

Lesson Fifteen: The Relationship of the Qur'an to Modern Science Part II

Three, the Qur'an describes as follows the factor that keeps each of the heavenly bodies on its appointed course:

"God it is Who raised up the heavenly bodies to invisible pillars and then took repose on the throne. He has subjected the sun and the moon to you, and each of them continues to rotate for a fixed time. Thus God regulates all the affairs of the universe and He explains in detail His signs, so that you may believe with certainty in the Day of Resurrection and the meeting with your Lord." (13:2)

We know that before the time of Newton, that great scientific personality, no one was aware of the force of gravity. Although Newton made many discoveries in different branches of science, he is world-famous above all for the discovery of gravity. His achievement has been described as follows: "Newton proved that the falling of objects to earth, the rotation of the moon and Venus, the motions of the planets, and other instances of attraction are all subject to a single law, the law of universal gravity." ¹

One of the most difficult problems Newton encountered was how to prove that the gravitational force exerted by a globular body is the same as it would be if we were to regard the whole of the body as concentrated in its center. As long as this remained unproven, the theory of universal gravitation would represent a kind of inspiration, not based on precise calculations or mathematical proofs.

In the verse quoted above, the fixing of the heavenly bodies in space and their rotation in a fixed course are attributed to a factor designated as "invisible pillars." Are these unseen pillars, which prevent the planets from colliding with each other or falling, anything other than the mysterious and invisible force of universal gravity, a law to which the Creator of the universe has subjected all of the heavenly bodies?

Four, in conveying this scientific truth, the Qur'an has used an expression that is comprehensible for the men of all ages. The Eighth Imam, upon whom be peace, spoke as follows to one of his companions

concerning this Qur'anic expression: "Did God not say in the Qur'an, 'without a pillar that you may see'?"

The companion answered, 'Yes,' whereupon the Imam added, "In that case there is a pillar but it cannot be seen." [2](#)

In the course of refuting the materialist view that the human being is destined to utter annihilation, the Qur'an describes the evolutionary movement of the universe saying,

"Do the deniers not look at the heavens above them and see how We have placed them on a firm foundation, adorned them with the stars and made them immune to all flaws? Were We tired by their first creation (so that We might experience difficulty in creating them anew)? They (the unbelievers) are themselves clothed every instant in a new garment of creation."(50:6, 7, 15)

In other words, those who because of their shortsightedness and narrowness of vision imagined the world to be stagnant and stationary are in error, because they are themselves in a state of constant motion, together with the entire universe. The motion of the human being is connected to the general motion of the universe, and after death, too, his spiritual motion will continue, through the appearance of the Promised Day and the fulfillment of the Divine promise; his motion will never be cut short by death.

In expounding this precise scientific truth, the Qur'an does not restrict itself to the dry philosophical aspects of the matter. By entrusting the discussion of the matter to the Prophet, a person who had never studied, who had grown up in a spiritually dark environment with no philosophical tradition, the Qur'an simultaneously puts forward a truth that is of vital significance to the human being. That truth is the immortality of the spirit, the existence of resurrection and judgment, with all that that implies for the responsibilities of the human being while still alive.

The Qur'an also refers to the internal motion of the earth when it says:

"You look at the mountains and imagine them to be solid and stable. But they are engaged in inward motion and growth, just like the clouds. This inward motion is of God's creation and making: He has fashioned all things in a correct way, and He is well aware of your conduct and deeds."(27:88)

This verse calls attention to the inward dynamic motion of mountains. It says, in effect: Although you imagine the mountains to be solid and without inward movement and growth, this is not the case. The mountains that seem stagnant and stationary to you are inwardly growing and changing, just like the clouds the motion of which is visible to you. The firm structure and development of all things are ensured by that same motion, the law of motion which is of God's creation and making. It prevails over all the particles and phenomena of nature, and it ensures their order and stability.

The choice of this particular wording in the Qur'an goes back, no doubt, to the fact that mountains are a symbol of bulkiness and stability, and it enables the verse to lay particular stress on the ability of the

Creator to do all things.

Five, not more than three centuries have passed since Galileo presented to the world of science the theory of the motion of the earth, in a clear fashion and accompanied by adequate proof. In an age not too far removed from us, when geocentricity and the immobility of the earth were regarded as indubitable scientific principles, his theory met with a wave of furious opposition.

By contrast, in the dark atmosphere of the Age of Ignorance, the Qur'an had already referred to certain aspects of the earth's motion and the mysterious qualities of mountains. This was an exposition of complex scientific truths, taking place already in that age. Thus the Qur'an says:

"Have We not made the earth as a cradle and the mountains like pegs?"(78:6-7)

"God has placed mountains on the earth to prevent its uneven motion."(31: 10)

The Qur'an compares the earth to a cradle because a cradle is a place of rest that is engaged in motion. In another verse, a different comparison is offered:

"I have created the earth for you like a tamed camel that with its gentle and smooth motion does not vex its rider."(67: 15)

The Qur'an referred to the motion of the earth at a time when the Ptolemaic theory of geocentricity and the immobility of the earth had been ruling for centuries over the minds of the learned. It was the heavenly book of Islam that refuted that fantastic view of the world, almost a thousand years before Galileo.

In one of the verses just quoted, the mountains have been subtly and delicately compared to pegs that hold the earth in place and prevent it from becoming scattered. This is because the crust of the earth is covered with a soft layer of soil and sand, and were the earth to be deprived of firm and heavy mountains, it would undoubtedly lose its stability because of the pull exerted by the moon. It would fall prey to convulsion and shaking, and destructive tides would overwhelm the globe and destroy it.

The mountains serve as highly resistant pegs that play an essential role in preserving the earth from dissolution and destruction. The slight trembling and convulsions that sometimes occur are not on a scale to deprive human life of all tranquility and stability.

Furthermore, the massive bulk of great mountains is able to neutralize and control, to a considerable extent, the powerful waves of molten materials and buried gases that emanate from within the earth. Were the mountains not to rear up their heads over our globe, the surface of the earth would be in constant ferment because of the pressure of molten substances, and its whole nature would change.

Therefore, bearing in mind that mountains are like pegs implanted in the earth, we realize that our tranquil and undisturbed existence on the globe is ensured precisely by the mountains.

The Qur'an similarly alludes to the earth being globular in shape, in the following verse:

"I swear by the Lord of the easts and the wests. "(70:40)

It is obvious that a multiplicity of easts and wests points at which the sun rises and sets. Every point of the globe is, at some moment, the east for a certain group of people, and the west for another group of people.

Do truths such as these not serve to make us better acquainted with the profound truths this heavenly book contains?

Six, the Qur'an describes the factors which give rise to milk in animals in a way that is entirely compatible with the data of modern science. This is what God's book has to say:

"There is in truth for you a lesson in your animals and flocks. We give you to drink a pure milk derived from that which is contained in their bodies, from the merging of what is held in their intestines with blood. The drinking of that is then made easy for those who drink it. "(16:66)

Dr. Bucaille writes in his book: "From a scientific point of view, physiological notions must be called upon to grasp the meaning of this verse. The substances that ensure the general nutrition of the body come from chemical transformations which occur along the length of the digestive tract. These substances come from the contents of the intestine.

On arrival in the intestine at the appropriate stage of chemical transformation, they pass through its wall and towards the systemic circulation. This passage is effected in two ways: either directly, by what are called the 'lymphatic vessels', or indirectly, by the portal circulation. This conducts them first to the liver, where they undergo alterations, and from here they then emerge to join the systemic circulation. In this way everything passes through the bloodstream.

The constituents of the milk are secreted by the mammary glands. These are nourished, as it were, by the product of food digestion brought to them via the bloodstream. Blood therefore plays the role of collector and conductor of what has been extracted from food, and it brings nutrition to the mammary glands, the producers of milk, as it does to any other organ.

"Here the initial process which sets everything else in motion is the bringing together of the contents of the intestine and blood at the level of the intestinal wall itself. This very precise concept is the result of the discoveries made in the chemistry and physiology of the digestive system. It was totally unknown at the time of the Prophet Muhammad and has been understood only in recent times. The discovery of the circulation of the blood, was made by Harvey roughly ten centuries after the Qur'anic Revelation.

"I consider that the existence in the Qur'an of the verse referring to these concepts can have no human explanation on account of the period in which they were formulated."

Seven, it is only recently that researchers have come aware of insemination in plants and learned that every living being comes into existence as the result of the merging of a male and female cell.

Before the invention of the microscope, which gave man access to the world of atoms and enabled him to study microscopic beings, no one was aware of the action and reaction among male and female cells, certainly not in the Age of Ignorance, and indeed not until the codification of classical botany.

The numerous experiments and investigations by scientists in this field have proven that reproduction is impossible without insemination, except in certain plants where reproduction takes place by way of the division of cells.

The first person to analyze this scientific fact in a clear and straightforward fashion was the well-known Swedish scientist, Charles Leine (1707–1787).

Scientific information shows that reproduction among plants generally takes place through insemination with microscopic particles, and the agents of insemination are insects, flies, bees and so forth, together with the most effective and widespread agent of all – the wind, which lifts up nearly weightless particles and scatters them in the air.

In verses that are totally free of ambiguity, the Noble Qur'an sets forth clearly the principle of gender in the vegetable world, together with the existence of male and female cells in plants, something which was completely unknown until quite recently. It says, with the utmost eloquence:

"and fruit of every kind He made in pairs, two and two" (13:3)

"We sent down water from the heavens, and made to grow thereby pairs of different species of plants."(20:53)

"Pure and transcendent is the God Who created all contingent things in pairs – plants, human beings, and other forms of creation unknown to you."(36:36)

After setting forth the principle of two genders in the human being, the animals and the plant world, the Qur'an enlarges the scope of the principle to the degree of embracing all parts of existence. It is a general rule and law to which nothing that can be called existent forms an exception. The Qur'an says:

"We have created all things their pair, in order that you may remember God." (51:49)

Given the profound knowledge at the human being's disposal in the present age, he has come to realize that all substances in the world can be reduced, in the final analysis, to their smallest structural unit, the atom. This infinitely small unit itself comprises a duality: that of positive and negative electricity.

Although these two forces are identical with respect to their existential nature, one of them carries a positive electrical load and the other, a negative one. It is this opposition, that attracts them to each

other.

Attraction toward the opposite pole is inherent in both of them, and once the mutual attraction is exerted, a third entity comes into being – a force which is neutral in its electrical load.

It is very remarkable that the pairing of all things should have been mentioned in the Qur'an, which was, after all, revealed in an environment dominated by ignorance. The attraction that exists between two bodies each bearing a different kind of electric load makes entirely appropriate the use of the word "pair" for it is entirely similar to the attraction between the two opposite genders.

"Pair" was an extremely effective way of describing this scientific reality, given the limited thoughts of men at the time and even later, for it is not until recently that clear and definite information about the physical nature of this matter became available.

So if we generalize the phenomenon of the pair to include the inner structure of atoms, we may conclude that the material structure of the world is indeed based on pairing, and that nothing in the material universe is exempt from the operation of this comprehensive principle.

Paul Ruybruck, an English scholar, says: "Each particle of matter is confronted by an opposing particle, as was proven in 1955. Using an atom breaker, physicists were able to discover counter-protons, counter-neutrons and counter-matters. They became convinced that the structure of the world of counter matter corresponds exactly to that of the world of matter, and that the two always accompany each other." [3](#)

As Max Planck, another twentieth century scientist, puts it: "Every material body is compounded of electrons and protons." [4](#)

One of the findings of the natural and chemical sciences, proved by laboratory experiments, is that the roots of plants increase the volume of the earth. When water penetrates into bubbles inside the earth, the air that has accumulated there is driven further inside the earth, so that the depths of the earth begin to seethe in agitation.

When rainfall penetrates the depths of the earth, the roots of plants begin to move and advance through the soil. It is obvious that numerous smaller and more delicate roots branch forth from the original roots, moving out in every direction. For example, the capillary roots of maize, each one square centimeter thick, may reach a total of 4200.

Scientists are of the opinion that roots derive 95% of their needs from the air and only 5% from the soil. Hence the amount of space occupied in the earth by roots is considerably expanded in its volume, so that the earth as a whole swells and becomes more capacious as a result of the growth of roots within it.

Let us look now at verse 5 of Surah Hajj in the Noble Qur'an:

"Look at the earth: first it is dry and devoid of vegetation, then We send rain down upon it, and it begins to stir and to swell and all kinds of beautiful plants start growing in it. (22:5)

This forms another example of the agreement of the Qur'an with modern science.

Eight, the Qur'an also mentions the role and operation of another factor in the bringing of things to fruition, the wind.

"We have sent the winds as a means of insemination and impregnation, and then sent down rain from the heavens." (15:22)

In this verse, the Qur'an unveils another great mystery of creation, the fundamental role played by the wind in the fertilization of clouds. Using complex instruments and electrical means, civilized man has made great progress in recent years resulting in the establishment of the discipline known as meteorology. Specialists in this discipline point out the following: "It must be recognized that the obtaining of two conditions – the existence of steam in the air and its distillation to the point of saturating the air – is not enough to cause the formation of clouds and the occurrence of rainfall. A third condition is also necessary, which we may call fertilization."

Science confirms that winds is also a contributory factor in the fertilization of plants.

In the appearance of natural phenomena, a kind of friction and delay always exists. For example, if water is pure and stationary, it is possible that its temperature be reduced to below zero without its solidifying and that it not begin to boil until its temperature is much higher than 100 degrees. Also, steam may not begin to distill even though it has reached a point of saturation, and once it has distilled, its globules may be so minute that they do not fall, remaining instead suspended in the air so that no rainfall occurs. It is necessary for the wind to provide invisible particles of salt, picked up from the surface of the oceans, that then form nuclei of attraction and inflation. More importantly, the moisture in the air has to accumulate around the crystallized snowflakes that have formed at higher altitudes and are then scattered by the wind.

Finally, the minute initial drops of rain merge with each other as a result of the collision and intermingling of the winds until they gradually grow in size and fall through cloud masses as a result of their relatively great weight.

As a result of their friction with features of the earth and with bodies suspended in the air, cloud masses acquire opposing electrical forces. The release of this electricity is accompanied by intense friction of the particles in the air and the formation of nitrogen. This process contributes considerably to the merging and growing of raindrops and the occurrence of rainfall.

In short, the formation and strengthening of clouds, and the occurrence of rainfall and snow, cannot take place without a form of fertilization, accomplished through the intervention of an outside factor.

Artificial rainfall likewise depends on artificial fertilization, carried out in the following way: an airplane scatters "water dust" (pulverized and crystallized ice) in air that has the potentiality of cloud formation but is in a state of delayed equilibrium.

Discussing the rich treasury of knowledge contained in the Qur'an, Dr. Bucaille writes: "Whereas monumental errors are to be found in the Bible, I could not find a single error in the Qur'an. I had to stop and ask myself: if a man was the author of the Qur'an, how could he have written facts in the seventh century AD that today are shown to be in keeping with modern scientific knowledge?

There was absolutely no doubt about it: the text of the Qur'an we have today is most definitely a text of the period, if I may be allowed to put it in these terms (in the next chapter of the present section of the book I shall be dealing with this problem). What human explanation can there be for this observation? In my opinion there is no explanation; there is no special reason why an inhabitant of the Arabian Peninsula should, at a time when King Dagobert was reigning in France (629–639 AD), have had scientific knowledge on certain subjects that was ten centuries ahead of our own." [5](#)

[1.](#) Danishmānda-i Buzurg-i Jāhan-i Ilm, p. 49

[2.](#) Tafsir-i Burhan, Vol. II, p. 278.

[3.](#) Majalla-yi Danishmand, Vol. IX, no. 4

[4.](#) Tasvir-i Jāhan dar Fizik-i Jadid, p. 95

[5.](#) Bucaille, op. cit., p. 120

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