

THE QUR'ANIC COSMOLOGY

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"Lo ! in the creation of the heavens and the earth and in the difference of night and day are tokens for the men of understanding, such as remember Allah, standing, sitting, and reclining, and consider the creation of the heavens and the earth (and say): Our Lord ! Thou created not this in vain" (Qur'an, iii. 190-91).

The creation of the expanding universe and the origin of life and intelligence on the earth pose many fundamental problems which remain unsolved, in spite of all the modern advances in science and technology. The cosmological theories of the steady state or evolution after explosion as explanations of the origin of our expanding universe, and the theories of evolution or of spontaneous creation of man and other biological species on the earth, have been the cause of much controversy. The Biblical theory of creation of the universe and man in October 4004 B.C. on Monday, Tuesday, Wednesday, etc., and of the Lord taking rest on Sunday have led Western scientists to much derision of religion in general terms. Reaction against Christianity is generalised into reaction against all the religions. Consequently, when a Muslim finds this derision of religion in general terms by some of the greatest authorities in science and philosophy in the West, he is misled to believe that their reaction applies to Islam and the Holy Qur'an also. An effort has been made in the present study to bring together the Qur'anic verses about the creation of the heavens and the earth, and about the emergence of life and man on the earth to prove and explain that the Qur'anic cosmology is in positive relationship with the discoveries of modern science. Our scientific inferences deepen our understanding of the Qur'anic concept of the universe and man.

I want to make it clear that our aim is not to justify the Qur'anic verses on the ever-changing concepts of science by far-fetched reasoning, but only to compare and contrast the two views, the Qur'anic and the scientific, so that their mutual connection may become clear.

The materialist who believes in the cosmological theory of the steady state strongly holds that the four-dimensional material world has existed all along and will ever continue to exist. According to him, it is the basic

property of space that as it expands matter is created spontaneously and new stars and galaxies come into being, while the older ones fade out of the continuum on reaching the velocity of light. Amidst all this aimless spontaneous activity, life appeared on the earth, and perhaps on other planets also which have a suitable combination of climatic and material factors, just by an accident, and has itself followed the course of evolution which has culminated in the emergence on the earth of the homosapien species. But in any case it is an aimless series of accidents which results in the struggle of which we are a witness. There is no purpose or aim behind all this: from dust thou art and to dust will be thy return.

The theists amongst the Western scientists and cosmologists assume this expanding universe to have started its aimless course by the sudden explosion of "Yelm," the mother atom, some six thousand million years ago. They have shown by careful sifting of all the astrophysical, astrochemical and geophysical evidence that all the material atoms, now present in the universe, were created within a few minutes of the original big explosion. The temperature at that stage was millions of degrees and light was then the dominant phenomenon. The pressure of light dominated over the gravitational force and the whole mass began to expand at the rate at which we see it expanding to-day. After a few thousand years, the expanding matter cooled to an extent that darkness began to be replaced by light. There were yet no individual bright stars to light up this mass. Some material particles must have, no doubt, been formed and started forming, but the whole mass was no more than a smoke-like something.

At this stage, in the expanding mass under its own inertia, the force of gravitation began to show itself and one continuous smoky mass split itself into numerous turbulent parts, which now form the receding galaxies. On further cooling by radiation, the masses constituting the receding galaxies split into further parts rotating about a centre in each mass and these parts constitute the stars and planetary systems of the universe.

These evolutionary cosmologists, by postulating that the material world started at a particular moment representable by the command "Be" and by showing the dominant stages of "Light" and "Darkness" indirectly and just by implication, lend support to the Biblical story, but immediately after that they are nonplussed, because the Biblical theory demands this start to be in 4004 B.C., and the completion of different stages in six terrestrial days —

Monday, Tuesday, Wednesday, Thursday, Friday and Saturday — which, to say the least, seems absurd. Here they begin to harp on the separate spheres of religion and science.

The Qur'an says that this material universe has been created in six days for a purpose, according to the requirements of wisdom and knowledge. The cosmic day is not a fixed duration in terms of terrestrial counting. It may be of thousands of years on the terrestrial counting. It may be longer still or much shorter. This is clear from the Qur'an itself. "We created not the heavens and the earth and all that is between the two in play. If We had wished to find a pastime, We would have surely found it in what is with Us, if at all We were to do such a thing" (xxi. 16-17); "And He it is who created the heavens and the earth in truth and when He says 'Be,' it is" (vi. 73); "Nast thou not seen that Allah hath created the heavens and the earth in truth? If He pleases, He can do away with you and bring (forth) a new creation" (xiv. 19).⁴⁰⁵

It is thus clear that according to the Qur'an the material world was created at a particular moment for a purpose, in truth, i.e. in accordance with the requirements of wisdom. The general statement that the heavens and the earth were created in six cosmic days is also repeated a large number of times in different contexts. "Surely your Lord is Allah who created the heavens and the earth in six days; then He settled Himself on the Throne" (viii. 54). Again, "And He it is who created the heavens and the earth in six days and His Throne was upon water, that He might prove which of you is best in conduct" (xi. 7); "He who created the heavens and the earth and all that is in between them in six days, then He settled himself on the 'Throne' " (xxv. 59). Practically the same thing is repeated in xxxii. 4 and several other places.

The Holy Qur'an also describes the way in which the creation of the heavens and the earth started and the stages through which the creation passed, "Do not the disbelievers see that the heavens and the earth were a closed-up (mass), then He opened them out? And We made from water every living thing. Will they not then believe?" (xxi. 30). There could perhaps be no better description of the evolutionary cosmology which was certainly

⁴⁰⁵ The same thing has been repeatedly emphasised in several verses, for example in xvi. 3 ; xxix. 44; xxx. 8; xxxix. 5, etc.

not known to or believed in by any astronomer, cosmologist or biologist at the time when the Holy Book was revealed.

Then the process of opening out of the closed-up mass is described in the following words: "All praise be to Allah who created the heavens and the earth and brought into being darkness and light" (vi. 1). It is further explained, "Then He turned to heaven⁴⁰⁶ while it was something like smoke and said unto the earth: 'Come both of you willingly or unwillingly.' They said: 'We do come willingly in obedience' " (xli. 11). The Holy Qur'an thus tells us that a closed-up mass opened out at the command "Be." Then were created Darkness and Light. It was after this stage, when the whole mass was like a smoke, that He began to differentiate between the heaven and the earth, but the two were to grow together. This is a point which is very clear from the above description in the Holy Scripture. The nucleus of the earth began forming at the very start when the foundations of the material universe were being laid. The earth may be revolving round the sun like so many other planets, but it does not appear to be a progeny of this star or some passing-by stranger, as has been suggested by practically all the leading cosmologists and philosophers up to the middle of the twentieth century. The origin of the planets in the systems appears somehow to have started by the fixation of the plasmic matter in which, besides gravitation, a number of other natural forces had a considerable part to play.

The stages of evolution of the cosmos are beautifully described in xli. 9-12: "Say, 'Do you really disbelieve in Him who created the earth in two days?'. . . He placed therein firm mountains above its (surface) and blessed it with abundance and provided therein foods in proper measure in four days, alike for all seekers. Then He turned to the heaven⁴⁰⁷ while it was (something like) smoke and said unto it and unto the earth: 'Come both of you willingly or unwillingly.' They said: 'We do come willingly in obedience.' Then He completed them into seven heavens in two days and He assigned to each heaven its duty and command. And He adorned the lowest heavens with lights and provided it with guards. That is the decree of the Mighty, the All-Knowing."

⁴⁰⁶ Mark, again, the use of singular.

⁴⁰⁷ Mark the use of singular here.

It is thus clear from this Qur'anic description of creation that the evolution of the heavens and the earth has taken place in six periods which have been here termed as "Day." These are really cosmic periods of varying duration and are certainly not periods of twenty-four hours according to terrestrial counting. The six periods in three stages of two *periods* each are as follows:

Stage I, with two cosmic periods (days). (a) First period. Unfolding of the closed-up mass by sudden explosion, formation of material atoms at high temperature, coming into existence of darkness surrounding the lighted mass, its cooling and spread of darkness into the mass itself, congregation starting, a state of thing like smoke, gravitation coming into prominence and splitting up of the whole mass into bigger lumps, then further splitting up of each lump into smaller masses; the stars and planets.

(b) Second period. Stars and other astronomical bodies, big and small, including the earth began separating themselves out, temperature of each mass rising to incandescence.

Stage II, with two other cosmic periods. (c) Third period. The small mass constituting the earth cools and forms what is described as dry ringing clay with its topographic features in igneous rocks.

(d) Fourth period. As the earth cooled further, the first showers of water charged with basic organic molecules fell on carbides and other active compounds of the ringing clay. It was eroded and life-cells began to form and evolve in black mud and water. In this fourth cosmic period lower life spreads over the whole surface of the earth, and it is blessed with lower forms of life and assimilable organic and inorganic substances (foods) in abundance and proper measure for all seekers alike.

It is interesting to note that in this fourth period, when life was appearing and developing and living species were evolving from water, the Qur'an states: "Do not the disbelievers see that the heavens and the earth were a closed-up (mass), then We opened out? And We made from water every living thing. Will they not then believe?" (xxi. 30). It was evidently in this stage when life was developing and evolving in water that the "Throne" of Authority is said to have been on water: "And His Throne was upon water, that He might prove which of you is best in conduct" (xi. 7). It was in

the stage earlier than the appearance of life on earth that the lowest heaven and earth were commanded to work and evolve together. In other words, the higher capacities of the continuum and the lower qualities of aggregates of the spinning gravitational and electrical entities (the fundamental particles) constituting the material atoms and their chains — molecules and cells — were commanded by the Creator to work together harmoniously for the fulfilment of the purpose for which the closed-up mass was opened.

When life appeared, more heavens began to evolve, and when life and intelligence spread all over the earth, it was then that the seven heavens were perfected and the Lord established Himself on the Throne. This took place in the third and the last stage, again in two periods or cosmic days. The Qur'an says: "So He completed them into seven heavens in two days and He assigned to each heaven its duty and command. And We adorned the lowest heaven with (lights) and provided with guards. That is the decree of the Mighty, the All-Knowing" (xli. 12).

Stage III, of two cosmic days. (e) Fifth period. The first of these last two days is the period in which the various species of living animals with different degrees of intelligence were spreading over the earth, and the lowest of the heavens, the four-dimensional continuum was being adorned with lights of different stars.

(f) Sixth period. This last period saw the birth on earth of man endowed with consciousness and thus capable of participating in the creative activity and sovereignty of the Creator, limited by the lowest heaven in space-time complex, and by the other six heavens in rank one above the other. This is described in the Qur'an: "He it is who created for you all that is in the earth; then He turned towards the heavens and perfected them as seven heavens, and He knows all things" (ii. 29); "Allah it is who raised up the heavens without any visible supports, then He settled Himself on the Throne. And He pressed the sun and the moon into service ; each pursues its course until an appointed term. He regulates it all. He clearly explains the signs that you may have a firm belief in the meeting with your Lord" (xiii. 2).

Now the stage was set for the vicegerent to appear on the scene, but the preparation had started long before. The beginning of the story in the Holy Qur'an is as follows: "He it is who created for you all that is in the earth, then He turned towards the heavens, and He perfected them as seven heavens,

and He knows all things. And when thy Lord said unto the angels, 'I am about to place a vicegerent in the earth,' they said: 'Wilt Thou place therein such as will cause disorder in it, and shed blood? And we glorify Thee with Thy praises and extol Thy Holiness.' He answered: 'I know what you know not' " (ii. 29-30).

Let us see how He Himself describes the event of appearance of life and man on the earth. The Qur'an distinguishes between two stages in the appearance of man on earth: (1) creation, and then (2) fashioning him in the homosapien shape. "And We created you, then told the angels: 'Fall ye prostrate before Adam.' And they fell prostrate, all save Iblis" (vii. 11); "And, surely, We created man from dry ringing clay, from black mud wrought into shape. And the Jinn We had created before from the essential fire. And (remember) when thy Lord said unto the angels: 'I am about to create man from dry ringing clay, from black mud altered.' So when I have fashioned him (in perfection) and breathed into him My spirit, do ye fall down, prostrating unto him. So the angels fell prostrate, all of them together save Iblis. He refused to be among the prostrate" (xv. 26-31); "Thereof [viz. from the earth] We created you and thereunto We return you, and thence shall We bring you forth a second time" (xx. 55); "We made from water every living thing" (xxi. 30); "Verily We created man from a product of wet earth" or "Verily We created man from an extract of clay" (xxxiii. 12); "And Allah has created every animal from water. Of them are some that go upon their bellies, and of then are some that go upon two feet, and among them are some that go upon four. Allah creates what He pleases. Surely Allah has the power to do all that He pleases" (xxiv. 45); "And He it is who has created man from water and has made for him kindred by descent and kindred by marriage, and the Lord is All-Powerful" (xxv. 54); "And one of His signs (is this) that He created you from dust, then, behold, you are men who move about" (xxx. 20); "Who has made perfect everything He has created. And He began the creation of man from clay. Then He made his seed from an extract of despised fluid. Then He fashioned him and breathed into him His spirit. And He has given you ears, and eyes, and hearts, but little thank do you give" (xxxii. 7-9); "So ask them whether it is they who are harder to create, or (others) whom We have created ?Them We have created of cohesive clay" (xxxvii. 11); "He created man from dry ringing clay (which was) like baked potteries and the Jinn He created from the flame of fire" (1v. 14-15); "He it is

who originates and reproduces" (Ixxxv. 13); "Who creates and perfects and who designs and guides" (lxxxvii. 2-3); "Surely We have created man in the best make" (xcv. 4).

It is thus clear from these verses of the Holy Qur'an that all kinds of life, including that of man, started from the dry ringing clay; it developed in black mud and then in water. It was at a much later stage that males and females were developed and the species were evolved, and man was fashioned. So far there seems to be no real difference between what is put forth by the Qur'an and the theory of evolution of the modern biologists, but after this a very big difference arises. The theory of evolution entrusts the mutation of species to the mercy of the fundamental laws of struggle for existence, survival of the fittest and adaptation to the environment, while the Qur'an makes it a blessing of God, a reward for good conduct in each phase.

Adam and Eve, the first homosapiens, from whom men and women have spread over the earth, were both produced from a single soul (vi. 99). From a mere animal, be it a female ape or a female of any other animal, were now born two off springs endowed with the spirit of God — the cognition, the determination, the reflection of a perfect ego, the intelligence far beyond the best of the animals, capable of thinking and knowing and deciding and giving expression to feelings and ideas in words and symbols. In spite of the searches during the last century and a quarter the biologists have not been able to find the missing link between man and ape. I think that it shall never be found because the change was not gradual. Suddenly in the womb of an older species a new species took shape and a pair of the homosapiens was born.

According to the verses quoted so far, all this drama appears to have been enacted on the earth itself. The earth cools down and a crust of dry ringing clay of igneous rocks is formed. The first showers surcharged with molecules of suitable compounds and full of reagents capable of strong reaction fall on this dry ringing clay, erode it and life begins to develop in black mud altered and then in water. New species are born until a stage is reached when a female singly gives birth, to the first homosapien and its mate, Adam and Eve. If so, what about the garden from where Iblis along with Adam and Even was expelled?

A careful study of all the verses of the Qur'an, where the story of the fall of Adam is described,⁴⁰⁸ reveals that the garden in which Adam and Eve lived and where Satan was able to beguile them was not what we usually call Paradise, but some garden on this earth. The usual characteristics of Paradise are that people inhabiting it are not prone to evil and death while Adam committed a sin in order to ward off mortality.

Further, it is quite clear from the story of creation that after the opening of the closed-up mass the plasmic matter passed through two periods before the lowest heaven and the earth and other lights or stars could be distinguished. The earth continued to develop its topographic features and chains of food material and living organisms formed in mud and water. The evolution of species by mutation continued to take place as a reward from the Lord for good conduct in each phase.

So long as life with the highest degrees of freedom in the material world was developing in water, the Throne of Authority (*'Arsh*) or seat of communion between the All-Knowing, All-Powerful Lord having infinite degrees of freedom and the material universe, was on water. When higher species with greater intelligence began to spread over the earth, heavens higher in rank were perfected and when man with full cognition and other mental and spiritual attributes came on the scene the seven heavens were perfected and the Throne of Authority was established above the seventh heaven. This would mean that cognition and other spiritual and intellectual attributes of man are nothing but the exhibition of higher degrees of freedom endowed to man by the Lord when He breathed into him His own spirit. The Throne, as mentioned in the Holy Qur'an, is the seat of communion and command between the Creator, having infinite degrees of freedom, and man and the material world with limited degrees of freedom. It is the highest stage from which the commands for the material universe consisting of the seven heavens and the earth descend. It is thus the connecting link between the Lord of infinite degrees of freedom, possessing complete knowledge and power on the one hand, and the continua of limited degrees of freedoms, represented by the seven heavens and the earth, and all that is in between them, on the other. Inanimate material world possesses at least four dimensions or degrees of freedom, viz. of space and time; electromagnetism

⁴⁰⁸ ii. 29-39; vii. 10-27 ; xv. 22-43 ; xx. 115-125 ; xxxviii. 72-84.

represents higher degrees of freedom than that associated with simple matter itself. Life and soul represent still higher degrees of freedom. At the beginning when the closed-up mass opened out, all the activity was confined to the congregation of the fundamental particles and entities in simpler forms and the degrees of freedom of the newly-forming material world were confined to only a few — four, five, six — dimensions. Where was all this activity taking place? Nothing could be outside the pre-existing infinite dimensional Being. All this activity really meant a cognitional realization of the Perfect Ego. In other words, a very limited dimensional activity had started developing in the infinite dimensional continuum. To begin with, the degrees of freedom of the closed-up mass were limited to only a few. As the activity became organized in congregations and chains of greater complexities, viz. as life began to develop, the degrees of freedom of the active mass began to increase. It is evident that the heavens of the Qur'an are only the limits of degrees of freedom developed in the living beings attainable in the lower continua. It is also evident from the verses of the Holy Qur'an that the degrees of freedom of the evil spirits are not higher than the degrees of freedom of the first heaven beyond which they try to probe and seek knowledge, but in spite of their best efforts they will never be able to reach beyond.

It is also evident from the events of the Ascension of Muhammad (peace be on him) that the angel Gabriel had to stop at *Sidrah*, which prescribes to him his degrees of freedom, which are certainly beyond the degrees of freedom prescribed for the seven heavens, which are in turn described to be in rank one above the other without any supports, but which are much less than the degrees of freedom needed to comprehend and have knowledge of the *Arsh* or the Throne.

The angels were commanded to prostrate and bow down before Adam only after the Lord had breathed His own spirit into him and given him knowledge more than that of the angels. This can only mean that the stage of man was reached only after the Lord in His infinite mercy had endowed him with higher degrees of freedom and knowledge. Iblis failed to realize this superiority of man, made from ringing clay, etc. He became arrogant and refused to bow down before the humble man, because he had himself been formed from the fundamental particles of some other kind which have been termed as the "essential of fire" in the Holy Qur'an. Iqbal wonders:

اسے روز اول انکار کی جرات ہوئی کیونکر

مجھے معلوم کیا وہ رازداں تیرا ہے یا میرا

[How did he dare to refuse on the day of creation?

What do I know whether he is your confidant or mine?]

I am definite that the refusal by Iblis was not due to any secret understanding with the Lord. It was due to his pride which was due to his own limited degrees of freedom and thus of a limited capacity of knowledge. The vicegerent had already been created on the earth. His conduct, like the conduct of all other earlier species, had, no doubt, to be tested, but there could be many ways of testing this. If Iblis had not created the trouble, the play of intelligence would have taken some other form in the cool shades of the garden without nakedness and shame.

Reverting to the experience of the Holy Prophet (peace be on him) on the night of Ascension (معراج) we find that the journey of the Prophet, even after the angel Gabriel was left behind, continued till he reached the Throne. The distance between the Lord and the Prophet is stated to be as short as between two bows, which I, like many others, understand to be the distance when two arches touch tangentially, rather than when they stand end to end. This would mean near coincidence with the Lord on the Throne.

This is the highest degree of freedom which man, born of ringing clay, an extract of black mud and water, could reach. This would, in other words, mean maximum possible knowledge that a perfect man could acquire. Prophet Muhammad (peace be on him) did acquire this perfect knowledge with the highest degrees of freedom residable in the continua formed by the matter endowed with life and soul. This knowledge can evidently not be expressed in the symbolism of the lower continua called "language." The Qur'an beautifully describes this. "And We revealed to Our slave what We revealed" (liii. 10).

Coming back to the discussion of the origin of the material universe and the appearance of man, the first and real effect of eating of the forbidden tree was the realisation of nakedness and shame (xx. 121) unlike other

animals who have no such realisation even up to this day. The other two temptations which Iblis had offered to Adam were: *(i)* to become immortal, and *(ii)* to become like angels.

So far as the first temptation is concerned it could have significance only to the mortals crawling on the earth. It had no meaning if Adam was born in the garden where there would be no death every one of us tastes. There are only three stages in the life of man as mentioned by the Holy Qur'an: *(i)* birth on this earth, *(ii)* death on this earth, and *(iii)* resurrection and assembling for the final judgment about the conduct on the earth. Adam was apparently no exception to this scheme.

The second temptation is also a real one for a waking ego, surrounded by a perpetual struggle, himself participating in it. The temptation of the newly-emerging vicegerent, not having experience of his own potentialities, to attain a higher plane of activity — that of angels — must have certainly been great, though really of lower degrees of freedom than his own. It is thus quite evident where and what this garden was where Adam and Eve emerged from a single soul by mutation of the species from a mother singly.

We have thus seen that according to the Holy Qur'an the material universe started by the opening out of a closed-up mass. It passed through three stages of evolution of two smaller periods each. Then life began to develop and evolve on the earth and it was a necessary step for the evolution of the universe itself. In the last stage or the sixth period the Lord breathed His own spirit into man who was created earlier from ringing clay, from black mud altered and in water. With the appearance of man on the scene the seven heavens were perfected and the Lord settled Himself on the Throne.

The story will remain incomplete if we do not refer to the end of the universe. "Remember the day when We shall roll up the heavens like the rolling up of a written scroll by a scribe. As We began the first creation, so shall We repeat it. A promise binding upon Us. We shall certainly repeat it" (xxi.105). So the opening up of the closed-up mass was the beginning and the rolling up like a written scroll will be the end. What a beautiful description of a pulsating four-dimensional relativistic universe! It is expanding at present and will begin to contract at a certain stage. Only the disciplined souls which have mastered the capabilities of higher degrees of freedom will be able to transcend the lower continua to enjoy perpetual happiness in the heaven,

while the undisciplined soul, he wards of Iblis, will remain confined in the perpetual fire of the Hell consisting of the pulsating lower continua.