

Introduction

Most organisms reproduce their own kind by the involvement of male and female parents—a process called sexual reproduction (Barton and Charlesworth, 1998 and the included citation). Parents endow their offspring with coded information in the form of **genes**. In plants and animals, reproductive cells such as, sperm and ova transmit genes from one generation to the next. Transmission of parental genes takes place inside the cells by a process called **meiosis**. Therefore, in a sexually reproducing organism, offspring differ from parents and siblings appreciably by the closely controlled cellular meiotic mechanisms (Ramesh et al., 2005 and the included citations).

Many organisms also reproduce by **asexual** mechanism where a single individual passes along copies of all its genes to its offspring (Neiman 2004 and the included citation). Asexual reproduction similarly occurs at the cellular level and is called mitosis. Asexual reproduction produces offspring that are genetically identical to their parent (clone). Fission, budding, fragmentation, and the formation of rhizomes and stolons are some of the mechanisms that allow organisms to reproduce asexually. For example, the hydra produces buds to regenerate new ones. Starfish can regenerate an entire body from a fragment of the original body. Asexual reproduction allows an

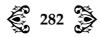
¹ Morshed Khandoker, Assistant Professor, Faculty of Science, International Islamic University Malaysia, E-mail: <u>morshedkhandoker@Yahoo.com</u>



organism to rapidly produce many offspring without the time and resources committed to courtship, finding a mate, and mating.

Despite the obvious efficiencies of many forms of asexual reproduction, sexual reproduction appears to abound in nature. This is because sexual reproduction generates endless genetic diversity by reshuffling the genes of an organism without compromising the organism's genetic integrity (Charlesworth 1991). As a result, each individual member for a particular species can easily be identified by their morphological, biochemical, or genetic differences. Finger printing or more advanced genetic fingerprinting analyses in humans are examples by which an individual can be identified from other members. Besides, sexual reproduction can put two beneficial mutations together or eliminate a deleterious one. It is believed that groups reproducing sexually can evolve more quickly than those do not, because the combination of beneficial mutations will occur more quickly and deleterious mutations will accumulate more slowly. Sexual reproduction is beneficial particularly in the unfavorable environmental conditions or when offspring are dispersed widely to end up in different environments (Waxman and Peck, 1999 and the included citations). This is why common grass grows asexually (locally) but produces seeds by sexual reproduction to travel away, so that in the new environments, there will be diversity for best adaptation.

Additional advantage of sexual mode of reproduction is that it allows organism to defend themselves against diseases (Kurtz, 2003 and the included citations). A particular genetic make up of an organism may be successful against its parasite in one generation but may fail to protect the organism's future generations. This is because the rate of evolution in parasites is very fast compared with their hosts. The only way in which an animal makes sure that its descendants will be able to deal with different parasites is to reproduce sexually. The arms races between <u>parasites</u> and their hosts are generally described by the lock and key analogy. Parasites invent new keys, hosts change the locks. If one lock becomes common in one generation, the key that fits it will spread like wildfire. As such, sexual reproduction persists because it enables host species to evolve new genetic defenses against parasites that attempt to live off them.



Whatever the benefits of sex may be, it is striking that practically all complex present-day organisms have evolved largely through generations of sexual, rather than asexual, reproduction.

A number of organisms, however, posses the option to employ one or the other mode of reproduction depending on the environmental condition (Green and Noakes, 1995 and the included citations). Rotifers (tiny aquatic animals, 0.05 to 2 mm) will reproduce asexually when conditions are favorable by having females produce eggs by mitosis (Yoshinaga et al., 2003). When conditions deteriorate, rotifers will reproduce sexually and encase their zygotes inside a resistant shell. Once conditions improve, these eggs hatch into diploid individuals. Rotifers thus use sexual reproduction as way to survive a deteriorating environment.

.The advantage of sexual and asexual reproductive methods has been well documented in scientific literatures (Lobo and Onody, 2006 and the included citations). Nevertheless, how these reproductive methods had evolved in the first place is not known. It is believed that the origin of sex may be linked with the first cell that evolved in the early earth. By now, almost four billions years have been passed when one counts time from the origin of early earth and the formation of first cellular life-form to its subsequent variation into millions of different species that exist today. It is not known how these species could evolve and maintain their integrity, and at the same time, demonstrate variations by involving different reproductive strategies. That, an understanding of the origin of these reproductive strategies has remained as one of the most challenging areas of todays biology, is no wonder when one looks into the Qur'anic verse 36:36 that states that

سُبْحَانَ الَّذِي حَلَقَ الأَزْوَاجَ كُلَّهَا مِمَّا تُنبتُ الْأَرْضُ وَمَنْ أَنفُسهمْ وَمِمَّا لا يَعْلَمُونَ

Glory be to Him who created pairs of all the things the earth produces and of themselves, and that of which they have no knowledge.



This appears to be a very powerful quranic verse because of the beginning word "glory be to Him". Few verses in Qur'an that start with this word generally indicate events of humongous significance. In this verse, Allah (SWT) mentions that the plants, animals, humans, and all other creatures that humans possess no knowledge, have been created in pairs. Several Quranic verses, including 2:164, 4:1, 7:189, 13:3, 16:8, 16:72, 30:20-21, 39:6, 42:11, 43:12, 45:4, 51:49, 53:45-46, 75:39, 78:8, and 92:3, further support the message conveyed in verse 36:36.

First Life Form on Earth: Looking Back into History

It is speculated that the first cellular life form evolved early in the history of earth. How long ago did that happen is not known. The precise age of earth can not be determined because earth's oldest rocks have been recycled and destroyed by the process of plate tectonics. Earth's primordial rocks in their original state have not yet been found. As such, scientists calculate the age of earth by assuming that the earth and the rest of the solid bodies in the solar system formed at the same time and are, therefore, of the same age (Lazcano et al., 1983). The oldest rocks exceeding 3.5 billion years in age are, however, found on all of earth's continents. The oldest rocks on Earth found so far, the Ataska Gneisses, occur in northwestern Canada near Great Slave Lake (3.96 billion years), but well-studied rocks nearly as old are also found in the Minnesota River Valley and northern Michigan (3.5-3.7 billion years), in Swaziland (3.4-3.5 billion years), in Western Australia (3.4-3.6 billion years), and in western Greenland (3.7-3.8 billion years). These ancient rocks are not from any sort of "primordial crust" but are lava flows and sediments deposited in shallow water that indicates that earth's history began well before these rocks were deposited (Brent, 1991).

In Western Australia, single zircon crystals of ages as much as 4.3 billion years have been found, making these tiny crystals the oldest materials to be found on earth so far. The source rocks for these zircon crystals have not yet been found. This shows that the Earth is at least 4.3 billion years in age. Additional support for such age of earth comes from lunar rock analysis. The Moon is believed to have been



formed from earth by a solar collision with a Mars size object in the past. Moreover, the moon is considered a more primitive planet than earth because it has not been disturbed by plate tectonics. The oldest dated moon rocks have ages between 4.4 and 4.5 billion years and provide a minimum age of earth in this range. Additional studies from meteorite analysis show that the solar system formed between 4.53 and 4.58 billion years ago. The best age of 4.54 billion years found for earth is generally consistent with most analytical studies (Zhang, 2002 and the included citations).

It is believed that the first cellular organism might have appeared early in the history of earth, about 3.5-4.0 billion years ago. It is speculated that the earth's crust had been solidified about 4.1 billion years ago. This allowed the first prokaryotic organisms (bacteria) to advance enough and build stromatolites. Fossils similar to round and filamentous prokaryote have been recovered from stromatolites 3.5 billion years old in Australia (Brasier et al., 2005). As such, in the remaining sections of this analysis, 3.5 billion years will be quoted as the time when life first appeared on earth. Interestingly, these prokaryotes have remained in existence until today. What had happened to these bacteria during their 3.5 billion years of existence is not known. Because of absence of nucleus in their cells, prokaryotes were once considered to be able to reproduce only clone-like offspring.

However, studies have already shown that even bacteria undergo sexual conjugation to produce different variants of offspring (Riley, 2005 and the included citations). In the process of bacterial conjugation, one bacterium ("male") donates DNA and its "mate" ("female") receives the genes. A sex pilus from the male initially joins the two cells and creates a cytoplasmic bridge between cells. "Maleness," allows forming a sex pilus and donating DNA that result from an F factor (a section of the bacterial chromosome or as a plasmid). Cells with either the F factor or the F plasmid are called F+ and they pass this condition to their offspring. Cells lacking either form of the F factor are called F⁺, and they function as DNA recipients. When an F⁺ and F⁻ cell meet, the F⁺ cell passes a copy of the F plasmid to the F cell, converting it to F⁺. The plasmid form of the F factor can also become integrated into the bacterial



chromosome. Such cell will be called the Hfr (high frequency of recombination) cell. Hfr cell functions as a male during conjugation. The Hfr cell initiates DNA replication at a point on the F factor DNA and begins to transfer the DNA copy from that point to its F^- partner. It is no wonder that Allah (SWT) mentions this in Quranic verse 36:36, which is further supported in verse 51:49 stating that

(51:49) وَمَن كُلِّ شَيْء خَلَقْنَا زَوْجَيْن لَعَلَّكُمْ تَذَكُرُونَ

And of **everything We have created pairs**, that you may remember (the Grace of Allah).

The impact of such "sexual" conjugation on the ancient bacterial populations appears less likely to be understood clearly. The precise time period for such conjugation process to evolve in the past has not been known. Nor is it known clearly if the conjugation process had any impact on the evolution of other species. However, conjugation allows bacteria to diversify and today, after three and a half billions years of existence, prokaryotes still continue to diversify and dominate the biosphere. Their collective biomass outweighs all eukaryotes combined at least by ten-fold. More prokaryotes inhabit a handful of fertile soil or the mouth or skin of a human than the total number of people who have ever lived on earth. By some estimates, only about 5,000 species of prokaryotes are currently known, where actual prokaryotic diversity may range from about 400,000 to 1 billion species (Pedrós-Alió, 2006 and the included citations). According to such speculation, more than 99.9% of the prokaryotic organisms still remain unknown! That the mankind possesses so limited knowledge on the great majority of the prokaryotic organisms and their malefemale characteristics appear to be unimaginable in light of current, more advanced state of science! Thus, it becomes easier to understand the beginning statement of verse 36:36 "glory be to Him" since Allah (SWT) introduces another extremely important fact to mankind by saying "and of that which they know not". That, the mankind does not know what Allah (SWT) has created in pairs, is further supported in the Quranic verse 16:8 that states that

(16:8) وَالْحَيْلَ وَالْبِغَالَ وَالْحَمِيرَ لِتَرْكَبُوهَا وَزِينَةً وَيَخْلُقُ مَا لاَ تَعْلَمُونَ

And (He has created) horses, mules and donkeys, for you to ride and as an adornment. And He <u>creates (other) things of which you</u> <u>have no knowledge</u>.

Advanced Cellular Life Forms

It is speculated that after about one and a half billions years of prokaryotic existence on earth, a new type of organisms started to emerge in nature. These are known as eukaryotic organisms because they acquired nucleus into their cells. The eukaryotes continued to exist and evolve for the subsequent two billion years, that is, until now (Bui et al., 1996 and the included citation). These cellular organisms are believed to have evolved from a symbiotic association of early organisms. The eukaryotes consisted of mostly prokaryotic microscopic organisms known by the informal name "protists." Modern day protists include about 60,000 different species with widely different characteristics. These organisms would reproduce by sexual (meiosis) or asexual mode (mitosis); meiosis is believed to have been evolved from mitosis in these eukaryotic organisms. However, the mechanism by which sexual processes evolved and advanced from prokaryotic to eukaryotic and then, among the eukaryotic species has not so far been delineated with convincing evidences. It is apparent that for nearly the entire period of three and a half billion years, only the unicellular prokaryotes and eukaryotes dominated the face of the earth. Mankind did not exist for such a long period of time though the earth had activities filled with different cellular life forms. This appears to have been supported in the Quranic verse 76:1 where Allah (SWT) says,

[هَلْ أَتَى عَلَى الإِنسَــنِ حِينٌ مِّنَ الدَّهْرِ لَمْ يَكُن شَيْئًا مَّذْكُوراً]

"Has there not been over man a period of time, when he was not a thing worth mentioning?"

Higher Organisms

Multicellular, more advanced organisms started to evolve during the last half a billion years from their eukaryotic ancestors. Today, some estimates speculate that there probably exists about 10 to 100



million different biological species in nature (Odegaard, 2000). Of these, according to All Species Foundation data (http://www.all-species.org), only 1.7 million species have so far been described in scientific literatures. Moreover, it is believed that the currently existing species represent only 1% of all the organisms that once inhabited the earth. To understand the origin of sex in all these species appears to be impossible, especially when 99% of the biodiversity has already been extinct and more than 80% of the remaining species have not been studied at all! Thus, it is quite apparent that the verse 36:36 not only applies to microscopic prokaryotic species; rather, it probably applies to all types of creations. The quranic verses 2:164, 16:8 (listed above), and 45:4 lend further support to verse 36:36.

(2:164) إِنَّا فِي خَلْقِ السَّمَـوَت وَالاَّرْضِ وَاخْتَلَـف اللَّيْلِ وَالنَّهَارِ وَالْفُلْكِ الَّتِي تَحْرِى فِى الْبَحْرِ بِمَا يَنفَعُ النَّاسَ وَمَآ أَنزَلَ اللَّهُ مِنَ السَّمَآء مَن مَّآء فَأَحْيَا بِهِ الأَّرْضَ بَعْدَ مَوْتَهَا وَبَثَ فِيهَا مِن كُلِّ دَآبَةٍ وَتَصْرِيفِ الرِّيَـجِ وَالسَّحَابِ الْمُسَخَّرِ بَيْنَ السَّمَآءِ وَالأَرْضِ لآيَـتَ لِقَوْمٍ يَعْقِلُونَ

Verily, in the creation of the heavens and the earth, and in the alternation of night and day, and the ships which sail through the sea with that which is of use to mankind, and the water which Allah sends down from the sky and makes the earth alive therewith after its death, **and the moving creatures of all kinds that He has spread therein**, and in the veering of winds and clouds which are held between the sky and the earth, are indeed signs for people of understanding.

وَفِي خَلْقِكُمْ وَمَا يَبُثُّ مِن دَآبَّةٍ ءَايَــتُ لِّقَوْمٍ يُوقِنُونَ(45:4)

And in your creation, and **what He scattered (through the earth) of moving (living) creatures are signs for people** who have faith with certainty.

Of the extant species that have so far been studied include 270,000 plant species (Coleman and Whitman, 2005), 42,000 vertebrate animals, and 750,000 insects. Interestingly, these species are thought to have evolved from ancestral species that originated during a short period of time (between 543 to 525 million years ago).



This is known as the "Cambrian Era." It is also known as Biology's Big Bang or the Cambrian Explosion because of the great diversity of life that evolved suddenly during this time (McCall, 2006 and the included citations). The first appearance of limbs and segmented bodies along with the development of shells, jaws, claws, and teeth seem to have taken place during this time. The first organisms to be predators also evolved along with millions of different life forms, all of which would spend most of their time on the muddy sea floor. No creatures had initially traveled on land and yet, within about next 10 million years, this same stock would give rise to millions of different forms, shapes, sizes, and abilities such that these new organisms would fly, swim, and crawl on land. How so many different types of species could evolve abruptly in such a short period of time is not known. But it is speculated that the ancestor of the true animals could have been a colonial flagellated protist that lived about 700 million years ago in the Precambrian era. A further ancestor of this protist (a probable choanoflagellates) is thought to have evolved about a billion years ago. Plant, on the other hand, is believed to have initially originated from aquatic ancestors about 475 million years ago which might have been originated from early eukaryotes such as, charophytes.

Origin of Sex

Scientists believe that the sex first evolved among the unicellular organisms (Michod, 1998). Current understanding of meiosis and bacterial conjugation (Davison, 1999) mechanisms appears to indicate that both prokaryotic and eukaryotic organisms probably employed complex methods for their gradual progression from simpler to more complex form. This otherwise suggests that the origin of sex may be linked with those initial cellular life forms that probably flourished some three and a half billion years ago. Such understanding appears to be the theme of verse 36:36, which is in harmony with the quranic statement 51:49 (mentioned above) and 43:12 where Allah (SWT) says,

(43:12) وَالَّذِي خَلَقَ الْأَزْوَاجَ كُلَّهَا وَجَعَلَ لَكُم مِّنَ الْفُلْكِ وَالْأَنْعَامِ مَا تَرْكَبُونَ



And Who has **created all the pairs** and has appointed for you ships and cattle on which you ride?

Scientists generally consider meiosis as the only mechanism of sexual reproduction (Marais, 2003 and the included citations). They suggest that meiosis-dependent sex first evolved in the unicellular eukaryotes. These organisms acquired nucleus and, therefore, could undertake the sexual mode of reproduction. As such, according to their view, sex probably evolved about two billion years ago with the origin of eukaryotic organisms. Some scientists hold the opinion that Saccharomyces pombe (a type of yeast) could be a probable candidate because Saccharomyces cerevisiae (a different species of yeast from the same genus; see review by Zeyl, 2004 and the included citations) shows an elaborate and well-known meiotic process though the S. pombe employs much simpler meiotic mechanism. Yet others suggest that protists having optional or alternative sexual and asexual cycles must be the best targets for research on the evolution of sex (Birky, 2005 and the included citations). As such, neither the specific type of eukaryotic organisms nor the mechanism by which meiosis first evolved could be delineated until now. A specific time-frame when meiosis evolved in the past (and therefore sex) could not be determined either. As stated already, lack of human understanding of origin of sex is not surprising in the light of what Allah (SWT) has stated in verse 36:36; one may also look into Quranic verse 53:45, where Allah (SWT) says,

وَأَنَّهُ خَلَقَ الزَّوْجَيْنِ الذَّكَرَ وَالأُّنثَى

"And that He (Allah) creates the pairs, male and female.

Indirect Approach to Understand the Origin of Sex

Lack of direct data led scientists to seek for alternate ways to understand the origin of sex in eukaryotic organisms. It is known that the sexual reproduction (meiosis) is advantageous over the asexual method not only because the characteristic features of every species are conserved; but, also because sexual reproduction allows newer variations to emerge in the next generation. This allows newer life



forms to evolve faster than the asexual methods. If such sexual reproduction continues, then over a certain time, the process of meiosis should produce a tree-like pattern of evolution for all new species. If the process of meiosis could evolve among the early eukaryotes (two billion years ago) then, a tree-like pattern of evolution could be observed beginning that particular period of time. In contrast, a tree like pattern of eukaryotic evolution is speculated to have taken place only about 550 million years ago (mya) during the Cambrian Era. As such, this indirect observation suggests that the cellular sexual reproduction may have evolved abruptly sometime about 550 mya.

Nevertheless, it is believed that the meiosis in eukaryotes probably set the stage for evolution about two billions years ago, which ultimately produced the tree-like branching pattern much later. Understandably, the speculation varies a lot and neither the time point (a wide range, from 2 billions-550 millions years ago) nor the species where meiosis first evolved could be determined. It is important to note that without the meiotic reproductive process, the first colonial unicellular life forms could not evolve. These colonial cells are believed to have played a critical role because they underwent further differentiation to produce multicellular life forms. And it is the multicellular life forms in which the visibly differentiated sex could evolve (Liu et al., 2004).

Problem of Sex in Multicellular Life Forms

Asexual and sexual reproductions are cellular processes (that is, mitosis and meiosis, respectively). This means, it is easier for a single cell to reproduce by either of the two ways. This scenario gets far more complicated for a multicellular organism. For example, an average 70 kilogram human body possesses more than 100 trillions cells. These cells differ structurally and functionally from one another depending on the tissues and organs they form. For these multicellular life forms, new types of cells were needed that would be dedicated for the organism's reproductive purposes. It is believed that, in some of the early multicellular organisms, some cells started to differentiate into germ cells (also called gamete). Precisely how and in which organisms that happened first could not so far be understood.



The germ cells are the sperm (in male species) and egg cells (in female species), together with their precursor cells. All the rest of the cells would be called the somatic cells of the body. These somatic cells are responsible for all bodily functions other than the sex. Species would conserve their whole body characteristics and integrity by maintaining fixed pairs (two sets) of chromosomes in the somatic cell. For humans, each somatic cell contains 23 pairs of chromosome that includes 22 pairs of normal chromosomes and one pair of sex chromosomes (XX for female or XY for male). Somatic cell is, thus, represented as 46XX or 46XY; 46 to indicate the total number of chromosomes while XX or XY to only indicate the female or male, respectively. In contrast, each egg or sperm cell contains only 23 individual chromosomes consisting of 22 normal chromosome and one X chromosome (for egg) or 22 regular chromosome plus either one X or one Y chromosome (for sperm). As such, the sex determining system is also called the X-Y system though some organisms follow different mechanisms.

Mechanism of Sex Determination in Multicellular Organisms

One of the greatest problems in the germ cell-mediated sex determination in multicellular organisms is that these cells do not follow a unified mechanism. In other words, male and female germ cells may employ one of the X-Y, X-O, or Z-W systems (or no sex chromosome systems; described below). This appears to be a major obstacle why a step-wise evolutionary pattern for origin of sex could not so far be identified in nature.

X-Y system

X-Y system is most common among the mammals, including the humans. In human, out of 23 pairs of chromosomes, 22 pairs are known as autosomes; that is, they are common both in male and in female. The other pair, as mentioned already, would be either XX (for female) or XY (for male). The karyotype (chromosome type) of a human male is, therefore, 46XY, and that of a female is 46XX. This would mean that an egg (female germ cell) can only be 23X while a sperm could either be 23X or 23Y. Combination of sperm and egg, thus, restores 46XX (female) or 46XY (male) to develop into a new-



generation individual. In mammals, as a whole, the presence or absence of the Y chromosome usually determines sex. In other words, it is the male sperm that determines sex for the next generation offspring.

People at all ages in the past have asked this fundamental question like what makes a child male or female. It is only in the twentieth century that the biologist could successfully find the answer. Yet, one would be surprised to know that an extremely small percentage of today's populations are really familiar with such information! Amazingly, Prophet Muhammad (peace be upon him) had passed this information to his companions early in the seventh century and, thereafter, been recorded in several hadiths! On several occasions, Prophet Muhammad (peace be upon him) was asked about the creation of males and females. And, he (peace be upon him) explained this information to his companions in a manner appropriate and suitable to their personal levels of understanding that existed at that time (14 centuries ago). Two important hadiths that have been narrated by Muslim in this respect are included below.

1. Book 003, Number 0613:

It is reported on the authority of 'A'isha that a woman came to the Messenger of Allah (peace be upon him) and inquired: Should a woman wash herself when she sees a sexual dream and sees (the marks) of liquid? He (the Holy Prophet) said: Yes. 'A'isha said to her: May your hand be covered with dust and injured. She narrated: The Messenger of Allah (peace be upon him) said: Leave her alone. In what way does the child resemble her but for the fact that when the female substance contributed by woman prevail upon those of man, the child resembles the maternal family, and when the male reproductive substance prevail upon those of woman the child resembles the paternal family. The meaning of this hadith has been included at the end of the following hadith.

2. Book 003, Number 0614:

Thauban, the freed slave of the Messenger of Allah (peace be upon him), said: While I was standing beside the Messenger of Allah



(may peace be upon him) one of the rabbis of the Jews came and said: Peace be upon you, O Muhammad. I pushed him back with a push that he was going to fall. Upon this he said: Why do you push me? I said: Why don't you say: O Messenger of Allah? The Jew said: We call him by the name by which he was named by his family. The Messenger of Allah (peace be upon him) said: My name is Muhammad with which I was named by my family. The Jew said: I have come to ask you (something). The Messenger of Allah (peace be upon him) said: Should that thing be of any benefit to you, if I tell you that? He (the Jew) said: I will lend my ears to it. The Messenger of Allah peace be upon him) drew a line with the help of the stick that he had with him and then said: Ask (whatever you like). Thereupon the Jew said: Where would the human beings be on the Day when the earth would change into another earth and the heavens too (would change into other heavens)? The Messenger of Allah (peace be upon him) said: They would be in darkness beside the Bridge. He (the Jew) again said: Who amongst people would be the first to cross (this bridge)? He said: They would be the poor amongst the refugees. The Jew said: What would constitute their breakfast when they would enter Paradise? He (the Holy Prophet) replied: A caul of the fish-liver. He (the Jew) said. What would be their food alter this? He (the Holy Prophet) said: A bullock which was fed in the different quarters of Paradise would be slaughtered for them. He (the Jew) said: What would be their drink? He (the Holy Prophet) said: They would be given drink from the fountain which is named" Salsabil". He (the Jew) said: I have come to ask you about a thing which no one amongst the people on the earth knows except an apostle or one or two men besides him. He (the Holy Prophet) said: Would it benefit you if I tell you that? He (the Jew) said: I would lend ears to that. He then said: I have come to ask you about the child. He (the Holy Prophet) said: The reproductive substance of man is white and that of woman (i. e. ovum central portion) yellow, and when they have sexual intercourse and the male's substance prevails upon the female's substance, it is the male child that is created by Allah's Decree, and when the substance of the female prevails upon the substance contributed by the male, a female child is formed by the Decree of Allah. The Jew said: What you have said is true; verily you are an Apostle. He then returned and went away. The Messenger of Allah (May peace be upon him) said: he asked me about



such and such things of which I have had no knowledge till Allah gave me that!

According to the Thauban hadith—a male (X-Y) child results when the "male's substance (Y) prevails upon the female's substance (X), and a female (X-X) child results "when the substance of the female (X) prevails upon the substance contributed by the male". This meaning also applies to the hadith narrated by A'isha. It should be noted that, according to modern scientific terminology, the male and female substances mean the Y or X chromosomes, respectively. Scholars in Islam need to take caution interpreting this hadith, which has originally been described for human situations. This hadith does not talk about other mammalian species though the same mechanism might determine sex in other mammalian species as well. This caution should be practiced because exceptional mammalian species could exist that may not follow this mechanism. More importantly, there exists hundreds of different animal species where male sperm does not determine the sex at all (described later, under the Z-W chromosome system)! It is interesting that the prophet (peace be upon him) got this modern-day understanding about 14 centuries ago as emphasized by the statement, "he asked me about such and such things of which I have had no knowledge till Allah gave me that"!

The X-Y mediated sex determination system has been found to be extremely variable (Graves, 2002). And because of these variations (described below), the X-Y method of sex determination has so far been considered as far from universal. For example, the mammalian Y is smaller than the X though the plant, Silene latifolia's Y chromosome is larger than it's X. Of the 270,000 extant plant species (Coleman and Whitman, 2005), most develop flowers with both male and female sex organs in the same flower (monoecious plants). However, there exists several thousands of dioecious plant species where male or female flowers form on different individuals. Interestingly, the presence of well-established sex chromosomes in these dioecious plants is rare (Vyskot and Hobza, 2005). Such intricate complexities seem to have rightly been acknowledged in the Quranic verse 36:36, which is further supported in verse 13:3 where Allah (SWT) says,



"And it is He Who spread out the earth, and placed therein firm mountains and rivers **and of every kind of fruits He made two in pairs**. He brings the night as a cover over the day. Verily, in these things, there are Ayat (proofs, evidences, lessons, signs, etc.) for people who reflect."

The behavior of X-Y sex chromosomes also varies extremely in the animal worlds. It has already been mentioned that, for humans, it is the male sperm (presence of Y chromosome) that determines the sex for the next generation offspring. In fruit flies, on the other hand, the ratio of X chromosomes to autosomes is crucial to develop malefemale characteristics (Ray and Fox, 2005 and the included citations). In crocodiles and other reptiles, chromosomes have a marginal role the temperature at which eggs are incubated is the key (Sarre et al., 2004). Slipper limpets, which form stacks attached to seashore rocks, change sex according to their position in the stack (Hoagland, 1978). Even more bizarre is the marine worm, Bonellia viridis. Its larvae settle on the ocean floor and turn into 10-cm long females. Other larvae are attracted to the worm's proboscis, and when they land on it they are ingested and turn into tiny sperm-producing symbiotic males in the female gut (Jaccarini et al., 1983). Among the tetrapod vertebrates that posses microscopically similar X and Y chromosomes, there exists a wide diversity of sex determination mechanisms. Even wider ranges of sex determining systems are found in teleost fishes that include self-fertilizing hermaphrodites, sequential hermaphrodites, and environmental sex determination (Idler et al., 1976). Understanding how the X-Y system could diversify itself into so many ways and also to pin-point their point of origin appears to be a great puzzle for the modern day biologists. Such hurdles readily reinforce the truth stated in Qur'anic verse 36:36; interested readers might also find verses 16:8, 43:12, 51:49, and 92:3 as indicative of human limitations on the paired creations of species.



Origin of X-Y Chromosome

Researchers have been investigating for decades on several key questions including when, how, and the type of species where the X-Y system could have been originated first (Graves et al., 2006; Graves, 2006; Kohn et al., 2004; Graves, 2002). Some studies speculate that the X and Y chromosomes dependent sex arose about 80-130 million years ago among some mammalian ancestors (Waters et al., 2001). It is believed that the X and the Y chromosomes originally was a pair of identical sister chromosomes like any other pair of autosomes. It is also speculated that, about 300 million years ago, such pair of chromosome probably existed in a reptilian species where one of them (obviously the Y chromosome) had to undergo an accidental mutation (Lahn and Page, 1999). As a result, a sex differentiating gene appeared in Y chromosome that might have allowed Y chromosome to direct the development of sperm-producing testes. It is known that sex did exist among the reptiles before 300 million years ago but, without the involvement of X or Y chromosomes. Environmental cues such as temperature or other factors would determine whether an animal develops as male or female. Such system is still in place in turtles and other reptiles where sex can be determined only by a chance or uncertain environmental events (Sarre et al., 2004 and the included citations). Alternate hypotheses also exist; one such hypothesis is advocating for the epigenetic mechanism of X-Y chromosome evolution (Jablonka, 2004 and the included citations, Valley and Willard, 2006) rather than due to accidental mutation. It seems that the epigenetic view is fast getting acceptance; therefore, it will probably be some time before one can judge the different views of X-Y evolution. Irrespective of the mechanism by which they originate, the X-Y chromosomes are real and they do determine sex. They mediate a precisely controlled reproductive mechanism among mammalian species and eliminate the uncertain chance factors during reproduction. They also maintain an approximately one-to-one malefemale ratio during reproduction.

The benefit of X-Y mechanism of reproduction has been well documented in science. Their mechanism of origin has not been established from convincing scientific investigations. It does not seem likely to find any direct evidences of X-Y chromosome evolution



either, since it is not possible to go back into the different time periods in the past. The key issue that how the X-Y pair of chromosome could gradually evolve into humans from a pair of ordinary autosome would perhaps continue to challenge the human minds in future. It is true that the Y chromosome has different morphology and gene content than X; the scientific argument that the Y chromosome gains it by an accidental mutation constitutes "faith", or more appropriately, a "scientific faith." Besides, what science sees as accident, Qur'an declares it happens by the will of Allah (SWT). The Qur'anic verse 36:36 firmly establishes this truth and is further supported in the following verses.

The Creator of the heavens and the earth. **He has made for you mates from yourselves** and for the cattle (also) mates. By this means He creates you (in the wombs). There is nothing like unto Him, and He is the All-Hearer, the All-Seer.

آ فَجَعَلَ مِنْهُ الزَّوْحَيْنِ الذَّكَرَ وَالأَنثَى [75:39] And made him in two sexes, male and female. [78:8] وَخَلَقْنَــكُمْ أَزْوَجاً

And We have created you in pairs.

وَمَا خَلَقَ الذَّكَرَ وَالأَنثَى [92:3] And by Him Who created male and female.

Another major obstacle that challenged the contemporary biologists was to find an acceptable mechanism by which the human Y chromosome could shrink to 1/6th of the size of its counterpart, that is, the X chromosome. It is well known that the recombination is a key event of meiosis in which two identical chromosomes pair-up and exchange their sequences to produce new varieties of individuals. As such, it is believed that the suppression of X-Y recombination should greatly affect the Y-chromosome integrity. The X chromosome can recombine along its whole length with a sister X whenever it passes through a female. Since the Y chromosome did not recombine along



most of its length it could disintegrate easily without compromising cellular functions. This is because, without recombination, DNA rearrangements accumulate, genes decay, and useless bits of DNA amplify. When DNA becomes useless, repetitive and devoid of genes, cells can toss it out without suffering any damage (Lahn and Page, 1999).

Scientifically, one can assume that with time, the mutated Y chromosome started to focus only on male-making and dropped most of its previous duties. By literally shedding all but a core of about 78 genes, the Y gradually shrank to about one-sixth the size of the X. By such assumption, the functions of those lost genes had to be carried out by its unmutated partner, the X chromosome. Because of the loss of Y genes it once shared with the X, the X-Y chromosomes can not recombine gene-by-gene during the production of sperm or egg. Rather, they now recombine only over a very small region at the tip (About five percent of the Y chromosome). This region is called the pseudoautosomal region. The pseudoautosomal region is more generich than the rest of the Y chromosome. Several of the genes on the pseudoautosomal region of the Y also have counterparts on X. Such similarity has been considered as an indication that the X and Y may have evolved from a common ancestor some 300 millions years ago (Lahn and Page, 1999).

Many studies, however, speculates that the absence of recombination would make Y chromosome unable to repair itself thereby leading to its extinction! The mammalian Y chromosome had degenerated to such an extent that these studies have assumed that it did nothing except determining the maleness. These studies also speculate that the continued degradation of the Y chromosome might result in the complete degeneration of Y chromosome (Graves, 2006 and the included citations); in reality, this should otherwise mean an extinction of the human males! Despite these speculations, many biologists hold the belief that the future extinction of human male species is unlikely. Such idea gains support from observations that have indicated that the degeneration of the Y had been offset at various times in the past. They suggest that the offset of Y degeneration had been mediated by additions of autosomal genes to Y chromosome (as well as to X). This had led to a pattern of loss and



gain of genetic material in Y chromosomes over a period of about 170 million years (Charlesworth and Charlesworth, 2005).

The above discussion suggests that the mechanism of X-Y origin has not been established from direct observations that could produce solid scientific conclusion. Rather, an accidental mutation, long time ago in the past, becomes the basis of many scientific conclusions. No conclusive data are available that could describe the step-by-step evolution of X-Y chromosomes beginning from the reptilian ancestors till the modern humans. The assumption that more than 85% of Y chromosome's nucleotide sequences have lost during a period of 300 million years comes from the existing evolutionary theory that suggests that the evolution of humans from reptiles required about 300 million years. As such, this data reflects a natural observation only. In other words, until now, the researches on X-Y origin have mostly been aimed at obtaining data that would fit the existing reality only. Many of the currently proposed scientific theories thus rationalize already existing natural phenomena by using recently completed HGP data. However, the way by which the HGP data are interpreted to support the origin of males and females (by accidental mutation etc.) seems to constitute a "scientific faith", as mentioned already.

If one realizes how much one has to depend on faith and accidental chance factors to accept the proposed mechanism of X-Y origin, and that is also in the name of science which is ever-changing, then one would readily realize why the verse 36:36 starts with a powerful beginning statement "glory be to Him"; without contradicting any solid scientific data, this statement nullifies all those accidental chance factors and rightly re-iterates that no power, but Allah, has the ability to create an extraordinarily complicated male-female relationships in a manner that is highly specific for each of those known and unknown life forms! Such amazing male-female relationships has further been supported in Quranic verses 42:11 (listed above) and 30:21; the latter verse states that

وَمنْ ءايَــته أَنْ خَلَقَ لَكُم مِّنْ أَنفُسكُمْ أَزْوَجاً لِّتَسْكُنُواْ إلَيْهَا وَجَعَلَ بَيْنَكُم مَّوَدَّةً وَرَحْمَةً

§ 300

"And among His signs is this that <u>He created for you wives from</u> <u>among yourselves</u>, that you may find repose in them, and <u>He has put</u> <u>between you affection and mercy</u>".

The Qur'anic verse 36:36 has directly indicated that Allah (SWT) has created all species in paired forms. Interestingly, the verses 30:21 and 42:11 mention that, for humans, even each of the pairs (that is husband and wife) has also been created independently. This probably suggests that one need not to consider the creation of males and females only from a general point of view; for example, by the involvement of X and Y chromosomes only. Rather, the chromosomes X-Y and whatsoever is needed to create the males, females, and the independent pairs, all of those have been created by Allah (SWT) according to His plan. It is worthwhile to note that one can explain the differences between the human female and male in terms of presence of X or Y, but how can one determine the affection and mercy that develops between the husband and wife?

The Degenerating Y, the Integrity of Sex, and X-inactivation

Biologists appear to have been confronted with many challenges just to understand how the X-Y system can function with enormous precision rather than creating chaos. For example, many biologists do acknowledge that the loss of genes from Y chromosome should have presented life-threatening problems for effective and balanced practices of the male and female species. This is because, with the greatly reduced Y (about 78 genes to produce only 23 proteins) and a normal X chromosome (1098 genes), a human male practically retained only one copy of those critical genes whereas, a female continued to have two copies of these genes, intact on her two X chromosomes. Female thus possess double the dose of genes compared with the males. Despite such differences, biologists were initially surprised to find that the males and females still continue to perform normal physiological functions. Today, biologists know that at least two mechanisms are operating in nature to counter-balance such differences in gene expression between males and females. For some species, gene activities on the one X present in males have been increased to produce twice as much in males as in females. For other species, the expressions of X-linked genes have been decreased in



females possessing two X chromosomes by a special mechanism called X-inactivation.

The first mechanism is seen in some insects, including Drosophila, while mammals use the X-inactivation mechanism to balance their gene activities (Ray and Fox, 2005; Willard, 2005; Valley and Willard, 2006). In X-inactivation, female embryos randomly inactivate one X chromosome in each of her cell. Xinactivation requires a locus on the X, called the X-inactivation center. At this locus, inactivation occurs in response to a developmental cue, which is present only at specific stages of embryonic development. Inactivation occurs because of a specific type of RNA, which binds to one X chromosome, preventing transcription of the genes on this particular copy. In addition, enzymes add methyl groups to the DNA of the inactive X, resulting in repression of transcription. It may sound amazing, but for proper functioning of the X-Y system, the Y chromosome had to lose its similarity with the X and the X chromosome inactivation had to occur immediately; almost side-byside! What biological process could facilitate such simultaneous finetuning of X-Y evolution remains to be a great mystery for today's biologists! It is no wonder that Allah (SWT) had to swear by His glory in verse 36:36 to convince mankind that creation of male and female among all the known and unknown species was possible only by the will of Allah.

Strange Features of the Inactivated X chromosome in Female

The recently completed HGP data also suggest that some 15 percent of inactivated X chromosomes in women routinely remain active, at least partly (Willard 2005; Graves, 2006). This figure can reach up to 25 percent of the X-inactivated chromosome in some women. These data suggest that about 200 genes may still remain functional in the inactivated chromosome. The implication of such a large number of functional genes in the inactive X chromosome in females is not clear at this time. Scientists speculate that this could attribute to the biological differences between the males and females. It could also be attributed to the differences in responses to drugs and susceptibility to some diseases in females. Considerable variations in



the gene activation pattern from woman to woman also provide evidence that the women as a group may be more variable than men.

More interestingly, studies have suggested that the genes that escape X inactivation in females also have conserved Y cousins (or homologs) (Willard 2005; Graves, 2006 and the included citations). The homologs on the Y appear functionally interchangeable with their cousins on the X. Several Y genes that have decayed, or whose function has become limited, still have X homologs that escape X inactivation. But no cases are known in which a gene is subject to X inactivation yet has a Y homolog that remains conserved in structure and widely expressed. Biologists conclude that the Y degeneration preceded the expansion of X inactivation. In other words, the decay of genes on the Y drove the acquisition of X inactivation. The detail mechanism regarding how, when, and in what species such mechanism could first originate is currently unknown.

Benefit of Y chromosome

The HGP data show one benefits of Y chromosome in that the genes on the part of the Y chromosome that do not recombine with X will be passed from father to son, down a paternal lineage, and will never be found in females. For example, the genes required for male fertility are found in the non-recombining regions of the Y, and are not present on X (Ali and Hasnain, 2003). The lack of recombination means that the entire non-recombining portion of the Y is passed intact from father to son. A male shares the same Y chromosome with his father, paternal grandfather, paternal great-grandfather, and so on. Because these regions do not recombine they change very slowly, so they may be useful in identifying stable paternal lineages over thousands of years.

X-O system

Some animals employ a different variant of X-Y system for their sex determination. For example, grasshoppers, roaches, and other insects use X-O system to determine the sex of an individual. Adult males lack a Y sex chromosome and have only an X chromosome. They produce sperm cells that contain either an X chromosome or no



sex chromosome, which is designated as O. The females are XX and produce egg cells that contain an X chromosome. If an X sperm cell fertilizes an egg, the resulting zygote will be XX or female. If a sperm cell containing no sex chromosome fertilizes an egg, the resulting zygote will be XO or male. It has already been mentioned that the Thauban hadith has originally been mentioned only for human situation. However, it would not be wrong to infer that the Thauban hadith could also be valid not only for most mammals, but also for the X-O system animals since it is the male substance that determine sex in these animals.

Z-W system

Many organisms employ other mechanisms rather than the X-Y system. Birds, insects, and some species of fish determine their gender using the Z-W system (Smith and Sinclair, 2004). In these animals, it is the female gamete that determines the sex of an individual. Female gametes can either contain a Z chromosome or a W chromosome. Male gametes contain only the Z chromosome. Females of these species are ZW and males are ZZ.

No Sex Chromosome System

Some animals including most kinds of wasps, bees, and ants do not posses any sex chromosomes. In these species, fertilization determines gender. If an egg becomes fertilized it would develop into a female. A non-fertilized egg may develop into a male by a process called parthenogenesis (Neiman, 2004; Sarre et al., 2004). The female contains two sets of chromosomes, while the male contains only one set. Many dioecious plants, including papaya and kiwi fruit, do not posses any sex chromosome either; rather, an autosomal gene determines the sex in these species (Liu et al., 2004 and the included citations). It is obvious that the Thauban hadith would not be valid either for the Z-W Systems or for the no-sex-chromosome-system species.



Other Scientific Theories on the Origin of Males and Females

In the literatures of biological sciences, theories and hypotheses are plentiful that attempt to explain questions related to origin of males and females. Some theories draw conclusions based on different other factors rather than the HGP data. Of particular importance is the theory called--the two-fold cost of sex (Agrawal, 2001). According to this theory, the evolution and continuity of sexual reproduction does not fit in nature. This is because organisms, who multiply asexually, have a two-fold fitness advantage over their sexual counterparts since every individual has the potential to reproduce. As a result, these organisms should rapidly outnumber a sexually reproducing population. However, "the theory of ecological cost of sex" advocates that the sexual reproduction prevails in nature because the earth possesses certain set-conditions that limit the success of asexual reproduction (Doncaster et al., 2000).

It is no wonder that, currently, there exists more than 20 hypotheses that give different explanations to support the origin of males and females in nature (reviewed in Doncaster et al., 2000; West and Peters, 2002; Agrawal, 2001; Ridley, 2003). A closer examination of these hypotheses shows that there are tendencies among researchers to justify the ecological, adaptive, fight against disease, or other factors as key regulators in the origin of sex. All these hypotheses have limitations and the biologists face tremendous hurdles to provide satisfactory biochemical answers for many of the currently unresolved questions. For higher organisms including the humans, simpler questions like how the first fully functional female and the first fully functional male originated simultaneously remains to be a great puzzle. Explaining the origin of sex by a unified theme has, so far, been unsuccessful. This is because, according to scientific postulates, millions of different species had lived on earth in the past where sex appears to have evolved differently! In the light of such scientific understanding, one can easily conclude that the males and females probably evolved in a species-specific manner, contradictory to any gradual, step-by-step evolution.



Quranic Teaching on Male-Female Creation

In verse 36:36, Allah (SWT) **swears by his glory** that the males and females, among all the known and unknown species (to mankind), had been created solely by Allah (SWT). Further support of verse 36:36 can be drawn from many other Quranic verses including,

2:164, 4:1, 7:189, 13:3, 16:8, 16:72, 30:20-21, 39:6, 42:11, 43:12, 45:4, 51:49, 53:45-46, 75:39, 78:8, and 92:3. Surprisingly, the explanation (tafsir) of verse 36:36 seems to be limited in contemporary Islamic literatures; interpretation of verse 36:36 from the standpoint of current scientific understanding is also lacking. The limited tafsir on verse 36:36 seems unusual when compared with the lengthy narrations available on verse 17:1 (see appendix); both verses begin similarly with the statement "glory be to Him." Even the Thauban hadith appears to have been ignored rather than explaining in a more meaningful scientific way. An extremely slow pace of scientific understanding on the origin of males and females during the last fourteen hundred years may be one reason why explanations on verse 36:36 and on Thauban hadith have not been attempted. This looks amazing if one realizes that the basic explanation on male-female creations (Thauban hadith) had already been existed in different ahadith during all these years!

Integrating Islam and Science: Verse 36:36 as an Example

Limited interpretation of verse 36:36 and the related ahadith make it difficult to integrate the current scientific understanding with the revealed knowledge. To explore whether the Islamic knowledge of male-female creations is in harmony with today's scientific understanding, one needs to utilize evidences from latest scientific researches that records the nature of grandeur-scale problems in the origin of sex. The current analysis documents those latest scientific findings (more so the HGP data) to show that the HGP data are being exploited by the biologists in a different manner; biologists are combining HGP data with their proposed accidental mutation or chance factor events to rationalize the natural evolution of X-Y chromosome rather than creation by Allah (SWT). In contrast, this analysis shows that the HGP data, without counting the human chance



factor-related interpretation, should be in harmony with the overall theme of verse 36:36. This analysis thus suggests that the fundamental scientific researches rather help understanding the greater meaning of revealed knowledge such as that mentioned in verse 36:36.

In this analysis, the verse 36:36 has been interpreted using many relevant Quranic verses and ahadith; this is because, science alone can not provide the meaning of quranic verses. The interpretation of natural phenomena available in science is always changing while Qur'an describes the everlasting truth of nature. These additional Quranic verses should, therefore, provide the basic, fundamental meaning of verse 36:36. It is not known whether the verse 36:36 carries any special meaning as the verse number is identical with the chapter number. Allah (SWT) knows best if positioning such a statement where the verse and the chapter are identified by the same number reflects any special sign from Him. The Holy Qur'an posses many such signs. For example, Surat Al-Baqarah consists of 286 verses. The exact middle verse (that is, verse 143) states that, "And so We have made you a median nation, in order that you will be a witness above the people, and that the Messenger be a witness above you. We did not change the direction that you were facing except that We might know who followed the Messenger from him who turned on both his heels. Though it was a hardship except for those whom Allah has guided. But Allah would never waste your faith. Indeed, Allah is Gentle with people, the Most Merciful."

وَكَذَلكَ حَعَلْنَاكُمْ أُمَّةً وَسَطًا لِّتَكُونُواْ شُهَدَاء عَلَى النَّاسِ وَيَكُونَ الرَّسُولُ عَلَيْكُمْ شَهِيدًا وَمَا جَعَلْنَا الْقِبْلَةَ الَّتِي كُنتَ عَلَيْهَا إِلاَّ لَنَعْلَمَ مَن يَتَّبِعُ الرَّسُولَ ممَّن يَنقَلِبُ عَلَى عَقبَيْهِ وَإِن كَانَتْ لَكَبِيرَةً إِلاَّ عَلَى الَّذِينَ هَدَى اللّهُ وَمَا كَانَ اللّهُ لِيُضِيعَ إِيمَانَكُمْ إِنَّ اللّهَ بِالنَّاسِ لَرَؤُوفَ رَّحِيمٌ

Thus, the scholars in Islam believe that the importance of **middle path** in human dealings have been specifically emphasized by placing the verse exactly in the middle position of Surat Al-Baqarah.



Conclusion

During the last three and a half billions years in the history of life, countless forms of biological organisms had evolved and perished. Of the small percentage of species that exist today, less than ten percent has so far been described in scientific literatures. Data gathered from these known species show that the majority of the sexually reproducing species employ such widely variable genetic mechanisms that a clear-cut evolutionary scheme of sex can not be predicted. Understanding the origin of males and females among the known species, thus, seems to be a grandeur-scale problem. Gathering scientific data on the origin of males and females among millions of existing species and among the extremely large number of unknown species appears to be an infinitely huge problem! Such a humongous complexity appears to have been acknowledged in the Qur'anic verse 36:36 by using a powerful statement "glory be to Him" in the beginning of the verse. However, only Allah (SWT) knows best the magnitude of this infinitely grandeur-scale problem! The present analysis has primarily been aimed at utilizing the contemporary HGP data and other findings to get a more meaningful interpretation of powerful Qur'anic verses like the verse 36:36. This analysis may, therefore, be of value to those academicians who like to Islamize their science curriculum or vice versa.

References

- Agrawal, A. F. (2001). Sexual selection and the maintenance of sexual reproduction. *Nature* **411**, 692 695.
- Ali, S. and Hasnain, S. E. (2003). Genomics of the human Ychromosome: 1. Association with male infertility. Gene, 321, 25-37.
- Barton, N. H. and Charlesworth, B. (1998). Why Sex and Recombination? Science, 281(5385), 1986 1990.
- Birky, C. W. (2005). Sex: Is Giardia Doing It in the Dark? Current Biology, 15(2), R56-R58.
- Brasier, M. D., Green, O., R., Lindsay, J. F., McLoughlin, N., Steele, A., and Stoakes, C. (2005). Critical testing of Earth's oldest putative fossil assemblage from the 3.5 Ga Apex chert, Chinaman Creek, Western Australia. Precambrian Research, 140(1-2), 55-102.



- Brent, D. G. (1991). *The Age of the Earth*: Stanford, Calif., Stanford University Press, 474 p
- Bui E.T.N., Bradley P. J., and Johnson P. J. (1996). A common evolutionary origin for mitochondria and hydrogenosomes. Proceedings of the National Academy of Sciences USA, 93(18), 9651-9656.
- <u>Charlesworth, B.</u> (1991). The evolution of sex chromosomes. *Science*, 251 (4997), 1030-1033.
- Charlesworth, D. and Charlesworth, B. (2005). Sex Chromosomes: Evolution of the Weird and Wonderful. Current Biology, 15(4), R129-R131.
- Coleman, D.C. and Whitman, W. B. (2005). Linking species richness, biodiversity and ecosystem function in soil systems. Pedobiologia, 49(6), 479-497.
- Davison, J. (1999). Genetic Exchange between Bacteria in the Environment. Plasmid, 42(2), 73-91.
- Doncaster, C. P., Pound, G. E., and Cox, S. J. (2000). The ecological cost of sex. Nature 404, 281-285.
- Graves, J. A. M., Koina, E., and Sankovic, N. (2006). How the gene content of human sex chromosomes evolved. Current Opinion in Genetics & Development (article in Press)
- Graves, J. A. M. (2006). Sex Chromosome Specialization and Degeneration in Mammals.
- Cell, 124(5), 901-914.
- Graves, J. A. M. (2002). Sex chromosomes and sex determination in weird mammals. Cytogenetics and Genome Research, 96: 161–168.
- Green, R. F. and Noakes, D. L. G. (1995). Is a little bit of sex as good as a lot? Journal of Theoretical Biology, 174(1), 87-96.
- <u>Hoagland, K. E.</u> (1978). Protandry and the evolution of environmentally mediated sex change: A study of the Mollusca. *Malacologia*, 17, 365-391.
- Idler, D. R., Reinboth, R., Walsh, J. M., and Truscott, B. (1976). A comparison of 11-hydroxytestosterone and 11-ketotestosterone in blood of ambisexual and gonochoristic teleosts. General and Comparative Endocrinology, 30(4), 517-521.
- Jablonka, E. (2004). The evolution of the peculiarities of mammalian sex chromosomes: An epigenetic view. Bio-Essays, 26(12), 1327-1332.



- Jaccarini, V., Agius, L., Schembri, P. J., and Rizzo, M. (1983). Sex determination and larval sexual interaction in Bonellia viridis Rolando (Echiura: Bonelliidae). Journal of Experimental Marine Biology and Ecology, 66(1), 25-40.
- Kohn, M., Kehrer-Sawatzki, H., Vogel, W., Graves, J. A. M., and Hameister, H. (2004).
- Wide genome comparisons reveal the origins of the human X chromosome. Trends in Genetics, 20(12), 598-603.
- Kurtz, J. (2003). Sex, parasites and resistance An evolutionary approach. Zoology, 106(4), 327-339.
- Lahn, B. T. and Page, D. C. (1999). Four evolutionary strata on the human X chromosome. Science, 286(5441):877-9.
- Lazcano, A., OróStanley, J., and Miller, L. (1983). Primitive Earth environments: organic syntheses and the origin and early evolution of life. Precambrian Research, 20(2-4), 259-282.
- Liu, Z., Moore, P. H., Ma, H., Ackerman, C. M., Ragiba, M., Pearl, H. M., Kim, M. S., Charlton, J. W., Yu, Q., and Stiles, J. I. et al. (2004). A primitive Y chromosome in Papaya marks the beginning of sex chromosome evolution. Nature, 427, 348-352.
- Lobo, M. P. and Onody, R. N. (2006). Ploidy, sex and crossing over in an evolutionary aging model. Physica A: Statistical Mechanics and its Applications, 361(1), 239-249.
- Marais, G. (2003). Biased gene conversion: Implications for genome and sex evolution.
- Trends in Genetics, 19(6), 330-338.
- McCall, G. J. H. (2006). The Vendian (Ediacaran) in the geological record: Enigmas in geology's prelude to the Cambrian explosion. Earth-Science Reviews, (in Press).
- Michod, R. E. (1998). Origin of sex for error repair: III. Selfish sex. Theoretical Population Biology, 53(1), 60-74.
- Neiman, M. (2004). Physiological dependence on copulation in parthenogenetic females can reduce the cost of sex. Animal Behaviour, 67(5), 811-822.
- Odegaard, F. (2000). How many species of arthropods? Erwin's estimate revised
- Biological Journal of the Linnean Society, 71(4), 583-597.
- Pedrós-Alió, C. (2006). Marine microbial diversity: can it be determined? Trends in Microbiology (article in Press).



- Ramesh, M. A., Malik, S-B., and Logsdon, J. M. (2005). A Phylogenomic Inventory of Meiotic Genes: Evidence for Sex in Giardia and an Early Eukaryotic Origin of Meiosis. Current Biology, 15(2), 185-191.
- Ray, P.S. and Fox, P.L. (2005). Equality of the sexes: Found in translation. Cell, 122(4), 492-493.
- Ridley, M. (2003). The Red Queen: Sex and the Evolution of Human Nature. Harper Perennial Publishers, ISBN: 0060556579.
 Riley, M. et al. (2006). *Escherichia coli* K-12: a cooperatively developed annotation snapshot—2005. Nucleic Acids Research, 34(1), 1-9.
- Sarre, S. D., Georges, A., and Quinn, A. (2004). The ends of a continuum: Genetic and temperature-dependent sex determination in reptiles. Bio-Essays, 26(5), 639-645.
- Smith, C. A. and Sinclair, A. H. (2004). Sex determination: Insights from the chicken. <u>Bio-Essays</u>, 26(2), 120-132.
- Valley, C. M. and Willard, H. F. (2006). Genomic and epigenomic approaches to the study of X chromosome inactivation. Current Opinion in Genetics & Development, (in Press).
- Vyskot, B. and Hobza, R. (2005). Gender in plants: sex chromosomes are emerging from the fog. Trends in Genetics, 20(9), 432-438.
- Waters, P. D., Duffy, B., Frost, C. J., Delbridge, M. L., and Graves, J. A. M. (2001). The human Y chromosome derives largely from a single autosomal region added to the sex chromosomes 80-130 million years ago. Cytogenetics and Cell Genetics, 92 (1-2), 74-79.
- Waxman, D. and Peck, J.R. (1999). Sex and adaptation in a changing environment. Genetics, 153 (2), 1041-1053.
- West, S. A., and Peters, A. D. (2002). Evolution: Paying for sex is not easy. Nature 407, 962.
- Willard, C. L. (2005). X-inactivation profile reveals extensive variability in X-linked gene expression in females. Nature 434(7031), 400-4.
- Yoshinaga, T., Kaneko, G., Kinoshita, S., Tsukamoto, K., and Watabe, S. (2003). The molecular mechanisms of life history alterations in a rotifer: a novel approach in population dynamics. Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology, 136(4), 715-722.



- Zeyl, C. (2004). Experimental studies of ploidy evolution in yeast. FEMS Microbiology Letters, 233(2), 187-192.
- Zhang, Y (2002). The age and accretion of the earth. Earth-Science Reviews, 59(1-4), 235-263.

Appendix

Verse 36:36 contains a very serious statement where Allah (SWT) swears by His glory that He has created the males, females, and all the creatures that mankind may not know; yet, adequate, in-depth interpretations are lacking on this verse that could explain such importance. Of course, it is known that Allah (SWT) has emphasized similarly in the beginning of verse 17:1; and the importance of such beginning statement is well understood from the unusual nature of the event (journey) stated in verse 17:1. From this point of view, one may rationally look for events of humongous nature that may also have been described in verse 36:36. Unfortunately, such interpretation appears to be lacking in Islamic literatures. More surprisingly, it seems that the interpretation may have to come from science!

It also seems that the need for such interpretation did not arise in the past because scientific understanding on the origin of males and females were not clear until very recently. With the completion of human genome project (HGP), that scenario has changed drastically. Today, mankind possesses powerful scientific data and many have already started to exploit these HGP data in a way that radically challenges the fundamental truth described in Qur'anic verse 36:36. In light of these newer scientific challenges, what one needs is to become familiar with a sound understanding of this verse by carefully examining the truth described in science and in Qur'an. In the foregoing discussion, the author intended to emphasize that the serious statement carrying by verse 36:36 could readily be understood when one realizes the grandeur scale scientific problems involved in delineating the mechanism of origin of sex. This analysis, therefore, has attempted to emphasize that the verse 36:36 may describe events of special nature; such understanding directly comes from science and somewhat indirectly from verse 17:1. Indirectly, because the verse 17:1 similarly starts with the statement "glory be to Him" and for which lengthy narrations are available. The verse and its narrations



have been reproduced below to further emphasize the need for adequate interpretation of verse 36:36.

Verse 17:1

<u>Glory be to Him</u> Who took His servant for a Journey by Night from Al-Masjid Al-Haram to Al-Masjid Al-Aqsa, the neighborhood whereof We have blessed, in order that We might show him of Our Ayat. Verily, He is the All-Hearer, the All-Seer.

سُبْحَانَ الَّذِي أَسْرَى بِعَبْدِهِ لَيْلاً مِّنَ الْمَسْجِدِ الْحَرَامِ إِلَى الْمَسْجِدِ الأَقْصَى الَّذِي بَارَكْنَا حَوْلَهُ لِنُرِيَهُ مِنْ آياتنا إنَّهُ هُوَ السَّميعُ البَصيرُ

Interpretation of verse 17:1 by Anas bin Malik

Imam Ahmad reported from Anas bin Malik that the Messenger of Allah said:

«أُتِيتُ بِالْبُرَاق وَهُو دَابَّة أَبْيَضُ فَوْقَ الْحِمَارِ وَدُونَ الْبُعْلِ، يَضَعُ حَافِرَهُ عَنْدَ مُنْتَهَى طَرَفه، فَرَكَبْتُهُ فَسَارَ بِي حَتَّى أَتَيْتُ بَيْتَ الْمُقَاسِ، فَرَبَطْتُ الدَّابَّة بِالْحَلَقَة الَّتِي يَرْبِطُ فِيهَا الْأَنْبِيَاءَ، ثُمَّ دَحَلْتُ فَصَلَّيْتُ فِيهَ رَكْعَتَيْنِ نُّمَّ حَرَّحْتُ فَآتَانِي جَبْرِيلُ بِإِنَاء مِنْ حَمْرِ وَإِنَاء مِنْ لَبَنِ، فَاحْتَرَتُ اللَّبَنَ فَقَالَ جَبْرِيلُ. أَصَبْتَ الْفُطْرَةَ. قَالَ: ثُمَّ عُرَج بِي إلَى السَّمَاء الدُنْيَا فَاسَتَفْتَحَ جَبْرِيلُ فَقَتِلَ لَهُ: مَنْ أَنْتَ؟ قَالَ: جَرْبِيلُ. قَيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ. قِبَلَ وَقَدْ أَرْسِلَ إِلَيْهِ؟ قَالَ: قَدْ أُرْسلَ إِلَيْهُ. فَفْتَحَ لَنَا فَإِذَا أَنَا بَادَمَ فَرَحَّبَ بِي وَدَعَا لِي بِخَيْرِ، ثُمَّ عُرِجَ بِنَا إلَى السَّمَاء وَقَدْ أَرْسِلَ إِلَيْهِ؟ قَالَ: قَدْ أُرْسلَ إِلَيْه. فَفْتَحَ لَنَا فَإِذَا أَنَا بَادَى الْحَالَة عَلَى وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ. قِبَلَ وَقَدَ أُرْسلَ إِلَيْهِ؟ قَالَ: قَدْ أُرْسلَ إِلَيْه. فَفْتَحَ لَنَا فَإِذَا أَنَا بِنَنِي الْحَمَابِ وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ فَيلَ إِلَى السَّمَاء وَقَدَ أَرْسِلَ إِلَيْهِ فَقَلَنَهُ فَفَيْتَعَ عَنْتَ أَنْتَ؟ قَالَ: جَبْرِيلُ فَقِيلَ لَهُ. فَفَيَتَحَ قَالَ: فَي مَعَى قَالَة فَاسَتَفْتَحَ جَبْ فَيلَة فَاسَتُفَتَحَ عَنْ أَنْتَ وَقَدَ أُرْسِلَ إِلَيْهِ؟ إلَيْه عَلَى قَالَ: قَدْ أُرْسلَ إِلَيْه. فَفْتَحَ لَنَا فَذَا أَنَا بِنِنِي الْحَالَة يَقَالَ: عَنْ مَعْكَ؟ قَالَ: قَدَا مُعَنْ مُنْ أَنْتَ عَلَى السَمَاء السَّمَاء التَالَيْهِ فَاسَتَفَتَحَ جَبْزِيلُ فَقَيلَ لَهُ: مَنْ أَنْتَ؟ قَالَتَنْهُ فَاسَتَفْتَحَ عَلَى فَعْذَا أَنْ بِي فَوَمَنْ مَعَكَ؟ إلَنْ عُنْتَ قَالَ: قَدْ أُرْسلَ إلَيْه. فَفْتَحَ لَنَا فَقَدْ أَنْ عَنْنَ أَنْتَ عَنْ عَنْ فَقَالَ عَنْ عَنْ عَنْ عَالَة عَنْ عَنْ قَدَا أَنَا بِي فَعَنْ فَقَالَ عَالَة فَقَالَ الْسَائِنَة فَا مُنْعَلَى فَقَلَ عَالَا اللَهُ عَالَة فَقَالَ: فَعَنْ فَقَلَ عَنْ قَالَا عَنْ عَنْ مَعْتَى فَقَالَ عَنْ عَابَ عَنْ عَالَ: وَقَدْ أُنْ عَنْ عَانَا عَنْ عَلَى السَمَاء الْنَائِنَا فَا مُنْعَالًا فَقَتَى اللَّنْ مَا عَالَا فَا مَنْ عَائَةُ عَالَا الَنَا عَالَا عَا اللَّيْ فَ

(Al-Buraq was brought to me, and it was a white animal bigger than a donkey and smaller than a mule. One stride of this creature covered a distance as far as it could see. I rode on it and it took me to Bayt Al-Maqdis (Jerusalem), where I tethered it at the hitching post of the Prophets. Then I entered and prayed two Rak`ahs there, and came out. Jibril brought me a vessel of wine and a vessel of milk, and I chose the milk. Jibril said: `You have chosen the Fitrah (natural instinct).' Then I was taken up to the first heaven and Jibril asked for it to be opened. It was said, `Who are you' He said, `Jibril.' It was said,



'Who is with you' He said, 'Muhammad.' It was asked, 'Has his Mission started' He said, 'His Mission has started.' So it was opened for us, and there I saw Adam, who welcomed me and prayed for good for me. Then I was taken up to the second heaven and Jibril asked for it to be opened. It was said, `Who are you' He said, `Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was asked, 'Has his Mission started' He said, 'His Mission has started.' So it was opened for us, and there I saw the two maternal cousins, Yahya and `Isa, who welcomed me and prayed for good for me. Then I was taken up to the third heaven and Jibril asked for it to be opened. It was said, `Who are you' He said, 'Jibril.' It was said, 'Who is with you' He said, `Muhammad.' It was asked, `Has his Mission started' He said, `His Mission has started.' So it was opened for us, and there I saw Yusuf, who had been given the beautiful half. He welcomed me and prayed for good for me. Then I was taken up to the fourth heaven and Jibril asked for it to be opened. It was said, 'Who are you' He said, 'Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was asked, 'Has his Mission started' He said, 'His Mission has started.' So it was opened for us, and there I saw Idris, who welcomed me and prayed for good for me. Then (the Prophet) said: Allah says:

[وَرَفَعْنَاهُ مَكَاناً عَليّاً]

(And We raised him to a high station) (19:57). ثُمَّ عُرِجَ بَنَا إِلَى السَّمَاء الْحَامسَة فَاسْتُفْتَحَ جبْرِيلُ فَقِيلَ: مَنْ أَنْتَ؟ قَالَ جبْرِيلُ قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ قِيلَ: وَقَدْ أُرْسِلَ إِلَيْه؟ قَالَ: قَدْ بُعَتَ إِلَيْه. فَفُتَحَ لَنَا فَإِذَا آنَا بِهَارُونَ فَرَحَبَ بِي وَدَعَا لِي بِخَيْر ثُمَّ عُرِجَ بَنَا إِلَى السَّمَاء السَّادَسَة فَاسْتَفْتَحَ جبْرِيلُ فَقَيلَ مَنْ أَنْتَ؟ قَالَ: حبْرِيلُ قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ قَيلَ: وَقَدْ بَعَتَ إِلَيْه؟ قَالَ :قَدْ بُعَتَ إِلَيْه. فَفُتَحَ لَنَا فَقِدَا مَنْ أَنْتَ؟ قَالَ: حبْرِيلُ قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ قَيلَ: وَقَدْ بَعَتَ إِلَيْه؟ قَالَ :قَدْ بُعَتَ إِلَيْه. فَفُتَحَ لَنَا فَقَيلَ مَنْ أَنْتَ؟ قَالَ: حبْرِيلُ قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ قَيلَ: وَقَدْ السَّمَاء السَّابِعَة فَاسْتَفْتَحَ جبْرِيلُ فَقَيلَ مَنْ أَنْتَ؟ قَالَ: حبْرِيلُ قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ قَيلَ: وَقَدْ بُعَتَ إِلَيْه؟ عَلَيْ السَّمَاء السَّابِعَة فَاسْتَفْتَحَ جبْرِيلُ فَقَيلَ مَنْ أَنْتَ؟ قَالَ: حبْرِيلُ قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ قَيلَ: وَقَدْ بُعَتَ إَلَيْه؟ عَلَيْ السَّمَاء السَّابِعَة فَاسْتَفْتَحَ جبْرِيلُ فَقَيلَ مَنْ أَنْتَ؟ عَلَى عَلَى وَمَنْ مَعَكَ؟ قَالَ : فَلَنْ بُعَتَ إِلَيْه. فَالَ : عَنْ يَعْتَى الْمَعْفَى فَالَا اللَّا اللَّعْنَ عُعَيْ أَنْ عَالَة عَالَا إِنْهُ عَنْ عَالَ اللَّالِيه؟ كُلُّ يَوْم سَنْتَنَد إِلَى الْبَيْتِ الْمَعْمَى فَيْنَا أَنَا بِإِنْهُ الللَّالَمُ فَقَالَ اللَّالِي فَالَا عُنَا اللَّا لِنَعْلَه، وَإِذَا عَلَى مُوسَى فَقَالَ : فَالَ اللَّهُ عَلَى مَلَكَ عُودَا لَنْ عَالَى اللَّا لَتَعْتَى فَيْ فَيْ عَنْ عَنْ عَالَ عَالَى عَالَ الْعَنَا إِلَى الْعَنْتَ عَلَى مَا عَنْ يَعْتَى فَقَالَ الْعَالَة الْعَالَا عَالَ الْعَالَ الْعَالَى الْعَرَا الْعَالَة الْعَمَ مُنْ عَلَى الْعَالَى الْعَالَى الْعَالَة الْعَالَة عَلَى الْعَالِي الْعَالَة الْتَعْتَى فَا عَالَهُ الْعَالَى الْعَالَ الْعَلَى الْعَلَى الْعَلَى الْعَالَ الْعَا مَنْ عُنْ عَالَى الْعَالِ الْعَالَ الْعَالَ الْعَا إِ

§ 314

حَطَّ عَنِّي حَمْسًا فَقَالَ: إِنَّ أُمَّتَكَ لَا تُطِيقُ ذَلِكَ فَارْجِعْ إِلَى رَبِّكَ فَاسْأَلْهُ التَّحْفيفَ لِأُمَّتَكَ، قَالَ: فَلَمْ أَزَلْ أَرْجِعُ بَيْنَ رَبِّي وَبَيْنَ مُوسَى وَيَحُطُّ عَنِّي حَمْسًا حَمْسًا حَتَّى قَالَ: يَا مُحَمَّدُ هُنَّ حَمْسُ صَلَوَات في كُلِّ يَوْمٍ وَلَيْلَة بِكُلِّ صَلَاة عَشْرٌ، فَتَلْكَ حَمْسُونَ صَلَاةً وَمَنْ هَمَّ بِحَسَنَة فَلَمْ يَعْمَلُهَا كُتِبَتْ لَهُ حَسَنَةً، فَإِنْ عَمَلُهَا كُتَبَتْ عَشْرًا، وَمَنْ هَمَّ سَيِّيَةَ فَلَمْ يَعْمَلُهَا لَمْ تُكْتَبْ شَيْئًا، فَإِنْ عَمَلَهَا كُتِبَتْ سَيِّئَةً وَاحدَةً، فَنَزَلَتُ حَتَّى الْتَعْفِيفَ لِأَنَّهُ لَعُمْرًا، فَأَخْبَرْتُهُ، فَقَالَ: ارْجِعْ إِلَى رَبِّكَ فَاسْأَلْهُ التَّحْفِيفَ لَأُمَّتِكَ فَإِنَّ

[Then he resumed his narrative:] (Then I was taken up to the fifth heaven and Jibril asked for it to be opened. It was said, 'Who are you' He said, 'Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was asked, 'Has his Mission started' He said, 'His Mission has started.' So it was opened for us, and there I saw Harun, who welcomed me and prayed for good for me. Then I was taken up to the sixth heaven and Jibril asked for it to be opened. It was said, 'Who are you' He said, 'Jibril. It was said, 'Who is with you' He said, 'Muhammad.' It was asked, 'Has his Mission started' He said, 'His Mission has started.' So it was opened for us, and there I saw Musa, who welcomed me and prayed for good for me. Then I was taken up to the seventh heaven and Jibril asked for it to be opened. It was said, 'Who are you' He said, 'Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was asked, 'Has his Mission started' He said, 'His Mission has started.' So it was opened for us, and there I saw Ibrahim, who was leaning back against the Much-Frequented House (Al-Bayt Al-Ma'mur). Every day seventy thousand angels enter it, and then they never come back to it again. Then I was taken to Sidrat Al-Muntaha (the Lote tree beyond which none may pass), and its leaves were like the leaves [ears] of elephants and its fruits were like jugs, and when it was veiled with whatever it was veiled with by the command of Allah, it changed, and none of the creatures of Allah can describe it because it is so beautiful. Then Allah revealed that which He revealed to me. He enjoined on me fifty prayers every day and night. I came down until I reached Musa, and he said, 'What did your Lord enjoin on your Ummah' I said, 'Fifty prayers everyday and night.' He said, 'Go back to your Lord and ask Him to reduce (the burden) for your Ummah, for your Ummah will not be able to do that. I tested the Children of Israel and found out how they were.' So I went back to my Lord and said, `O Lord, reduce (the burden) for my Ummah for they will never be able to do that.' So He reduced it by



five. I came back down until I met Musa and he asked me, 'What did you do' I said, ` (My Lord) reduced (my burden) by five.' He said, `Go back to your Lord and ask Him to reduce (the burden) for your Ummah.' I kept going back between my Lord and Musa, and (my Lord) reduced it by five each time, until He said, `O Muhammad, these are five prayers every day and night, and for every prayer there is (the reward of) ten, so they are (like) fifty prayers. Whoever wants to do something good then does not do it, one good deed will be recorded for him, and if he does it, ten good deeds will be recorded for him. Whoever wants to do something evil and does not do it, no evil deed will be recorded for him, and if he does it, one evil deed will be recorded for him.' I came down until I reached Musa, and told him about this. He said: `Go back to your Lord and ask him to reduce (the burden) for your Ummah, for they will never be able to do that.' I had kept going back to my Lord until I felt too shy.) This version was also recorded by Muslim. Imam Ahmad recorded Anas saying that Al-Buraq was brought to the Prophet on the Night of the Isra' with his saddle and reins ready for riding. The animal shied, and Jibril said to him: "Why are you doing this By Allah, no one has ever ridden you who is more honored by Allah than him." At this, Al-Buraq started to sweat. This was also recorded by At-Tirmidhi, who said it is Gharib. Ahmad also recorded that Anas said: "The Messenger of Allah said: «لَمَّا عَرَجَ بِي رَبِّي عَزَّ وَجَلَّ مَرَرْتُ بِقَوْمٍ لَهُمْ أَظْفَارٌ مِنْ نُحَاسٍ يَخْمِشُونَ بِهَا وُجُوهَهُمْ وَصُدُورَهُمْ، فَقُلْتُ: مَنْ هِؤُلَاء يَا جبْرِيلُ؟ قَالَ: هَؤُلَاء الَّذِينَ يَأْكُلُونَ لُحُومَ النَّاسِ وَيَقَعُونَ في أَعْرَاضَهِم»

(When I was taken up to my Lord (during Al-Mi'raj), I passed by people who had nails of copper with which they were scratching their faces and chests. I asked, `Who are these, O Jibril' He said, `These are those who ate the flesh of the people [i.e., backbiting] and slandered their honor.') This was also recorded by Abu Dawud. Anas also said that the Messenger of Allah said:

«مَرَرْتُ لَيْلَةَ أُسْرِيَ بي عَلَى مُوسَى عَلَيْه السَّلَامُ قَائمًا يُصَلِّي في قَبْرِه»

(On the night when I was taken on my Night Journey (Al-Isra'), I passed by Musa, who was standing, praying in his grave.) This was also recorded by Muslim.



The Report of Anas bin Malik from Malik bin Sa`sa`ah

Imam Ahmad recorded that Anas bin Malik said that Malik bin Sa`sa`ah told him that the Prophet of Allah told them about the night in which he was taken on the Night Journey (Al-Isra'). He said: «بَيْنَمَا أَنَا فِي الْحَطِيمِ وَرَبَّمَا قَالَ قَتَادَةُ: فِي الْحِجْرِ مُضْطَحِعًا إِذْ أَتَانِي آت، فَجَعَلَ يَقُولُ لِصَاحِبِهِ الْأَوْسَطِ بَيْنَ الثَلَائَة قَالَ فَأَتَانِي فَقَدَّ سَمعْتُ قَتَادَةَ يَقُولُ: فَشَقَّ مَا بَيْنَ هَذه إَلَى هَذه»

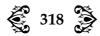
(He took out my heart and brought a golden vessel filled with faith and wisdom. He washed my heart then filled it up and put it back, then a white animal was brought to me that was smaller than a mule and larger than a donkey.) Al-Jarud said, `Was this Al-Buraq, O Abu Hamzah' He said, `Yes, and its stride covered a distance as far as it could see.' The Prophet said:

«فَحُملْتُ عَلَيْه فَانْطَلَقَ بِي جَبْرِيلُ عَلَيْه السَّلَامُ حَتَّى أَتَى بِي إِلَى السَّمَاء الدُّنْيَا فَاسْتَفْتَحَ، فَقِيلَ: مَنْ هَذَا؟ قَالَ: جَبْرِيلُ، قِيلَ: وَمَنْ مَعَكَ؟ قَالَ: مُحَمَّدٌ، قِيلَ: أَوَ قَدْ أُرْسَلَ إِلَيْ؟ قَالَ: نَعَمْ فَقِيلَ: مَرْجَبًا به وَلَنعْم الْمَجِيءُ جَاءَ قَالَ فَفُتِحَ لَنَا فَلَمَّا حَلَّصْتُ فَإِذَا فِيهَا آدَمُ عَلَيه السَّلَامُ، قَالَ: هَذَا أَبُوكَ آدَمُ فَسَلَّمْ عَلَيْه، فَسَلَّمْتَ عَلَيْه فَرَدً السَّلَامُ ثُمَّ قَالَ: مَرْجَبًا بِالْابْنِ الصَّالِحِ وَالنَّتِيِّ الصَّالَح، قَالَ فَلَمًا تَجَاوَزَ^نَهُ بَكَى قِيلَ لَهُ: مَا يُبْكِيكَ؟ قَالَ: أَبْكِي السَّلَامُ ثُمَّ قَالَ: مَرْجَبًا بِالْابْنِ الصَّالِحِ وَالنَّتِيِّ الصَّالَح، قَالَ فَلَمًا تَجَاوَزَنْهُ بَكَى قِيلَ لَهُ: مَا يُبْكِيكَ؟ قَالَ: أَبْكِي لِأَنَّ غُلَامًا بُعثَ بَعْدِي يَدْخُلُ الْجَنَّةَ مَنْ أُمَّتِه أَكْثَرُ مَمَّا يَدْخُلُها مِنْ أُمَّتِي. قَالَ: ثُمَّ صَعدَ حَتَّى أَتَى السَّمَاءَ السَّابِعَة فَالَنْ نُعَلَى بَعْدَ يَعْدِي يَدْخُلُ الْجَنَّةَ مَنْ أُمَّتِه أَكْثَرُ مَمَّا يَدْخُلُها مِنْ أُمَّتِي. قَالَ: ثُمَ مُعَدَا عَنَى فَالَدَ عَمْ، قَالَ عُلَمًا بُعثَنَي قَالَ: ثُمَّ صَعدَ حَتَى أَنَ السَّمَاء قَالَ: مُحَمَّدُ، قِيلَ: مَنْ مَعَلَى فَتَلَ: غَمْ، السَّابِعَة فَالَ: ثُمَ مُنَى قَالَ: فَعَلَى مَعْدَا؟ قَالَ: مَرْحَبًا بِالْابْنِ الصَّاحِ وَالَنبِي الصَّاحِ قَالَ: عُمْ قَانَ مُحَمَّدُ، قِيلَ: مَنْ مَعْدَا إِنْهُ عَالَى عَمْ أَنَى عَمْ قَالَ: مُحَمَّدُهُ اللَّهُ عَلَى السَّامَة قَالَ: فَنَهُ فَرَدً السَّلَمَ، ثُمَ وُفَتَلَ: هَنَا أَنْ مُعَنَى قَالَ: مَعْرَبُ فَاللَهُ فَقَالَ: عَمْ وَا سَدْرَةُ الْمُنْتَهَى فَيَلُه عَلَنَهُ، فَالَهُ عَلَى عَلَى عُمَنَ عَلَى فَنَا الْمُتَعْتَى وَالَنَا مِنْ عَالَا فَنَا وَالَنُ فَالَنَا فَالَنَا فَنَهُ وَالَنَا وَ قَالَ: سَدْرَةُ الْمُنْتَهَى فَعَالَ: عَمَ أَنْهُ وَعَنَ عُنَ عُنَ عُنَ عُمَ أَنْ عَالَا هَ عَرَهُ فَالَ فَنَعْ فَا لُ سُوادَة مَنْهُ عَلَى الْعَامَانَ وَقَالَ فَتَعْ وَالَنَ عَمْ وَالَا عُمَنَ فَقَالَ فَعَمَا وَ أَنْ فَعَانَ الْنَا عَالَهُ مَا عَالًا مَ

(I was mounted upon it and Jibril brought me to the first heaven, and asked for it to be opened. It was said, `Who is this' He said,



'Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was said, 'Has his Mission started' He said, 'Yes.' It was said, 'Welcome to him, blessed is the one who comes.' So it was opened for us and when I entered, I saw Adam. (Jibril) said, 'This is your father Adam, greet him.' So I greeted him, and he returned the greeting then said, 'Welcome to the righteous son and righteous Prophet.' Then I was taken up to the fifth heaven, and (Jibril) asked for it to be opened. It was said, 'Who is this' He said, 'Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was said, 'Has his Mission started' He said, 'Yes.' It was said, 'Welcome to him, blessed is the one who comes.' So it was opened for us and when I entered, I saw Harun. (Jibril) said, 'This is Harun, greet him.' So I greeted him, and he returned the greeting then said, 'Welcome to the righteous brother and righteous Prophet.' Then I was taken up to the sixth heaven, and (Jibril) asked for it to be opened. It was said, 'Who is this' He said, 'Jibril.' It was said, 'Who is with you' He said, 'Muhammad.' It was said, 'Has his Mission started' He said, 'Yes.' It was said, 'Welcome to him, blessed is the one who comes.' So it was opened for us and when I entered, I saw Musa. (Jibril) said, 'This is Musa, greet him.' So I greeted him, and he returned the greeting then said, 'Welcome to the righteous brother and righteous Prophet.' When I passed by him, he wept, and it was said to him, 'Why are you weeping' He said, 'I am weeping because a young man was sent after me and more people from his Ummah than from mine will enter Paradise.' Then I was taken up to the seventh heaven, and (Jibril) asked for it to be opened. It was said, `Who is this' He said, `Jibril.' It was said, `Who is with you' He said, 'Muhammad'. It was said, 'Has his Mission started' He said, 'Yes.' It was said, 'Welcome to him, blessed is the one who comes.' So it was opened for us and when I entered, I saw Ibrahim. (Jibril) said, `This is Ibrahim, greet him.' So I greeted him, and he returned the greeting then said, 'Welcome to the righteous son and righteous Prophet.' Then I was taken up to Sidrat Al-Muntaha, whose fruits like the clay jugs of Hajar (a region in Arabia) and its leaves were like the ears of elephants. (Jibril) said: `This is Sidrat Al-Muntaha.' And there were four rivers, two hidden and two visible. I said, 'What is this, O Jibril' He said, `The two hidden rivers are rivers in Paradise, and the two visible rivers are the Nile and the Euphrates.' Then I was shown Al-Bayt Al-Ma`mur.) Qatadah said: Al-Hasan told us narrating from Abu Hurayrah that the Prophet saw Al-Bayt Al-Ma`mur. Each day seventy



thousand angels enter it, then they never return from it. Then he continued to narrate the Hadith of Anas;

«ثُمَّ أُتيتُ بإنَاء منْ حَمْر وَإِنَاء منْ لَبَن وَإِنَاء منْنَعسَل. قَالَ فَأَخَذْتُ اللَّبَنَ قَالَ: هَذه الْفطْرَةُ أَنْتَ عَلَيْهَا وَأُمْتُكَ قَالَ ثُمَّ فُرضَتٌ عَلَىَّ الصَّلَاةُ خَمْسَينَ صَلَاةً كُلَّ يَوْم قَالَ فَنَزَلْتُ حَتّى أَتَيْتُ مُوسَى، فَقَالَ: مَا فَرَضَ رَبُّكَ عَلَى أُمَّتِكَ؟ قَالَ: فَقُلْتُ: خَمْسينَ صَلَاةً كُلَّ يَوْم، قَالَ: إَنَّ أُمَّتِكَ لَا تَسْتَطِيعُ خَمْسينَ صَلَاةً وَإِنِّي قَدْ خَبَرْتُ النَّاسَ فَبْلَكَ، وَعَالَجْتُ بَنِي إِسْرَائِيلَ أَشَدَّ الْمُعَالَجَة، فَارْجعْ إِلَى رَبِّكَ فَاسْأَلْهُ التّخفيفَ لأُمَّتكَ قَالَ فَرَجَعْتُ فَوَضَعَ عَنِّي عَشْرًا قَالَ فَرَجَعْتُ إِلَى مُوسَى فَقَالَ: بِمَ أُمرْتَ؟ قُلْتُ: بِأَرْبَعِينَ صَلَاةً كُلَّ يَوْم، قَالَ: إِنَّ أُمَّتَكَ لَا تَسْتَطِيعُ أَرْبَعِينَ صَلَاةً كُلَّ يَوْم، وَإِنِّي قَدْ خَبَرْتُ النَّاسَ قَبْلَكَ وَعَالَجْتُ بَني إسْرائيلَ أَشَدَّ الْمُعَالَجَة،فَارْجعْ إِلَى رَبِّكَ فَاسْأَلُهُ التَّخْفيفَ لَأُمَّتِكَ قَالَ فَرَجَعْتُ فَوَضَعَ عَنِّي عَشْرًا أُخَرَ، فَرَجَعْتُ إِلَى مُوسَى فَقَالَ: بِمَ أُمرْتَ؟ قُلْتُ: بثْلَاثِينَ صَلَاةً، قَالُ: إِنَّ أُمَّتَكَ لَا تَسْتَطِيعُ ثَلَاثِينَ صَلَاةً كُلَّ يَوْم، وَإِنِّي قَدْ خَبَرْتُ النَّاسَ قَبْلَكَ وَعَالَجْتُ بَنِي إِسْرَائيلَ أَشَدَّ الْمُعَالَجَة، فَارْجعْ إِلَى رَبِّكَ فَاسْأَلْهُ التَّحْفيفَ لِأُمَّتكَ قَالَ فَرَجَعْتُ فَوَضَعَ عَنِّي عَشْرًا أُخَرَ، فَرَجَعْتُ إَلَى مُوسَى فَقَالَ: بِمَ أُمرْتَ؟ قُلْتُ: أُمرْتُ بعشْرِينَ صَلَاةً كُلَّ يَوْم، قَالَ: إِنَّ أُمَّتك لَا تستَطيعُ عِشْرِينَ صَلَاةً كُلَّ يَوْم، وَإِنِّي قَدْ خَبَرْتُ النَّاسَ قَبْلَكَ وَعَالَجْتُ بَنِي إِسْرَائِيلَ أَشَدَّ الْمُعَالَجَة، فَارْجعْ إلَى رَبِّكَ فَاسْأَلْهُ التَّخْفيفَ لْأُمَّنِّكَ قَالَ فَرَجَعْتُ فَوَضَعَ عَنِّي عَشْرًا أُحَرَ، فَرَجَعْتُ إِلَى مُوسَى فَقَالَ: بمَ أُمرْتَ؟ فَقُلْتُ: أُمرْتُ بعَشْر صَلُوَات كُلَّ يَوْم، فَقَالَ: إِنَّ أُمَّتَكَ لَا تَسْتَطِيعُ لعَشْر صَلَواتُ كُلَّ يَوْم، وَإِنِّي قَدْ خَبَرْتُ النَّاسَ قَبْلُكَ وَعَالَجْتُ بَني إسْرَائيلُ أَشَدَّ الْمُعَالَجَة، فَارْجعْ إلَى رَبِّكَ فَاسْأَلُهُ التَّخْفيفَ لَأُمَّتَكَ قَالَ فَرَجَعْتُ فأُمرْتُ بخمْس صَلَوات كُلَّ يَوْم، فَرَجَعْتُ إِلَى مُوسَى فَقَالَ: بَمَ أُمرْتَ؟ فَقُلْتُ: أُمرْتُ بِخَمْسَ صَلَواتِ كُلَّ يَوْم، فَقَالَ: إِنَّ أُمَّتَكَ لَا تَسْتَطِيعُ لحُمْس صَلَوات كُلٌّ يَوْم، وَإِنِّي قَدْ حَبَرْتُ النَّاسَ قَبْلَكَ وَعَالَجْتُ بَنِي إِسْرَائِيلَ أَشَدُّ الْمُعَالَجَة، فَارْجعْ إلَى رَبِّكَ فَاسْأَلْهُ التَّخْفيفُ لَأُمَّتِكَ قُالَ قُلْتُ: قَدْ سَأَلْتُ رَبِّي حَتَّى اسْتَحْيَيْتُ، وَلَكَنْ أَرْضَى وَأُسَلَّمُ، فَنَفَذْتُ فَنَادَى مُنَاد: قَدْ أَمْضَيْتُ فَرِيضَتِي وَخَفَّفْتُ عَنْ عبَادِي»

(Then I was brought a vessel of wine, a vessel of milk and a vessel of honey. I chose the milk, and he [Jibril] said, `This is the Fitrah (natural instinct) on which you and your Ummah will be. ' Then the prayer was enjoined upon me, fifty prayers each day. I came down until I reached Musa, who said, `What did your Lord enjoin upon your Ummah' I said, `Fifty prayers each day.' He said, `Your Ummah will not be able to do fifty prayers each day. I tried the people before you, I had to deal with the Children of Israel and it was very difficult for me. Go back to your Lord and ask Him to reduce the burden on your Ummah.' So I went back, and the number was reduced by ten. I came back to Musa and he asked, `What were you commanded to do' I said, `Forty prayers each day.' He said, `Your Ummah will not be able to do forty prayers each day. I tried the people before you, I had to deal with



the Children of Israel and it was very difficult for me. Go back to your Lord and ask Him to reduce the burden on your Ummah.' So I went back, and the number was reduced by ten. I came back to Musa and he asked, 'What were you commanded to do' I said, 'I was commanded to do thirty prayers each day.' He said, `Your Ummah will not be able to do thirty prayers each day. I tried the people before you, I had to deal with the Children of Israel and it was very difficult for me. Go back to your Lord and ask Him to reduce the burden on your Ummah.' So I went back, and the number was reduced by ten. I came back to Musa and he asked, 'What were you commanded to do' I said, 'Twenty prayers each day.' He said, 'Your Ummah will not be able to do twenty prayers each day. I tried the people before you, I had to deal with the Children of Israel and it was very difficult for me. Go back to your Lord and ask Him to reduce the burden on your Ummah.' So I went back, and the number was reduced by ten more. I came back to Musa and he asked, 'What were you commanded to do' I said, 'Ten prayers each day.' He said, 'Your Ummah will not be able to do ten prayers each day. I tried the people before you, I had to deal with the Children of Israel and it was very difficult for me. Go back to your Lord and ask Him to reduce the burden on your Ummah.' So I went back, and I was commanded to do five prayers every day. I came back to Musa and he asked, 'What were you commanded to do' I said, 'Five prayers each day.' He said, 'Your Ummah will not be able to do five prayers each day. I tried the people before you, I had to deal with the Children of Israel and it was very difficult for me. Go back to your Lord and ask Him to reduce the burden on your Ummah.' I said, 'I have asked my Lord until I feel too shy. I accept this and submit to Him.' Then a voice called out: 'My order has been decreed and I have reduced the burden on My servants.') Similar narrations were recorded in the Two Sahihs.

The Report of Anas from Abu Dharr

Al-Bukhari recorded that Anas bin Malik said: Abu Dharr used to tell us that the Messenger of Allah said:

«فُرِجَ عَنْ سَقْف يَيْتِي وَأَنَا بِمَكَّةَ، فَنَزَلَ جَبْرِيلُ فَفَرَجَ صَدْرِي ثُمَّ غَسَلَهُ بِمَاءِ زَمْزَمَ، ثُمَّ حَاءَ بِطَسْت مِنْ ذَهَب مُمْتَلِىء حكْمةً وَإِيمَانًا، فَأَفْرَغُهُ في صَدْرِيَ، ثُمَّ أَطْبَقَهُ ثُمَّ أَخَذَ بِيدِي فَعَرَجَ بِي إِلَى السَّمَاء الدُّنْيَا، فَلَمَّا جِئْتُ إِلَى السَّمَاءِ قَالَ جَبْرِيلُ لِخَازِنِ السَّمَاءِ: افْتَحْ قَالَ: مَنْ هَذَا؟ قَالَ: جَبْرِيلُ، قَالَ: هَلْ مَعَكَ أَحَدٌ؟ قَالَ: نَعَمْ



مَعِيَ مُحَمَّدٌصِلِي الله عليه وسلَّم، فَقَالَ: أُرْسِلَ إِلَيْه؟ قَالَ: نَعَمْ فَلَمَّا فَتَحَ عَلَوْنَا السَّمَاءَ الدُّنْيَا فَإِذَا رَجُلٌ قَاعِدٌ عَلَى يَمِينه أَسُودَةٌ وَعَلَى يَسَارِه أَسُودَةٌ، إذَا نَظَرَ قَبَلَ يَمِينه ضَحكَ وَإِذَا نَظَرَ قَبَلَ شماله بَكَي، فَقَالَ: مَرْحَبًا بالنَّبِيِّ الْصَّالح وَالْابْن الصَّالح قَالَ قُلْتُ لجُبْريلَ: مَنْ هَذَا؟ قَالَ: هَذَا آدَمُ وَهَذه ألْأُسُودَةُ عَنْ يمينه وعَنْ شمَاله نَسَمُ بَنِيه، فَأَهْلُ الْيَمِينِ مِنْهُمٌ أَهْلُ الْحَنَّة، وَالْأَسْوِدَةُ الَّتِي عَنْ شِمَالِهِ أَهْلُ النَّارِ، فَإِذَا نَظَرَ عَنْ يَمِينَهُ ضَحِكَ، وَإِذَا نَظَرَ عَنْ شِمَالِهِ بَكَى، ثُمَّ عَرَجَ بِي إِلَى السَّمَاءِ الثَّانِيَةِ» فذكر الحديث قال :

«تُمَّ مَرَرْتُ بِإِبْرَاهِيمَ فَقَالَ: مَرْحبًا بِالنَّبِيِّ الصَّالِحِ وَالْابْنِ الصَّالِح، قُلْتُ: مَنْ هَذَا؟ قَالَ: هَذَا إِبْرَاهِيم»

(The roof of my house was opened while I was in Makkah, and Jibril came down and opened my chest, then he washed it with Zamzam water. Then he brought a vessel of gold filled with wisdom and faith, and poured it into my chest, then he closed it up. Then he took me by the hand and took me up to the lowest heaven. When we came to the lowest heaven, Jibril said to its keeper, 'Open up!' He said, 'Who is this' He said, 'Jibril. ' He said, 'Is there anyone with you' He said, 'Yes, Muhammad is with me.' He said, 'Has his Mission started' He said, 'Yes.' When it was opened, we went up into the first heaven, where I saw a man sitting with a multitude to his right and another to his left. When he looked to his right he smiled, and when he looked to his left, he wept. He said, 'Welcome to the righteous Prophet and the righteous son.' I said to Jibril, 'Who is this' He said, `This is Adam, and these multitudes to his right and left are the souls of his descendants. The people on his right include the people of Paradise, and the people on his left include the people of Hell, so when he looks to his right he smiles, and when he looks to his left he weeps.' Then he took me up to the second heaven... Then we passed by Ibrahim, who said, 'Welcome to the righteous Prophet and the righteous son.' I said, 'Who is this' He said, 'This is Ibrahim.') Az-Zuhri said: Ibn Hazm told me that Ibn `Abbas and Abu Habbah Al-Ansari used to say: the Prophet narrated here -

«ثُمَّ عُرِجَ بِي حَتَّى ظَهَرْتُ لمُسْتَوًى أَسْمَعُ فِيه صَرِيفَ الْأَقْلَامِ»

(Then I was taken up until I reached a level where I could hear the sound of the pens.) Ibn Hazm and Anas bin Malik said: the Messenger of Allah said:

«فَفَرَضَ اللهُ عَلَى أُمَّتِي خَمْسِينَ صَلَاةً، فَرَجَعْتُ بِذَلِكَ حَتَّى مَرَرْتُ عَلَى مُوسَى عَلَيْه السَّلَمُ، فَقَالَ: مَا فَرَضَ اللهُ عَلَى أُمَّتِكَ؟ قُلْتُ: فَرَضَ خَمْسِينَ صَلَاةً، قَالَ مُوسَى: فَارْجعْ إلَى رَبِّكَ فَإِنَّ أُمَّتَكَ لَا تُطيقُ ذَلكَ،

فَرَحَعْتُ فَوَضَعَ شَطْرَهَا، فَرَحَعْتُ إِلَى مُوسَى، قُلْتُ: وَضَعَ شَطْرَهَا، فَقَالَ: ارْحِعْ إِلَى رَبِّكَ، فَإِنَّ أُمَّتَكَ لَا تُطِيقُ ذَلِكَ، فَرَحَعْتُ فَوَضَعَ شَطْرَهَا، فَرَحَعْتُ إِلَىْه فَقَالَ:ارْحِعْ إِلَى رَبِّكَ فَإِنَّ أُمَّتَكَ لَا تُطيقُ ذَلِكَ، فَرَاحَعْتُهُ فَقَالَ: هِيَ حَمْسٌ وَهِيَ حَمْسُونَ لَا يُبَدَّلُ الْقَوْلُ لَدَيَّ، فَرَحَعْتُ إِلَى مُوسَى فَقَالَ: ارْجِعْ إِلَى رَبِّكَ، فَلْتَ: قَد اسْتَحْيَيْتُ مِنْ رَبِّي، ثُمَّ انْطَلَقَ بِي حَتَّى انْتَهَى إِلَى سِدْرَةِ الْمُنتَهَى فَغَشِيَهَا أَلُوانَ لَا أَدْرِي مَاهِيَ، ثُمَّ أَدْخِلْتُ

(Allah enjoined upon my Ummah fifty prayers. I came back with this (message) until I passed by Musa, who said, 'What did your Lord enjoin upon your Ummah' I said, 'He enjoined fifty prayers.' Musa said, 'Go back to your Lord, for your Ummah will not be able to do that.' So I went back, and He reduced it by half. Then I came back to Musa and said, 'It has been reduced by half.' He said, 'Go back to your Lord, for your Ummah will not be able to do that.' So I went back, and it was reduced by half. I came back to him, and he said, `Go back to your Lord, for your Ummah will not be able to do that.' So I went back, and He said: `They are five but equal in reward to fifty, for My word does not change.' I came back to Musa and he said, 'Go back to your Lord.' I said, `I feel too shy before my Lord.' Then I was taken up until I reached Sidrat Al-Muntaha, which was veiled in indescribable colors. Then I entered Paradise, in which I saw nets of pearls and its soil of musk.) This version was recorded by Al-Bukhari in the Book of Prayer. He also reported in the Book of Tafsir, under the discussion of Bani Isra'il (i.e., Surat Al-Isra'), the Book of Hajj and the Stories of the Prophets, via different chains of narration from Yunus. Muslim recorded similar Hadiths in his Sahih in the Book of Faith. Imam Ahmad recorded that `Abdullah bin Shaqiq said: I said to Abu Dharr, "If I had seen the Messenger of Allah, I would have asked him." He said, "What would you have asked him" He said, "I would have asked him, if he saw his Lord" He said, "I did ask him that, and «قَدْ رَأَيْتُهُ نُورًا، أَنَّى أَرَاه»

(I saw it as light, how could I see Him)" This is how it was narrated in the report of Imam Ahmad. Muslim recorded that `Abdullah bin Shaqiq said that Abu Dharr said: "I asked the Messenger of Allah, `Did you see your Lord' He said, «أُورْ أَنَى أَرَاه»

((I saw) a light, how could I see Him)" `Abdullah bin Shaqiq said: I said to Abu Dharr, "If I had seen the Messenger of Allah , I would have asked him." He said, "What would you have asked him" He said,



"I would have asked him, `Did you see your Lord" Abu Dharr said, "I asked him that, and he said, «رَأَيْتُ نُورًا» (I saw light.)

The Time that Isra' took place, and the Fact that it included both Body and Soul, when the Prophet was awake, not in a Dream

Musa bin 'Uqbah said, narrating from Az-Zuhri: "The Isra' happened one year before the Hijrah." This was also the opinion of 'Urwah. As-Suddi said: "It happened sixteen months before the Hijrah." The truth is that the Prophet was taken on the Night Journey when he was awake, not in a dream, and he went from Makkah to Bayt Al-Maqdis riding on Al-Buraq. When he reached the door of the sanctuary, he tied up his animal by the door and entered, where he prayed two Rak`ahs to `greet the Masjid'. Then the Mi`raj was brought to him, which is a ladder with steps which one climbs up. So he went up on it to the first heaven, then he went up to the rest of the seven heavens. In each heaven he was welcomed by the most pious of its inhabitants, and he greeted the Prophets who were in the various heavens according to their positions and status. He passed by Musa, the one who spoke with Allah, in the sixth heaven, and Ibrahim, the close friend (Khalil) of Allah in the seventh heaven. Then he surpassed them and all the Prophets in status and reached a level where he could hear the creaking of the pens, i.e., the pens of destiny which write down what is decreed to happen. He saw Sidrat Al-Muntaha, covered by the command of Allah, and its greatness, its butterflies of gold and various colours, surrounded by the angels. There he saw Jibril in his real form, with six hundred wings. He saw green cushions blocking the horizon. He saw Al-Bayt Al-Ma`mur, and Ibrahim Al-Khalil, the builder of the earthly Ka`bah, leaning back against it, the heavenly Ka'bah; every day, seventy thousand angels enter and worship therein, then they do not return to it until the Day of Resurrection. He saw Paradise and Hell, and Allah enjoined upon him fifty prayers, and then reduced it to five, as an act of mercy and kindness towards His servants. In this is a strong indication of the greatness and virtue of the prayers. Then he came back down to Bayt Al-Maqdis, and the Prophets came down with him and he led them in prayer there when the time for prayer came. It may have been the dawn prayer of that day. Some people claim that he led them in prayer in heaven, but the reports seem to say that it was in Bayt Al-Maqdis. In some reports it says that it happened when he first entered (i.e.,



before ascending into the heavens), but it is more likely that it was after he came back, because when he passed by them in the places in the heavens, he asked Jibril about them, one by one, and Jibril told him about them. This is more appropriate, because he was first required to come before the Divine Presence, so that what Allah willed could be enjoined upon him and his Ummah. When the matter for which he was required had been dealt with, he and his brother-Prophets gathered, and his virtue and high position in relation to them became apparent when he was asked to come forward to lead them, which was when Jibril indicated to him that he should do so. Then he came out of Bayt Al-Maqdis and rode on Al-Buraq back to Makkah in the darkness of the night. And Allah knows best. As for his being presented with the vessels containing milk and honey, or milk and wine, or milk and water, or all of these, some reports say that this happened in Bayt Al-Magdis, and others say that it happened in the heavens. It is possible that it happened in both places, because it is like offering food or drink to a guest when he arrives, and Allah knows best. The Prophet was taken on the Night Journey with body and soul; he was awake, not asleep. The evidence for this is the Ayah:

[سُبْحَانَ الَّذِي أَسْرَى بِعَبْدِه لَيْلاً مِّنَ الْمَسْجِدِ الْحَرَامِ إِلَى الْمَسْجِدِ الأَّقْصَى الَّذِي بَارَكْنَا حَوْلَهُ]

(Glorified (and Exalted) be He (Allah) Who took His servant for a Journey by Night from Al-Masjid Al-Haram to Al-Masjid Al-Aqsa, the neighborhood whereof We have blessed,) The words "Subhan Allah" (Glorified and exalted be Allah) are spoken in the case of serious matters. If it had been a dream, it would have been a significant matter and would not have been so astounding; the disbelievers of the Quraysh would not have hastened to label him a liar and the group of people who had become Muslims would not have deserted the faith. The word `Abd (servant) refers to both soul and body. Allah says: [أَسْرَى بِعَبْدِهُ لَيْلاً]

(took His servant for a Journey by Night) and:

[[وَمَا جَعَلْنَا الرُّءْيَا الَّتِي أَرَيْنَــكَ إِلاَّ فَتْنَةً لِّلنَّاس]

(And We made not the vision which we showed you but a trial for mankind) [17:60] Ibn `Abbas said: "This is the vision that the Messenger of Allah saw with his own eyes during the Journey by Night, and the cursed tree is the tree of Zaqqum." This was recorded by Al-Bukhari. Allah said:



[مَا زَاغَ الْبَصَرُ وَمَا طَغَى]

(The sight (of Prophet Muhammad) turned not aside (right or left), nor it transgressed beyond the limit (ordained for it))(53:17). Sight (Al-Basr) is a physical faculty, not a spiritual one, and he was carried on Al-Buraq, a shining white animal. This too indicates a physical journey, because the soul does not need a means of transportation of this nature. And Allah knows best.

An Interesting Story

In his book Dala'il An-Nubuwwah, Al-Hafiz Abu Nu`aym Al-Isbahani recorded via Muhammad bin 'Umar Al-Waqidi who said: Malik bin Abi Ar-Rijjal told me from `Amr bin `Abdullah that Muhammad bin Ka`b Al-Qurazi said: "The Messenger of Allah sent Dihyah bin Khalifah to Caesar." He mentioned how he came to him, and described an incident that showed how wise Caesar was. He sent for the Arab merchants who were in Syria and Abu Sufyan Sakhr bin Harb and his companions were brought to him. He asked them the well-known questions that were recorded by Al-Bukhari and Muslim, as we shall discuss below, and Abu Sufyan tried hard to give the impression that this was an insignificant issue. [The narrator] said that Abu Sufyan [later] said: "By Allah, nothing stopped me from saying something to Heraclius to make him despise [Muhammad] but the fact that I did not want to tell a lie that would later be found out, and he would never believe me again after that. Then I told him about the night on which he was taken on the Night Journey. I said: `O King, shall I not tell you of something from which you will know that he is lying' He said, `What is it' I said: `He claims that he went out of our land, the land of Al-Haram, in one night, and came to your sanctuary in Jerusalem, then came back to us the same night, before morning came.' The Patriarch of Jerusalem was there, standing next to Caesar. The Patriarch of Jerusalem said: `I know that night.' Caesar looked at him and said, 'How do you know about this' He said, 'I never used to sleep at night until I closed the doors of the sanctuary. On that night I closed all the doors except for one, which I could not manage to close. I asked my workers and others who were with me to help me deal with it, but we could not move it. It was like trying to move a mountain. So I called the carpenters, and they looked at it and said: The lintel and some part of the structure has fallen onto it. We cannot move it until



morning, when we will be able to see what the problem is. So I went back and left those two doors open. The next morning I went back, and saw that the stone at the corner of the sanctuary had a hole in it, and there were traces of an animal having been tethered there. I said to my companions: This door has not been closed last night except for a Prophet, who prayed last night in our sanctuary." And he mentioned the rest of the Hadith. In his book At-Tanwir fi Mawlid As-Siraj Al-Munir, Al-Hafiz Abu Al-Khattab 'Umar bin Dihyah mentioned the Hadith of the Isra' narrated from Anas, and spoke well about it, then he said: "The reports of the Hadith of the Isra' reach the level of Mutawatir. They were narrated from `Umar bin Al-Khattab, `Ali, Ibn Mas'ud, Abu Dharr, Malik bin Sa'sa'ah, Abu Hurayrah, Abu Sa'id, Ibn `Abbas, Shaddad bin Aws, Ubayy bin Ka`b, `Abdur-Rahman bin Qarat, Abu Habbah Al-Ansari, Abu Layla Al-Ansari, `Abdullah bin `Amr, Jabir, Hudhayfah, Buraydah, Abu Ayyub, Abu Umamah, Samurah bin Jundub, Abu Al-Hamra', Suhayb Ar-Rumi, Umm Hani', and `A'ishah and `Asma', the daughters of Abu Bakr As-Siddiq, may Allah be pleased with them all. Some of them narrated the incident at length, and others narrated it more briefly, as was reported in the Musnad collections. Even though some reports do not fulfill the conditions of Sahih, nevertheless the Muslims agreed unanimously on the fact that the Isra' happened in a physical form rather than in the dream.



۳۲۷