

# The Qur'ān and Modern Science

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## The Qur'ān and modern science

There is 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'ān.

There is, perhaps, no better illustration of the close links between Islam and science than the Prophet's Ḥadīth:

“Seek after science, even in China”\* which is a veritable invitation to man to enrich his knowledge.

More significant, if it is possible, is the famous Ḥadīth:

“The scholars' ink is more precious than the martyrs' blood”\*

It comes as no surprise, therefore, 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'ānic 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

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, about or

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the problem of life) we indeed discover many reasons for thinking along these lines. When we think about the remarkable organization 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.

To me it would seem that the scientific progress made in understanding the fantastic complexity of higher beings provides strong arguments in favor 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'ān 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'ān dealing with natural phenomena have become comprehensible; a reading of old commentaries, however knowledgeable their authors may have been in their day, bears solemn witness to a total inability to grasp the meaning of such verses. 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'ān on such subjects, without having recourse to specialized research. This means that to understand all such verses of the Qur'ān, one is today required to have an absolutely encyclopedic knowledge, by which I mean one which embraces very many disciplines.

The Qur'ān is a religious book which has no scientific purpose. Whenever man is invited to reflect upon the works of Creation and numerous natural phenomena, the obvious intention is to stress Divine Omnipotence. In these reflections we find allusions to data connected with firmly established scientific knowledge: these findings clearly appeared only in modern times. When one compares religious teachings with material data, one must carefully take account of the meaning of the words of the Qur'ānic

text. There is a suggestive example in a verse of Sūrat al-'A'rāf about the Creation. Its common translation is:

“Your Lord is God who created the Heavens and the Earth in six days”.<sup>1</sup>

Nevertheless we note that the Arabic word “‘ayyām”, the usual translation of which is “days”, appears in the Qur’ān with the meaning of very long periods of time<sup>2</sup>. It is not equivalent to the precise meaning of the word “day” as it appears in the Bible, where the days of the week are considered, the seventh one being the “sabbath” when God is described as having rested. The Qur’ān does not mention rest at all.

The major notion to be derived from the Qur’ān concerning the Creation is a concomitance in the celestial and terrestrial evolutions, with the fundamental data about the existence of an initial unique gaseous mass whose elements, although at first fused together, subsequently became separated. These notions are expressed in Sūrat Fuṣṣilat:

“Then (God) turned to the Heaven when it was smoke”<sup>3</sup>  
And in Sūrat al-'Anbiyā’:

“Do not the unbelievers see that the Heavens and Earth were joined together, then We clove them asunder?”<sup>4</sup>

The separation process resulted in the formation of multiple worlds, a notion which crops up a dozen times in the Qur’ān. For example in Sūrat al-Fātiḥah:

“Praise be to God, the Lord of the Worlds.”<sup>5</sup>

All this is in perfect agreement with modern ideas on the existence of a 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 were divided, of stars from which the planets were to be born. All that is in perfect agreement with modern notions concerning the history of the Universe.

Moreover, reference is made in the Qur’ān to an intermediary creation between the Heavens and the Earth, as in Sūrat al-Furqān:

“He who created the Heavens, the Earth and all that is between them . . .”<sup>6</sup>

This intermediary creation corresponds to the modern discoveries of bridges of matter which have been demonstrated as present outside organized astronomical systems.

How can we imagine that a man, much more than a

thousand years ago, could have been the author of such reflections which proceed from a general concept of the Universe, when this concept was not formed until centuries after his death?

In the Qur’ān, we find notions about the nature and the movement of celestial formations. For example, the sun and the moon, which were previously defined in the Bible as “luminaries”, are distinguished by the use of different epithets: light (nūr) for the moon, torch (sirāj) for the sun. Allāh says:

“And made the moon a light in their midst and made the sun as a glorious lamp.”<sup>7</sup>

Presently we know that the first (moon) is an inert body which reflects light, the second (sun) is a celestial formation in a state of permanent combustion and a source of light and heat. The word star (“najm” in the Qur’ān) is accompanied by a qualifying description, which indicates that it burns and consumes itself as it pierces through the shadows of the night; it is described as “thāqib”, “the star of piercing brightness”<sup>8</sup>.

The word “kawkab” definitely seems to mean the planets which are celestial formations that reflect and do not produce light, unlike the sun.

Today we know that the celestial organization is balanced by the position of the stars in defined orbits and the interplay of gravitational forces related to their mass and speed of movement, each within its own specifically defined orbit and their own self-motion, as the foundations of this balance, are precisely what the Qur’an describes in Surat al Anbiya’:

“(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.”<sup>9</sup>

This movement is expressed by the verb “sabaḥa” (yasbaḥūn in the text), the primitive meaning of the word carrying the idea of a motion which comes from any moving body, be it the movement of one’s legs as one runs, or the action of swimming in water.

The sequence of day and night is expressed in terms that today are highly significant from a scientific point of view. By using the verb “kawwara”, made into a sphere (ball), Sūrat al-Zumur describes the way the night “winds” or “coils” itself about the day, just as, in the original meaning of the verb, a turban is wound around the head: a totally valid comparison.

“...the night overlays the day and the day overlays the night...”<sup>10</sup>

The evolution of the Heavens and the notion of a

settled place for the sun are also mentioned in the Qur'ān

“and the sun runs his course . . .”<sup>11</sup>

Such statements are in agreement with well established modern ideas.

The Qur'ān seems to have alluded to the expansion of the Universe. “And the earth we have spread out . . .”<sup>12</sup>

There is also the conquest of Space. This has recently been undertaken thanks to remarkable technological progress and has resulted in man's journey to the moon. And this surely springs to mind when we read Sūrat al-Raḥmān.

“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 Power.”<sup>13</sup>

This power comes from Almighty. The subject of the whole Surah is an invitation to recognize God's beneficence to man.

Let us now return to the Earth, and, among many statements, let us quote verses concerning the mountains.

Modern geology has taught us the phenomenon of folding which formed the mountain ranges. The stability of mountains is linked to this phenomenon, since the folds were to provide foundations for the reliefs that constituted the mountains. What do we find about them in Sūrat al-Naba'?

“Have We not made the earth an expanse and the mountains stakes?”<sup>14</sup>

The stakes, “*awtad*”, which are put into the ground like those used to anchor a tent, are the deep foundations of geological folds.

The same harmony with modern knowledge is noticed in the case of the numerous reflections in the Qur'ān concerning the water cycle in nature. This is a topic which is very well known today and the verses of the Qur'ān referring to it seem to us to express ideas that are now totally self-evident. But if we consider the ideas prevalent at the time of the Revelation, they appear to have been clearly marked more by myth and philosophical speculation than by facts, such as those observed and studied nowadays. Similarly, on other topics as well, such ancient and wrong notions never appear in the Qur'ān.

Let us consider, for example, this verse in Sūrat al-Zumur:

“Hast thou not seen that God sent water down from the sky and led it through sources into the ground?

Then He causes sown fields of different colors to grow.”<sup>15</sup>

We must compare one of the aspects of the water cycle to which this verse alludes to, and other details about it, given in the Qur'ān, with the ideas prevalent long ago. The first coherent description of the water cycle in nature dates back to the sixteenth Century with Bernard Palissy. Prior to this, people talked about the theory whereby the waters of the oceans, under the effect of winds, were thrust in to the interior of the continents. They then returned to the oceans via the great abyss, the ‘Tartarus’ of Plato. In the seventeenth century, Descartes still believed in this theory, and even in the nineteenth century it was theorised that water was condensed in cool mountain caverns forming underground lakes that fed springs. Today we know that the infiltration of rainwater is responsible for this.

But more than anything else, I have been impressed by statements in the Qur'ān dealing with living beings; the animal and vegetable kingdoms, especially with regard to the origin of life, the origin of man and reproduction.

It is only since modern times that scientific progress has made the content of many such verses comprehensible to us. The ancient commentators presented them according to their apparent meaning which was of utmost importance, since it evokes Divine Omnipotence. But they could not understand their real meaning, lacking essential scientific knowledge which is necessary to understand them. Even today numerous translations and commentaries of the Qur'ān, made by men with only a literary background, give a mistaken view of their real meaning. Only a scientist is able to give an explanation.

The biological allusions in the Qur'ān are highly significant. Such is the case of a verse in Sūrat al-'Anbiyā':

“ . . . and We got every living thing out of the water. Will they then not believe?”<sup>16</sup>

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

At the time of the Prophet, in no country was progress in botany advanced enough for it to be established as a rule that plants have both male and female parts. Nevertheless, we can read the following in Sūrat Tāḥā:

“(God is the One who) sent water down from the sky and thereby We brought forth elements of couples of plants, each separate from the other.”<sup>17</sup>

In Sūrat al-Ra'd we read the following:

“Of all fruits (God) placed (on the earth) (they are)



two elements of a pair”<sup>18</sup>

In another Surāh, Sūrah Yāsīn, there is a clear allusion to the existence of components of couples in plants, as well as in the human beings whom the verse is referring to:

“Glory to Him who created the components of couples of every kind; of what the earth produces, as well as their own (human) kind, and (other) things of which they have no knowledge”<sup>19</sup>

In the field of physiology, there is a verse which appears to be extremely significant. To understand it, we have to know that chemical reactions occur in the intestine and that substances extracted from food inside the intestine pass into the blood stream, and that the blood transports these substances to all organs of the body, among which are the milk-producing mammary glands. That is precisely what is said in this verse of Sūrat al-Naḥl:

“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 intestine and the blood, a milk that is pure and pleasant for those who drink it.”<sup>20</sup>

The Qur’ānic Revelation considerably enriched man with data about himself, but its teachings have been clearly and completely understood only in modern times.

As a medical doctor, particularly attracted to the Natural Sciences and Physiology, I must confess that, when I read the Qur’ān in the original text, i.e. in Arabic, for the first time, these data concerning Man were those which impressed me the most. This is the reason why, as soon as I finished my first study “The Bible, the Qur’ān and Science”, I seized a favourable opportunity to deliver a lecture before the French Academy of Medicine with a special reference to human reproduction in the Qur’ān.

In order to carry out a valid comparison, one must remember that a host of superstitions and myths about this topic existed in the old days, and I must emphasize the absence of any reference in the Qur’ān to any of the mistaken ideas prevalent at the time of its communication to Man.

Let us mention that several verses evoke the complexity of the male fertilizing liquid and the fact that an infinitely small quantity of this liquid (expressed by the word “nutfah”) is required to ensure fertilization. It is also expressed by “quintessence”, if I may so translate the Arabic word “sulālah”.

The implantation of the fertilized egg in the female genital organ (uterus) is perfectly described in several verses by the word “‘laq”, as in Sūrat al-‘Alaq:

“(God) fashioned man from something which clings.”<sup>21</sup>

I do not think that there is any accurate translation of the word “‘alaq” other than to use its primitive meaning, i.e. to cling. To speak here of an “adherence” or a “blood clot” is a mistake: they are both derivative meanings quite out of place in this context.

The evolution of the embryo inside the maternal uterus is the subject of reflections whose simple words correspond exactly to fundamental stages in its growth, as it appears in this verse of Sūrat al-Mu’minīn:

“We fashioned the thing which clings into a chewed lump of flesh and We fashioned the chewed flesh into bones and We clothed the bones with intact flesh.”<sup>22</sup>

Thus an initial aspect of embryonic development is evoked, and there after the muscles covering the bones are found.

We know that the embryo passes through a stage when some of its parts are out of proportion with what is later to become the individual. Sūrat al-Ḥajj seems to allude to this:

“We fashioned you . . . into something which clings, into a lump of flesh in proportion and out of proportion . . .”<sup>23</sup>

In Sūrat al-Sajdah there is a reference to the senses and the viscera:

“ . . . He gave you the faculties of hearing and sight, and of feeling (and understanding) . . .”<sup>24</sup>

All these quotations are in harmony with what was to be discovered many centuries later.<sup>25</sup>

In view of the state of knowledge in Prophet Muḥammad’s day, it is inconceivable that many of the statements in the Qur’ān which are connected with science could have been the work of a man. It is, therefore, perfectly legitimate not only to regard the Qur’ān as the expression of a Revelation, but also to award it a very special place on account of the guarantee of authenticity it provides and the presence in it of reflections which, when studied today, appear as a challenge to human explanation.

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\*The Reference Section was added to the speech by the editor.