabic not reproducible in ASCII.]
Hast thou not seen that God sent water down from the sky and led it through sources into the ground? Then He caused sown fields of different colours to grow.

Such notions seem quite natural to us today, but we should not forget that they were not prevalent long ago. It was not until the sixteenth century, with Bernard Palissy, that we gained the first coherent description of the water cycle. Prior to this, people talked about the theory whereby the water of the oceans, under the effect of winds, were thrust towards the interior of the continents. They then returned to the oceans via the great abyss, which, since Plato's time, has been called the Tartarus. In the seventeenth century, a great thinker such as Descartes believed in it, and even in the nineteenth century there was still talk of Aristotle's theory, according to which water was condensed in cool mountain caverns and formed underground lakes that fed springs. Today, we know that it is the infiltration of rainwater that is

responsible for this. If one compares the facts of modern hydrology with the data to be found in numerous verses of the Qur'an on this subject, one cannot fail to notice the remarkable degree of agreement between the two.

In geology, a fact of recently acquired knowledge is the phenomenon of folding, which was to form the mountain ranges. The same is true of the Earth's crust, which is like a solid shell on which we can live, while the deeper layers are hot and fluid, and thus inhospitable to any form of life. It is also known that the stability of the mountains is linked to the phenomenon of folding, for <p10> it was the folds that were to provide foundations for the reliefs that constituted the mountains.

Let us now compare modern ideas with one verse among many in the Qur'an that deals with this subject. It is taken from the sura Al Naba ' (78:6-7).

[Verses in Arabic not reproducible in ASCII.]
Have We not made the earth an expanse and the mountains stakes?

The stakes (awtad), which are driven into the ground like those used to anchor a tent, are the deep foundations of geological folds.

Here, as in the case of other topics, the objective observer cannot fail to notice the absence of any contradiction with modern knowledge.

But more than anything else, I was struck, at first, by statements in the Qur'an dealing with living things, both in the animal and vegetable kingdoms, especially with regard to reproduction.

I must once again stress the fact, that it is only since modern times, that scientific progress has made the content of many such verses more comprehensible to us. There are also other verses which are more easily understandable, but which conceal a biological meaning that is highly significant. This is the case of the sura Al Anbiya', a part of which has already been quoted:

[Verses in Arabic not reproducible in ASCII.]
Do not the unbelievers see that the heavens and the earth were joined together, then We clove them asunder and We got every living thing out of the water . Will they then not believe: (21:30)

This is an affirmation of the modern idea that the origin of life is aquatic.

Progress in botany at the time of Muhammad was in no country advanced enough for it to be established as a rule that plants <p11> have both male and female parts. Nevertheless, we may read the following in the sura Taha (20:53).

[Verses in Arabic not reproducible in ASCII.]
(God is the One Who) sent water down from the sky and thereby We brought forth pairs of plants each separate from the other.

Today, we know that fruit comes from plants that have sexual characteristics (even when it comes from unfertilized flowers, like bananas). In the sura Al Ra'd (13: 3) we read:

[Verses in Arabic not reproducible in ASCII.]
Of all fruits [God] placed [on the earth] two of a pair.

Reflections on reproduction in the animal kingdom were linked to those on human reproduction. We shall examine them presently.

In the field of physiology, there is one verse which, to me, appears extremely significant: one thousand years before the discovery of the circulation of the blood, and roughly thirteen centuries before it was known what happened in the intestine to ensure that the organs were nourished by the process of digestive absorption, a verse in the Qur'an describes the source of the constituents of milk, in conformity with these notions.

To understand this verse, we have to know that chemical reactions occur in the intestine and that, from there, substances extracted from food pass into the bloodstream via a complex system, sometimes by way of the liver, depending on their <p12> chemical nature. The blood transports them to all the organs of the body, among which are the milk-producing mammary glands.

Without entering into detail, let us just say that, basically, there is the arrival of certain substances from the contents of the intestines into the vessels of the intestinal wall itself, and the transportation of these substances by the bloodstream.

This concept must be fully appreciated, if we are to understand this verse in the Qur'an Al Nahl (16:66).

[Verse rendered in Arabic not reproducible in ASCII.]
Verily, in cattle there is a lesson for you. We give you to drink of what is inside their bodies, coming from a conjunction between the contents of the intestines and the blood, a milk pure and pleasant for those who drink it.

In the Qur'an the subject of human reproduction leads to a multitude of statements which constitute a challenge to the embryologist seeking a human explanation to them. It was only after the birth of the basic sciences which were to contribute to our knowledge of biology, and especially after the invention of the microscope, that man was able to understand such statements. It was impossible for a man living in the early seventh century to have expressed such ideas. There is nothing to indicate that, at this time, men in the Middle East and Arabia knew anything more about this subject than men living in Europe or anywhere else. Today, there are many Muslims with a thorough knowledge of the Qur'an and natural sciences who have clearly recognised the comparisons to be made between the verses of the Qur'an dealing with reproduction and human knowledge. I shall always remember the comment of an eighteen year old Muslim, brought up in Saudi Arabia, replying to a reference to the question of reproduction as described in the Qur'an. Pointing to it, he said, 'But this book provides us with all the essential information on the subject. When I was at school they used the Qur'an to explain to me how <p13> children were born; your books on sex-education are a bit late on the

scene!'

It is on this point in particular, that a comparison between the beliefs current at the time of the Qur'an, that were full of superstitions and myths, and the contents of the Qur'an and modern data, leaves us amazed at the degree of concordance between the latter and the absence of any reference in the Qur'an to the mistaken ideas that were prevalent at the time.

Let us now isolate, from all these verses, precise ideas concerning the complexity of the fertilizing liquid and the fact that an infinitely small quantity is required to ensure fertilization, its 'quintessence'--if I may so translate the Arabic word 'sulala'.

The implantation of the egg in the female genital organ is perfectly described in several verses by the word 'Alaq, which is also the title of the sura in which it appears:

[Verse rendered in Arabic not reproducible in ASCII.]
God fashioned man from something which clings (96:2).

I do not think there is any reasonable translation of the word 'Alaq other than to use its original sense.

The evolution of the embryo inside the maternal uterus is only briefly described, but the description is accurate, because the simple words referring to it correspond exactly to fundamental stages in its growth. This is what we read in a verse from the sura Al Mu'minun (23:14).

[Verse rendered in Arabic not reproducible in ASCII.]
'We fashioned the thing which clings into a chewed lump of flesh <p14> and We fashioned the chewed flesh into bones and We clothed the bones with intact flesh'.

The term 'chewed flesh' (mudga) corresponds exactly to the appearance of the embryo at a certain stage in its development.

It is known that the bones develop inside this mass and that they are then covered with muscle. This is the meaning of the term 'intact flesh' (lahm).

The embryo passes through a stage where some parts are in proportion and others out of proportion with what is later to become the individual. Maybe this is the meaning of a verse in the sura Al Hajj (22:5) which reads as follows:

[Verse rendered in Arabic not reproducible in ASCII.]
We fashioned [man] into something which clings into a lump of flesh in proportion and out of proportion.

Next, we have a reference to the appearance of the senses and viscerae in the sura Al Sajda (32:9).

[Verse rendered in Arabic not reproducible in ASCII.]
[God] appointed for you the senses of hearing, sight and the viscerae.

Nothing here contradicts today's data and, furthermore, none of the mistaken ideas of the time has crept into the Qur'an.

We have now come to the last subject; it is the confrontation, with modern knowledge, of passages in the Qur'an that are also referred to in the Bible.

We have already caught a glimpse of the problem when talking <p15> of the Creation. Earlier I stressed the perfect agreement between modern knowledge and verses in the Qur'an, and pointed out that the Biblical narration contained statements that were scientifically unacceptable. This is hardly surprising when we know that the great narration of the Creation contained in the Bible was the work of priests living in the sixth century BC, hence the term 'Sacerdotal' narration. This seems mainly to have been conceived as the theme of a preaching designed to exhort people to observe the sabbath. The narration was constructed with a definite end in view, and, as Father de Vaux (a former head of the Biblical School of Jerusalem) has noted, this end was essentially legalist in character.

The Bible also contains a much shorter and older narration of the Creation, the so-called 'Yahvist' version, which approaches the subject from a completely different angle.

They are both taken from Genesis, the first book of the Pentateuch or Taurah: Moses is supposed to have been its author, but the text we have today has, as we know, undergone many changes.

The Sacerdotal narration of Genesis is famous for its whimsical genealogies, that go back to Adam, and which nobody takes very seriously. Nevertheless, such Gospel authors as Matthew and Luke have reproduced them, more or less verbatim, in their genealogies of Jesus. Matthew goes back as far as Abraham, and Luke to Adam. All these writings, are scientifically unacceptable, because they set a figure on the age of the world and the time man appeared on Earth, which is most definitely out of keeping with what has today been established with certainty. The Qur'an, on the other hand, is completely free of data of this kind.

Earlier on, we also noted how perfectly the Qur'an agrees with general, modern ideas on the formation of the Universe, whereas the Biblical narration stands in contradiction to them; the allegory of the primordial waters is hardly tenable, nor is the creation of light on the first day, before the creation of the stars which produce this light; the existence of an evening and a morning before the creation of the Earth; the creation of the Earth on the third day before that of the Sun on the fourth; the appearance of beasts of the Earth on the sixth day after the appearance of the birds of the air on the fifth day, although the former came first: all these statements are the result of beliefs prevalent at the time this text was written and do not have any other meaning. <p16>

As for the genealogies contained in the Bible, which form the basis of the Jewish calendar and assert that today the world is 5738 years old, these are

hardly admissible either. Our solar system may well be 4 1/2 billion years old, and the appearance on Earth of man, as we know him today, may be estimated in tens of thousands of years, if not more.

It is absolutely essential, therefore, to note that the Qur'an does not contain any such indications as to date, and that these are specific to the Biblical text.

There is a second, highly significant, subject of comparison between the Bible and the Qur'an: this is the Flood. In actual fact, the Biblical narration is a fusion of two descriptions in which events are related differently. The Bible speaks of a universal flood and places it roughly 300 years before Abraham. According to what we know of Abraham, this would imply a universal cataclysm around the twenty-first or twenty-second century BC. This would be untenable, in view of historical data.

How can we accept the idea that, in the twenty-first or twenty-second century BC, all civilization was wiped off the face of the Earth by a universal cataclysm, when we know that this period corresponds, for example, to the one preceding the Middle Kingdom in Egypt, at roughly the date of the first Intermediary period before the eleventh dynasty?

None of the preceding statements is acceptable according to modern knowledge.

From this point of view, we can measure the enormous gap separating the Bible from the Qur'an.

In contrast to the Bible, the narration contained in the Qur'an deals with a cataclysm that is limited to Noah's people. They were punished for their sins, as were other ungodly peoples. The Qur'an does not locate the cataclysm in time. There are absolutely no historical or archaeological objections to the narration in the Qur'an.

A third point of comparison, which is extremely significant, is the story of Moses, and especially the Exodus from Egypt of the Hebrews enslaved to the Pharaoh. Here I can only give a highly compressed account of the study of this subject that appears in my book. I have noted the points where the Biblical and Qur'anic narrations agree and disagree, and, for some details, I have found points where the two texts complement each other in a very useful way. Among the many hypotheses concerning the position <p17> occupied by the Exodus in the history of the pharaohs, I have concluded that the most likely is the theory which makes Merneptah, Rameses II's successor, the pharaoh of the Exodus. The confrontation of the data contained in the Scriptures with archaeological evidence speaks strongly in favour of this hypotheses. I am pleased to be able to say that the Biblical narration contributes weighty evidence leading us to situate Moses in the history of the pharaohs: Moses was born during the reign of Rameses 11. Biblical data are therefore of considerable historical value in the story of Moses.

The medical study of the mummy of Merneptah has yielded further useful information on the possible causes of this pharaoh's death.

The fact that we today possess the mummy of this pharaoh, which, to be exact, was discovered in 1898, is one of paramount importance. The Bible records that it was engulfed in the sea, but does not give any details as to what subsequently became of the body. The Qur'an, in the sura Yunus, notes that the body of the pharaoh, who was to be damned, would be saved from the waters.

[Verse rendered in Arabic not reproducible in ASCII.]
This day We save thee in thy body so that thou mayest be a Sign
for those who come after thee (10:92).

A medical examination of this mummy, has, moreover, shown that the body could not have stayed in the water for long, because it does not show signs of deterioration due to prolonged submersion. Here again, the confrontation of the narration in the Qur'an with the data provided by modern knowledge does not give rise to the slightest objection from a scientific point of view.

The Old Testament constitutes a collection of literary works produced in the course of roughly nine centuries and which has undergone many alternations. The part played by man in the actual composition of the texts of the Bible is quite considerable.

The Qur'anic Revelation has a history which is radically <p18> different. From the moment it was first communicated to man, it was learnt by heart and written down during Muhammad's own lifetime. It is thanks to this that the Qur'an does not pose anY problem of authenticity.

A totally objective examination of it, in the light of modern knowledge, leads us to recognise the agreement between the two, as has already been noted on repeated occasions. It makes us deem it quite unthinkable for a man of Muhammad's time to have been the author of such statements, on account of the state of knowledge in his day. Such considerations are part of what gives the Qur'anic Revelation its unique place, and forces the impartial scientist to admit his inability to provide an explanation which calls solely upon materialistic reasoning. <p19>

THE ISLAMIC ACADEMY OF SCIENCE (ASASI)

Its objectives are:

- To revive Islamic scientific tradition and study of natural sciences based on Quranic principles.

- To popularise and uphold Islamic conceptions and philosophy of science and Islamic ethical values in scientific research.

- To encourage and promote scientific activities among the Muslims and to stress on the Muslim scientists the need to uphold The Quran as a source of inspiration. and guidance in their scientific activities.

- To revive and restore the Arabic language, as the sacred language of the Quran, to its original and rightful place and role as a scientific language of the Muslim world.

- To cooperate with other organisations, local as well as international, to ensure that science and technology are not misused to the peril and destruction of mankind.

- To provide a common platform for the Muslim scientists to play their collective and constructive role and to pool their resources towards achieving scientific and technological progress in Muslim society.

- To represent Muslim scientists in Malaysia at international forums, seminars and conferences on issues pertaining to science and technology.

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