

MEN & THE UNIVERSE

Reflections of Ibn Al-Qayyem



By: Capt. Anas Abdul-Hameed Al-Qoz
Translated into English by Dr. Abdul-Latif Al-Khaiat

Preface

Praise be to Allah, the Compassionate, Who made known the Qur'an; Who created man, and taught him utterance; may peace and blessings be upon the noblest of prophets, Muhammad, who was sent to be a mercy for mankind.

The writings of Ibn Al-Qayyem, the celebrated scholar, may Allah give him mercy and admit him to His wide Garden, are indeed in no need of introduction. They are in fact a class apart. The present work is based on one of his books, "Miftah Dar Al-Sa'adah" (The Key to the House of Happiness.) I selected a section of the book from page 187 to 283 of volume one of the Arabic version, that discusses the following four topics:

1. Man,
2. the Universe,
3. Animals, and
4. Nature.

To smooth Ibn Al-Qayyem's writing for the modern reader, I supplemented it with modern material that would appeal to present-day readers. I did so because this is a time characterized by lack of motivation for knowledge, and the material things have so pervaded the minds that knowledge has receded in the same degree. Such a situation takes place at times of lack of faith and dryness of the religious spirit.

In the present work I have given titles to sections, and divided some sections into two, ending up with more than a hundred. The purpose of this, of course, has been to smooth the way for the reader so that he or she will get to the core of the book in the easiest way. I have also referred to modern scientific encyclopedias and to handbooks on medicine and biology to draw from them a lot of

interesting and valuable information that is presented in an agreeable and easy way. In addition, I have chosen fitting illustrations and sketches that work for comprehending the notions under discussion, and accelerate the achievement of the desired aim set for the book. It is well-known that a picture fixes an idea in the mind of the ardent reader, especially when he or she uses the verses of the Qur'an and traditions of the Prophet ﷺ as a starting point for his or her reflections. Ibn Al-Qayyem cites a large number of such verses and traditions, which he uses creatively and efficiently.

I choose this particular book of Ibn Al-Qayyem's, "Miftah Dar Al-Sa'adah" (The Key to the House of Happiness), because he presents in it the art and technique of thinking and reflection, and propounds the ways that should be followed to secure the desired outcome of reflecting on Allah's signs in nature and in the human sphere.

It may be in order here to list some of the techniques of thinking that Imam Ibn-al-Qayyem puts forth in his book:¹

1. Observing, with an open heart, Allah Almighty's creations in both the universe in general and in the human sphere in particular, with a view to better appreciating Allah's glory and comprehending His great power and wisdom.

2. Reflecting on Allah's verses revealed to the Prophet ﷺ and His *shari'a*, to develop an awareness of this religion's superiority and to realize the amazing correspondence between revelation, *fitrah* (human innate

¹ Hasan Al-Hajjajee, "Ibn Al-Qayyem's Educational Thought"

inclination to accept truth), and uncorrupted understanding.

3. Observing Allah's commandments and abiding by His system, which is conducive to preparing the heart to have the purity and clarity of vision concerning what is good for it. Abstaining from covetous looking, for instance, is of great benefit apart from being an act of obedience; since it protects the heart from corruption, makes it exult at the closeness to Allah, strengthens it; supplies it with a light that enables a believer to have perceptive vision, firmness and courage; protects him or her from the designs of Satan, so that a believer is dedicated to considering what is best for him or her. This is so because there is a close link between the heart and sight.

4. Guarding against the danger of sins and keeping away from them, since they distract the mind from proper functioning; it is a fact that the heart will be corrupted if burdened with many sins, and that leads in turn to the corruption of the other organs.

5. Guarding against blind imitation, since such a practice blurs thinking and dulls its activity. Instead, man is urged to focus on the teaching of the Scripture and the Prophet's traditions and to comply with their teachings as exemplified by the upright Caliphs (i.e. the first four Caliphs).

6. Protecting the body from abuse, preserving its comfort, and warding off all distracters.

The above techniques, if realized, will surely secure the attainment of the desired target. Some of the benefits of reflection are the following:

a.) It is the way to acquiring faith,

b.) It uncovers the truth about things and shows the distinction between right and wrong,

- c.) It wards off delusions and fantasies,
- d.) It protects one from sins,
- e.) It is the basis for all acts of obedience (to Allâh),
- f.) It guides to acquainting oneself with Allah Almighty, His Oneness, His Attributes of Perfection; and directing all worship to Him alone, and
- g.) It is the basis for purity of heart while reciting the Qur'an.²

One may add in support of the above, a tradition of Prophet Muhammad ﷺ which says:

«تَفَكَّرُوا فِي خَلْقِ اللَّهِ وَلَا تَفَكَّرُوا فِي اللَّهِ» .

“Think of Allah’s creation, not of Allah.”³ (As reported by Aboo Nu’aym in his: (Al-Hiliah, on the authority of Ibn Abbas.)

I pray to Allah that the following chapters are worth the reader’s effort, that I have succeeded, in some degree, in clarifying the link between the ‘ilm’ (knowledge, vision) of the classical scholars, and knowledge, or empirical science of the present age, which refers to facts, experiment and concrete evidence.

At the same time, I pray to Allah Almighty that He guides us to what is true and upright, that He protects us from transgression, as He is Able to do anything. Praise be to Allah, Lord of the Worlds. Peace and blessing be upon Muhammad, upon his family and companions.

Anas Al-Qoz, captain

20 Safar, 1418 A.H.; 25 June, 1997

² Hasan Al-Hajjajee, “Ibn Al-Qayyem’s Educational Thought”.

³ Rated as a “good” tradition by Shaikh Naser Al-Deen Al-Albanee, in: Sahih Al-Jami’.

Al-Imam Ibn Al-Qayyem

His full name was Muhammad s/o Aboo Bakr s/o Ayyoub, Al-Zar'ee Al-Dimashqee, Shamsud-Deen Ibn Qayyem Al-Jawziyyah. He was born in Hawran, southeast of Damascus, in 691 A.H. (1219 CE) He was a courageous, widely-read scholar; he had an extensive knowledge of the various legal schools, and the schools of early Muslim scholars. He had such a strong passion for his teacher, Al-Imam Ibn Taymiyyah, that he rarely contradicted any of his views; he championed all his ideas, edited his books and publicized his scholarship.

When Al-Imam Ibn Taymiyyah was detained at Al-Qal'ah prison in Damascus, Ibn Al-Qayyem was detained with him. This detention occurred as a result of the conspiracies of Suffis and unorthodox groups. Later, he was subjected to further hardship in connection with Ibn Taymiyyah's legal opinions.

Al-Imam Adh-Dhahabee reports that Ibn Al-Qayyem was once imprisoned because he criticised making a journey with the purpose of visiting Prophet Ibraheem's tomb in Palestine.

Ibn Katheer, a great disciple of Ibn Al-Qayyem's, says of him: "He was constant in teaching and writing day and night; he prayed long and recited the Qur'an long; he was well-bred, courteous, not covetous or malicious. His prayer was very long, and his bowing and prostration in prayer were quite long."

After praying Al-Fajr prayer, he used to stay in his place remembering Allah until well after sunrise; he commented on this: "This is the start of my day. If I fail to sit, I lose my strength."

He used to say: "With patience and conviction one attains precedence in religion."

And he used to say: "A traveller (i.e. towards Allah) cannot do without perseverance to help him go ahead and upwards, and without knowledge to light his way and guide him."

He was fond of collecting books and reading them. His collection was incalculable; his library one of the biggest. After his death, his children sold his books for quite a long time, though keeping for themselves what they liked.

Some of his writings:

'Al-Huda' (Guidance), 'A'lam Al-Muaqqi'een' (Major Spokesmen), 'Bada'iu Al-Fawa'id' (Remarkable Fruits), 'Tareeq Al-Sa'adatayn' (The Way to Double Happiness), 'Sharh Manazil Al-Sa'ireen' (Exposition of the Stages of Traveller), 'Al-Qadaa wa Al-Qadar' (Destiny), 'Jala' Al-Afham' (Comprehension Made Simple), 'Masa'id Al-Shaitan' (The Snares of Satan), 'Miftah Dar Al-Sa'adah' (The Key to the House of Happiness), 'Al-Rooh' (The Spirit), 'Hadee Al-Arwah' (The Guide of Spirits), 'Raf'u Al-Yadayn' (The Raising of Hands), 'Al-Sawa'iq Al-Mursalah 'Ala Al-Jahmiyah wa Al-Mu'attilah' (Thunderbolts Against Jahmites and Mu'tazilites). He also composed a poem of six thousand couplets, which he entitled 'Al-Kafiyah fi Al-Intisar Lil-Firqatin Najiyah'.

He died in Damascus in 751 A.H. (1350 AD) His funeral was attended by a great many people. May Allah give him peace and grant him his favour, Amen.

تأملات ابن القيم
في الأنفس والآفاق

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In The Name of Allah, The Most
Beneficent, The Most Merciful

Chapter One

Man

﴿أَوَلَمْ يَرَ الْإِنْسَانُ أَنَّا خَلَقْنَاهُ مِنْ نُطْفَةٍ فَإِذَا هُوَ خَصِيمٌ مُبِينٌ﴾ [يس: ٧٧]

“Is man, then not aware that it is We who create him out of a mere drop of sperm—whereupon, lo! he showed himself endowed with the power to think and to argue.”

Al-Qur'an(36:77)

Ibn Al-Qayyem's propositions concerning man¹

1. That he was first created from clay, and that his seed was made from a draught of despised fluid.

2. That he was created from a handful that Allah collected from all parts of the earth, so that it contains the good and the evil, the easy-going and the intolerant, the liberal and the miserly. It was Jibreel (Gabriel) who took this handful, then it was fermented until it turned to mud, then Allah fashioned man as He deemed fit. Then He breathed into him of His spirit, so that he was a human of flesh and blood, talking and reasoning...Later on Allah had His angels prostrate themselves before man, and taught him the names of everything.

3. That he was blessed with intellect, knowledge, understanding, eloquence and speech.

4. That he was privileged with the quality of modesty.

5. That he was privileged with two means of expression, the oral and the written.

6. That he was endowed by Allah with the power of acquiring knowledge by several means.

7. That he was distinguished with certain motives and impulses that serve to accomplish what is good for man.

¹ Hasan Al-Hajjaji, "Ibn-al Qayyem's Educational Thought"

8. That man was distinguished with strength, desire and will.

9. That Allah's commandments are to be permanently observed until the day man meets His Lord.

10. That man was not created without purpose.

11. That man is distinguished from the other creatures in appearance and shape.

12. That man is an indivisible whole: composite of soul, mind and body.

Stages of the Creation of Man

Ibn Al-Qayyem writes the following:

By considering the verses in the Qur'an in which Almighty Allah has urged His servants to reflect upon Him, one will indeed be led to learn about Allah, about His Oneness and attributes of perfection; to learn about aspects of His might as attested by the absoluteness of His power, the infinite nature of His wisdom; by His mercy, generosity, clemency, kindness, justice, grace, anger, reward and punishment – it is through reflection on these facts that He willed His servants to know Him, and it is for this reason that He exhorted them to reflect upon His signs.

It is with this in mind that I here mention a number of signs as referred to in the Qur'an, so that they may be a reminder of further signs. One set of such signs are related to the creation of man. It will be noticed that in numerous places in the Qur'an we have been exhorted to reflect on the creation of man, as for example in the following verses:

﴿ فَلْيَنْظُرِ الْإِنْسَانُ مِمَّ خُلِقَ ﴾ [الطارق : ٥]

“Let man, then, observe from what he has been created.” (86:5)

﴿ وَفِي أَنْفُسِكُمْ أَفَلَا تُبْصِرُونَ ﴾ [الذاريات : ٢١]

“Just as there are signs within your own selves: can you not, then, see?” (51: 21)

﴿ يَتَأْتِيهَا النَّاسُ إِنْ كُنْتُمْ فِي رَيْبٍ مِّنَ الْبَعْثِ فَإِنَّا خَلَقْنَاكُمْ مِّن تُّرَابٍ ثُمَّ مِنْ نُطْفَةٍ ثُمَّ مِنْ عَلَقَةٍ ثُمَّ مِنْ مُّضْغَةٍ مُّخَلَّقَةٍ وَغَيْرِ مُخَلَّقَةٍ لِّنُبَيِّنَ لَكُمْ وَنُقَرُّ فِي الْأَرْحَامِ مَا نَشَاءُ

إِلَىٰ أَجَلٍ مُّسَمًّى ثُمَّ نَحْنُ نُخْرِجُكُمْ طِفْلًا ثُمَّ لِتَبْلُغُوا أَشُدَّكُمْ وَمِنْكُمْ مَّنْ يُؤْوَفُ
وَمِنْكُمْ مَّنْ يُرَدُّ إِلَىٰ أَرْدَلِ الْعُمُرِ لِكَيْلَا يَعْلَمَ مِنْ بَعْدِ عِلْمِ شَيْئًا ﴿٥﴾ [الحج : ٥]

“O men! If you are in doubt as to the truth of resurrection, remember that, verily, We have created every one of you out of dust, then out of a drop of sperm, then out of a germ-cell, then out of an embryonic lump complete in itself and yet incomplete, so that We might make your origin clear unto you.

“And whatever We will to be born We cause to rest in the mothers’ wombs for a term set by Us, and then We bring you forth as infants and allow you to live so that some of you might attain to maturity: for among you are such as are caused to die in childhood, just as many a one of you is reduced in old age to a most abject state, ceasing to know anything of what he once knew so well.” (21: 5)

﴿ أَيَحْسَبُ الْإِنْسَانُ أَنْ يُتْرَكَ سُدًى ۚ أَلَمْ يَكُنْ نَظْفَةً مِنْ مَنِيٍّ يُمْتَنَىٰ ۖ ثُمَّ كَانَ عَلَقَةً فَخَلَقَ فَسَوَّىٰ ۖ جَعَلَهُ
مِنْهُ الذَّكَرَ وَالْأُنثَىٰ ۚ أَلَيْسَ ذَلِكَ بِقَدِيرٍ عَلَىٰ أَنْ يُحْيِيَ الْمَوْتَىٰ ﴾ [القيامة : ٣٦-٤٠]

“Does man, then, think that he is to be left to himself, to go about at will?

Was he not once a mere drop of sperm that had been spilt, and thereafter became a germ-cell – whereupon He created and formed it in accordance with what it was meant to be, and fashioned out of it the two sexes, the male and the female?

Is not He, then, able to bring the dead back to life?”
(75: 36-40).

﴿ أَلَمْ نَخْلُقْكُمْ مِنْ مَّاءٍ مَّهِينٍ ۚ فَجَعَلْنَاهُ فِي قَرَارٍ مَّكِينٍ ۚ إِلَىٰ قَدَرٍ مَّعْلُومٍ ۚ فَقَدَرْنَا فَنِعْمَ
الْقَادِرُونَ ﴾ [المرسلات : ٢٠-٢٣]

“Did We not create you out of a humble fluid, which We then allowed to remain in the womb’s firm keeping for a term pre-ordained?”

Thus have We determined the nature of man’s creation: and excellent indeed is Our power to determine what is to be!” (77: 20-23)

﴿أَوَلَمْ يَرِ الْإِنْسَانُ أَنَّا خَلَقْنَاهُ مِنْ نُطْفَةٍ فَإِذَا هُوَ خَصِيمٌ مُبِينٌ﴾ [يس: ٧٧]

“Is man, then, not aware that it is We who create him out of a mere drop of sperm – whereupon, lo! he shows himself endowed with the power to think and to argue?” (36: 77)

﴿وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلَالَةٍ مِنْ طِينٍ ۝ ثُمَّ جَعَلْنَاهُ نُطْفَةً فِي قَرَارٍ مَكِينٍ ۝ ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً فَخَلَقْنَا الْمُضْغَةَ عِظْمًا فَكَسَوْنَا الْعِظْمَ لَحْمًا ثُمَّ أُنشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ﴾

[المؤمنون: ١٢-١٤]

“Now, indeed, We create man out of the essence of clay, and then We cause him to remain as a drop of sperm in the womb’s firm keeping, and then We create out of the drop of sperm a germ-cell, and then We create out of the germ-cell an embryonic lump, and then We create within the embryonic lump bones, and then We clothe the bones with flesh – and then We bring all this into being as a new creation: hallowed, therefore, is Allâh, the best of artisans!” (23: 12-14)

In many places in the Qur’an a human is urged to reflect and ponder over the starting of his creation, the growth and the end.

Male reproductive cells swimming in the Spermatic Fluid

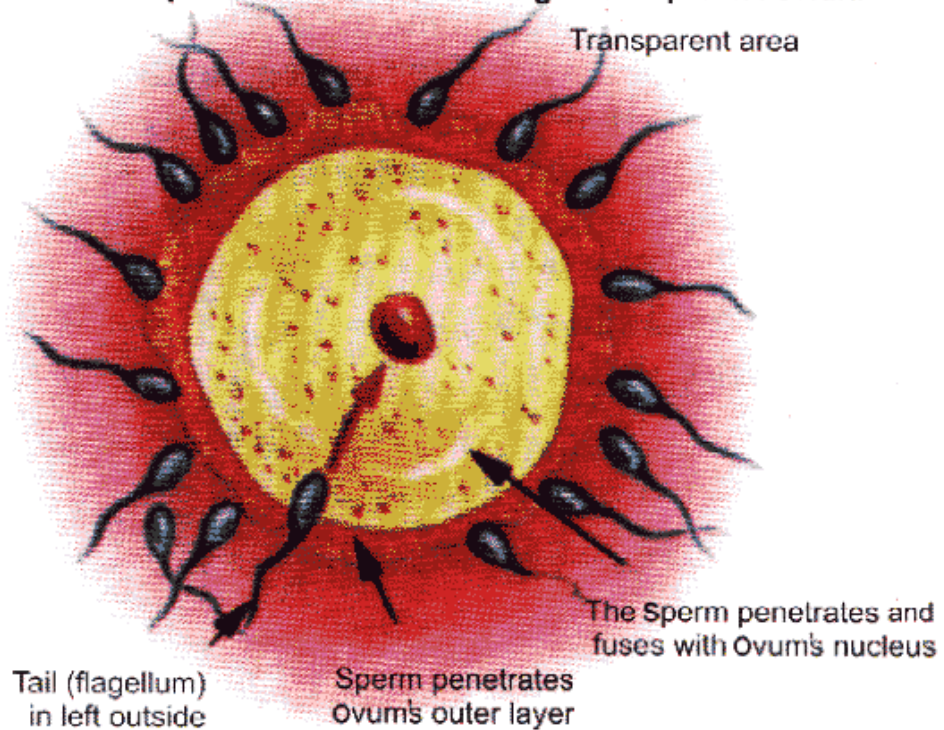


Figure "1"

1. The testes of the male are a kind of factory for sperm. There, sperm are produced on the inner surface of hollow tubes with a length of several kilometres. The cells mature there to be sperm, when each has a head 5 microns long and a tail 55 microns long. The sperm is considered to be a bearer of half a potential human. It may be noted that one ejaculation of semen from the male may carry 500 million sperm, or spermatozoa, although a human is created from just a single sperm. Even twins can be created from two sperm or spermatozoa that fertilize one egg. The sperm tubes in the testis are about 4000 in number (quoted from: *"The Creation of Man, Between Medicine and the Qur'an"*)*

* The parts indented and in small script are modern material selected by Capt. Al-Qoz.

In his own creation and within himself he can find the most telling signs that point to his Creator and Originator. Man's own being is closest to him, and there he can find such wonders that point to the greatness of the Lord in a way that many lifetimes would not be sufficient to know more than a fragment of them. It is unfortunate that man should not reflect on that: if he did, the overwhelming nature of creation would deter him from being ungrateful to his Creator.

Let us read about this in the Qur'an:

﴿ قَتَلَ الْإِنْسَانَ مَا أَكْفَرُهُ ○ مِنْ أَيِّ شَيْءٍ خَلَقَهُ ○ مِنْ نُطْفَةٍ خَلَقَهُ فَقَدَرُهُ ○ ثُمَّ السَّبِيلَ يَسْرُهُ ○ ثُمَّ أَمَانَهُ فَأَقْبَرَهُ ○ ثُمَّ إِذَا شَاءَ أَنْشَرُهُ ﴾ [عبس : ١٧-٢٢]

“Only too often man destroys himself: how stubbornly does he deny the truth! Does man ever consider out of what substance Allâh creates him? Out of a drop of sperm He creates him, and thereupon determines his nature, and then makes it easy for him to go through life; and in the end He causes him to die and brings him to the grave; and then, if it be His will, He shall raise him again to life.” (80: 18-22)

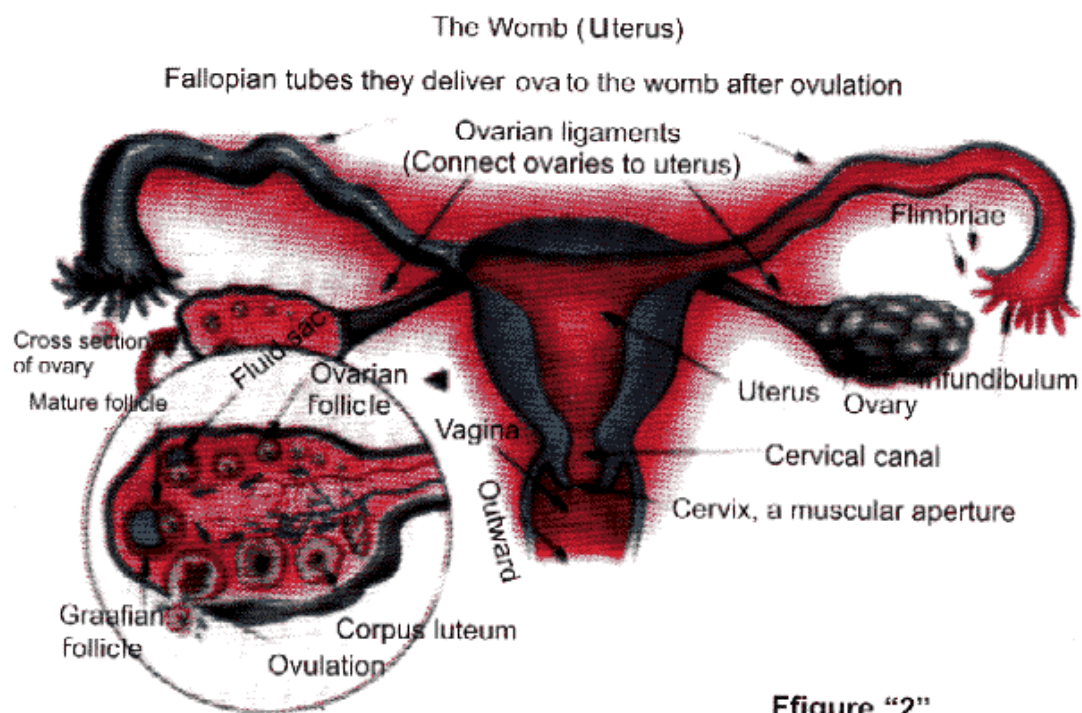
When the Almighty repeatedly makes us recite these and similar verses so that we might learn about the drop of sperm, the clot, the lump of flesh and the dust, He does not merely want us to utter them, nor to be cognizant of them, but to understand a further meaning, which these things build up to, and which is the purport of the Qur'anic text.

The drop of sperm in the womb, the shaping of the clot, and the lump of flesh

Have a look now at the drop of sperm with an eye that has vision. It is no more than a drop of worthless, repulsive

and dirty liquid. It is a drop that would, if left for an hour or so, go bad and reek. See now how the Lord of lords causes this drop to issue from between the loin of man and the pelvic arch of woman, obedient to His beckoning, responding to His will, docile and humble, progressing despite the raggedness and bumpiness of its paths, until He shepherds it to its destination and settling. See how the Almighty has brought together the male and the female and sown love in their hearts. See how with both desire and affection Allâh leads them as if on a journey to a meeting that is the cause of the creation and forming of the child. See how the liquids from male and female mingle against all odds, and consider how they run filing from organs and paths that lie far apart until they come together at the same spot; how they settle at a firm lodging (i.e. the womb), protected from infection by the outer air, from the cold weather of the world, and from exposure to a possible mishap or catastrophe that may smite them. Consider then how the Lord transformed this whitish cloudy droplet into a blackish-red clot; how He then transformed it into an embryonic lump, very unlike the previous clot in colour, quality, and shape; how He transformed this into unclothed bones, unlike the embryonic lump in shape, appearance, size, touch and colour.

A woman's ovary contains eggs, each of which can potentially produce half a human. The number of eggs in the single ovary is 400,000, although only a single egg is released (ovulation) in each menstrual cycle (29 days). The release of eggs is normally carried out alternately by the two ovaries. The ovary is considered the primary sexual gland of the female, the counterpart of the male's testis.



The stage of the bones, flesh and nerves

Consider now how He caused those apparently homogenous and equal parts to specialize into nerves, bones, vessels, sinews, some hard, some soft, and some partly hard. See how God has tied them all very firmly in the most compact form; how the bones are covered with flesh that clothes them all and clings to them and protects them; how the bones in turn give the flesh the necessary strength and ability to move – the service is reciprocal: the bones give the flesh solidity, and the flesh gives the bones protection! See how the Lord formed the human in the

best shape, how He placed the ears to hear and the eyes to see, the mouth, the nose, and all the rest of sense organs that serve as channels to the outer world; how He made the arms and the legs, gave them the needed power and extension, how He provided their ends with fingers and toes; how the fingers and toes are further divided into phalanges; how the inside of the body contains organs like the heart, the stomach, the liver, the spleen, the lungs, the womb, the bladder, the intestine, each performing its own task and its own function.

The forms of various bones and how they are joined

Consider now the exceeding wisdom embodied in the creation of bones to be a framework and bulwark for the body. You can see how the Lord has determined their different sizes and forms; some small, some big; some long, some short; some curved, some circular; some thin, some thick; some solid, some hollow. Consider how bones have been interlocked, some in the form of tendon and mortise, some just touching end to end. See how their forms are varied in a way that is adapted to their functions: the molars for instance are designed to grind, and so they have a flat surface; while the incisors are designed to cut, and so they have a sharp thin edge. Since man needs to move the whole of his body and alternate parts of it carry out whatever work he needs to accomplish, the bones have not been made as one cohesive mass; there are rather many bones with joints that link one to another in a way that facilitates movement. Each joint is of the size and form that serves the task it is meant to perform. Consider how all these joints and organs are firmly built, and how they are connected with tendons and ligaments that extend from one end of the bone and then reach to the next bone to support the first, and see how the bone has a protrusion that exactly fits a recess in the bone that

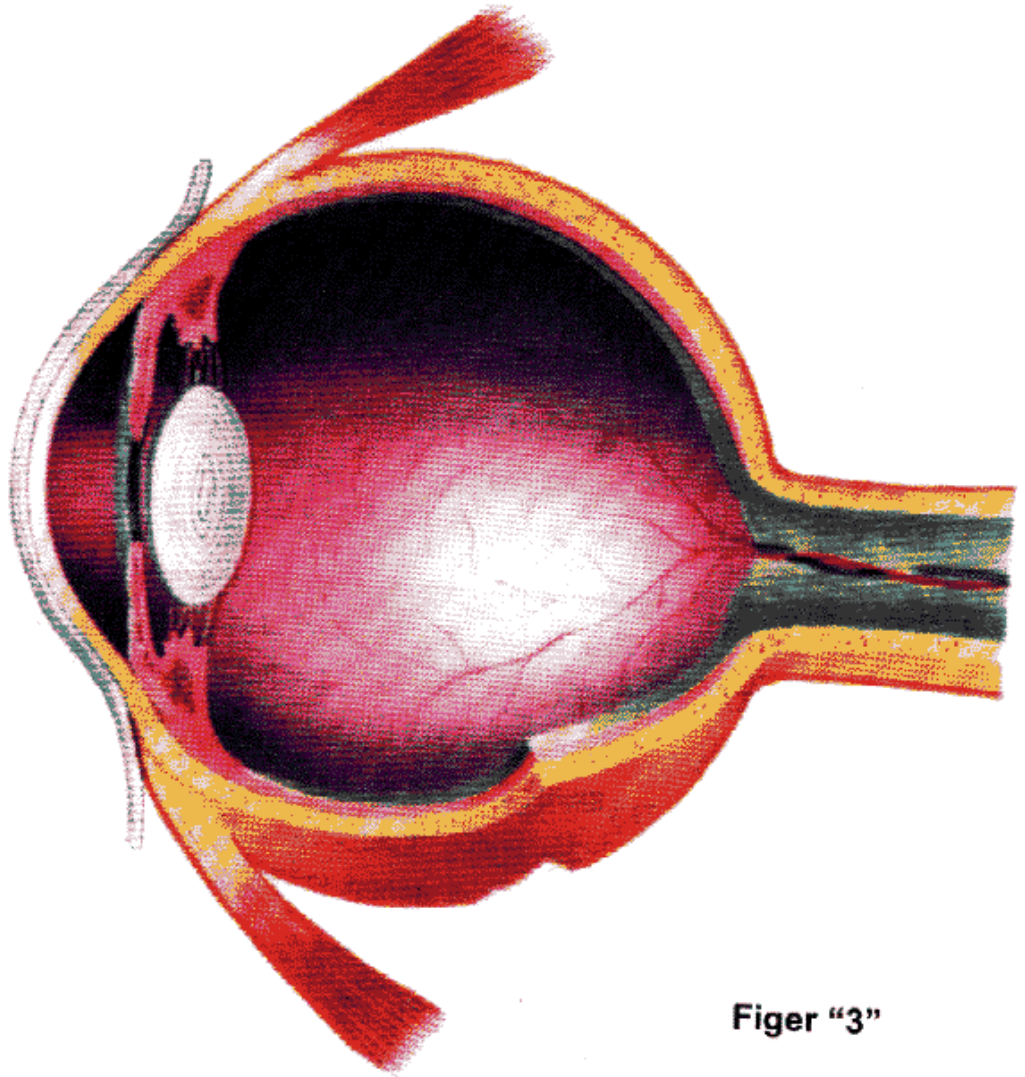
links to it, so that when the human needs to move that particular part, the whole mechanism responds splendidly to his desire, which is only possible because of those joints.

Each eye has about 140 receptors for light, called cones and rods. The number of cones in each eye is 7 million, and the rods are 130 million. The function of the cones is to receive intense light and colours, while the rods are for faint and moderate light. The cones and rods form the eye's retina. This retina is a half sphere, located at the back of the eye. If viewed through an ophthalmoscope, it seems very attractive. The retina is overlaid by two spheres, the inner is very rich in blood supply, and the outer is a protective shell called the sclera. The eye's movement is controlled by six muscles, and the coordination is controlled by the cerebrum, the cerebellum and the medulla. As a result of the activity of the retina, a total of half a million neural fibres transmit the image as colour vision.

It should be added that the retina itself is in ten layers, and that the layer of cones and rods is just a single layer lying at the deepest level.

An eye afflicted with colour blindness may be partially or totally colour blind. An eye with partial colour blindness can distinguish only two of the three primary colours, with all the derivative colours. It may distinguish red and blue or green; it may distinguish red and green slightly. In the case of total colour blindness the eye does not distinguish any colours; all visible objects of various colours seem to it dark gray, exactly as one sees them in the dark.

Parts of the Eye



Figer "3"

The cornea is the front window of the eye; it is a thin film that lies in front of the iris and pupil.

The iris is the layer or tunic that gives the eye its colour, black, hazel, blue, or green. It is a muscular body that lies next to the cornea, and has a hole in its middle called the pupil.

The pupil is the hole that can widen or contract according to the intensity of light, enabled to do so by the muscles of the iris.

The lens is a transparent, elastic body, containing transparent liquid, and tied by muscles on all sides, which control the convexness of the lens, so as to form a clear reflection of the image on the retina.

The sclera is an outer layer that protects the eye (the 'white' of the eye).

The choroid is a layer that lies next to the sclera, and has blood vessels that nourish the eye.

The retina is the layer next to the choroid. It consists of ten layers that cannot be seen with the naked eye, one single layer of which performs the task of seeing, and consists of 140 million cells, which are of two sorts:

1. The rods which perceive normal light
2. The cones which perceive intense light

The head and its senses

Consider the head and the large number of bones that it contains. It is said to contain fifty-five bones, varied in shape, size and function. See how the Almighty has mounted it on the trunk, rather like a rider mounted on his animal. In its position above the torso Allah has disposed it in the right place to contain four of the five senses: hearing, vision, smell, taste, and touch; and the site of all perception.

The eyes

The sense of vision has been placed at the front of the head, so that it functions as a sentry, guard, and pilot for the body. He made each eye of seven layers, each layer with a particular quality, size and function. If any of these layers should be missing, or if it were moved away from its place or its shape, then the eye would stop seeing.

The Lord has supplied in the midst of these seven layers the pupil, a wondrous creation, equal to a lentil grain in size, but capable of engulfing the whole horizon from east to west, and extending its power of vision from the sky to the earth. It plays among the parts of the eye the role of the heart among organs, being their master, while all the layers, eyelids and eyelashes are its servants and guards. Glorified be Allah, the best of creators.

The eyebrows

See now the eyes. Observe how the Lord made their exquisite shape and their size, adorned them with the eyelids, to protect and shade them, and to receive harmful things, motes and dust in place of the eyes; how they ward off from them any excess of heat and cold that can cause them harm. Observe how He planted at the edge of the eyelids the eyelashes to adorn and beautify them, and they have other benefits apart from cosmetic purposes. And see how Allah provided them with such marvellous power of vision that spans all the space from sky to earth, that reaches all the stars and planets in the sky. It is such a wonderful thing that this tiny organ should have the capacity to accommodate an image of the skies with all their expanse and extent.

The ears

Allah created for man the sense of hearing. The ear is indeed a splendid creation! It performs what is required of it to perfection. The outer ear is made hollow, similar to a shell, so that it may collect sound, and then convey it to the outer ear canal. The outer ear is also important for feeling the movement of any insect so that a human may quickly remove it. It has convolutions, grooves and windings that enable it to catch incoming air and sound, and funnel it to the outer ear canal after softening it. Its particular shape helps to lengthen the way for any

intruding insect, so that it may not reach the outer ear canal before the human has taken notice or woken and then checked its progress. There are also other benefits besides the ones we have mentioned.

One aspect of the wisdom of the Lord is observed in that the semi-liquid substance, the 'ear wax', overlaying the external ear canal is of such a bitter taste that an intruding creature is repelled by it, and thus prevented from intruding towards the inner ear – it rather does its best to retreat. In the same way, the eye's liquid is saline, which has a protective effect – the eye being jelly-like, and so unable to stand adverse circumstances: it would be gravely harmed had it not been for the saline liquid that protects and guards it. In contrast, the mouth's liquid is made to be sweet and pure, so that it is able to sense the taste of things with precision. Had it had a special flavour, it would have given it to things that enter the mouth. One can notice, for instance, that a sick person with a bitter mouth judges unbitting things as bitter. This was put in verse by a certain poet:

He whose mouth is sick and bitter
Will find bitter fresh and pure water!

The nose

The Almighty mounted the nose on the face, giving it a nice shape and size. He provided it with nostrils, with a barrier that separates them. He made it the site of the olfactory sense, so that the nose can distinguish all smells, fragrant or foul, healthy or obnoxious. It also inhales air that reaches the heart, refreshing it, and nourishing it. The Lord did not give the inside of the nose the windings and twists that he gave the inside of the ear, lest that should check odours and weaken them. The Almighty willed that the nose should be the receptor of waste material that collects in it from the brain, from where it is drained

outside. He willed, in His infinite wisdom, that the nose should be narrower at the top than at the base, since this width at the bottom facilitates the collection of the waste material, so that it may be easily dismissed, and for the nose to inhale all its capacity of air, which ascends some distance before it flows to the heart in a way that does not harm or agitate it. The barrier between the two nostrils is placed by the mercy and wisdom of the Lord, since the nose is a pipe and conduit that receives waste material from the head, but is also the channel for the ascending air: this barrier in the middle protects the inhaled air from being contaminated by the impurity that descends from the head. It will be observed that as the liquid flows down, it occupies one of the nostrils in most cases, leaving the other for breathing; but if it flows through both nostrils, the liquid will be on one side, leaving enough space for the inhaled air. Besides, since the nose, unlike other sense organs like the ears or eyes, is single, wisdom dictates that it should be divided into two channels. Should any mishap hurt one of the two nostrils, or should a disease make it ineffective, the other unhurt nostril can carry on with the job, averting the dire consequences to the body of being without the vital part of the nose. To have two noses on the same face would have been disagreeable, and so the Lord of the Worlds, the best of artisans, disposed that it should be just one nose, with this dual structure that parallels the duality of the ears and eyes.

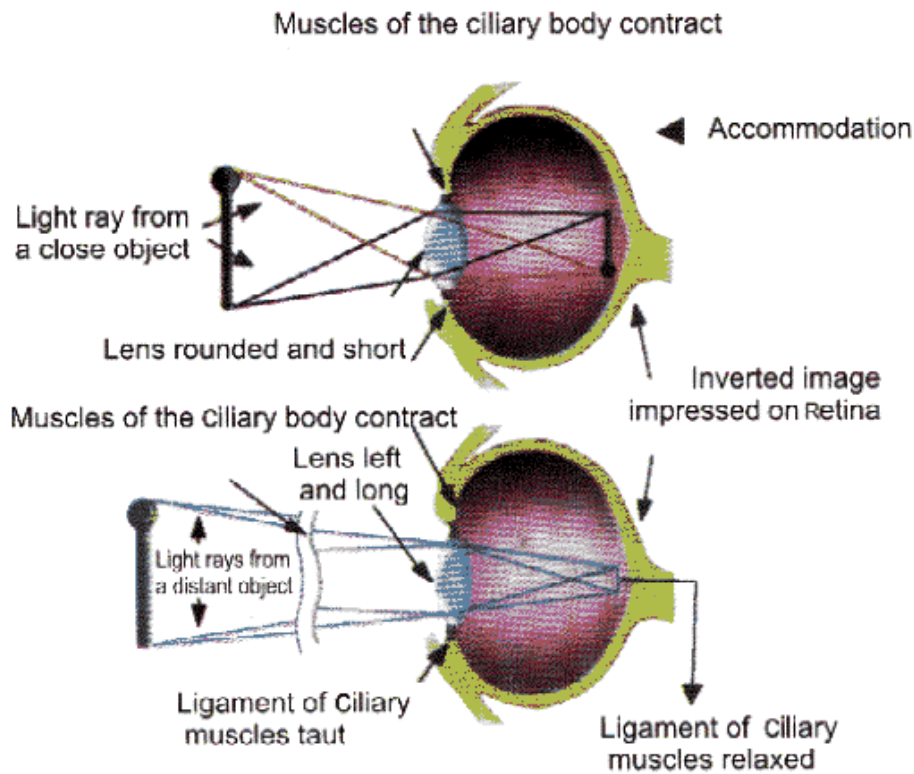


Figure "4"

Accommodation of the eye in response to the proximaty or distance of an object

The lens is a transparent body that, like any lens, refracts light-rays that pass through it, focusing them to one point, on the Retina in this case. The lens consists of a complex layer of tissues, held in place by the fibres connecting the Retina to the Ciliary body which controls the its shape, so that it can always focus light on the Retina, whatever the distance of the object. This process is called accommodation. The image is represented upside down on the Retina, but the brain soon corrects it.

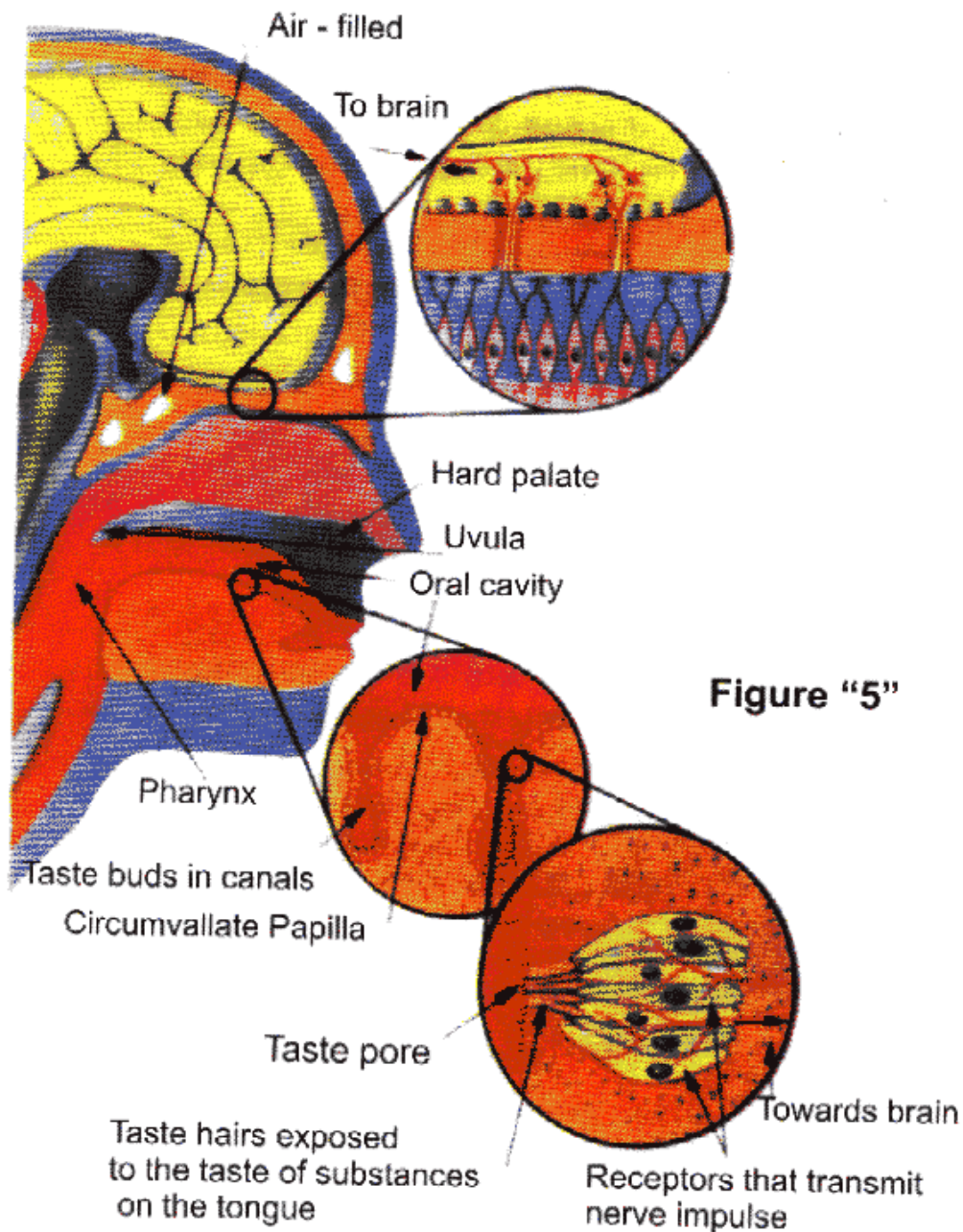


Figure "5"

The nose and the sense of hearing

Odour enters the nostril with the inhaled air, and spreads in the nasal cavities, where it comes in contact with the hairlike endings (cilia) of the olfactory receptors, which synapse with the olfactory nerve cells, and these latter directly transmit the generated

impulse to the brain. If the inhaled air contained some pollen from a flower or a rose, and the particles of pollen came in contact with some of the fibers of the sensory nerve cells, also linked up with the brain, you would sneeze.

Odour lasts for three minutes. After that, it either disappears or you become accustomed to it. The sense of smell is still a mystery to scientists. They say that when odour particles enter the nose, they are picked up by olfactory sensory cells, located high in the nasal cavity in an area called the olfactory epithelium. Fibres from these cells extend into the olfactory bulb, where the odour particles are dissolved and a reaction takes place with thousands of fibres of olfactory cells, specialized in chemical reactions, and then they are distributed to 6-8 nerve transmitters that convey the results of the reaction to the brain.

The basic odours are seven, and all the odours are blended from these. Glory be to Him who created, originated and shaped.

The mouth

The Almighty also provided man with the mouth, choosing for it the most suitable location, endowing it with abilities and instruments of taste and speech, and with tools of cutting and grinding that overwhelm an observing person. Look at the tongue, one of the signs that point to the Lord: it is an interpreter of the king of organs (the heart), that expresses what the heart wishes to convey or declare, in the same way that the Lord willed that the ear should be a messenger that keeps the heart briefed and informed. The ear is the courier that conveys the news to the king of organs, a counterpart to the tongue, a courier and messenger that transmits what the heart wishes to make known.

The Lord, in His infinite wisdom, disposed that this organ should be sheltered, preserved, and concealed; not visible or exposed like the ear, the eye, or the nose. Having the task of receiving messages from outside, those organs need to be in touch with the outer world, while the tongue is there to express messages to the world, not to receive them, and so it needs to be preserved and guarded. Besides, as the tongue is apart from the heart, the noblest of organs, and as it is a kind of interpreter and vizier of the heart, it needs to have a pavilion that conceals it and protects it. It is protected in that pavilion in a way similar to the protection of the heart in the chest. The tongue is also one of the most tender and wet organs, and it can perform only with that wetness surrounding it, and so, if it were exposed, it would be harmed by heat, dryness and rigidity that would inhibit its functions. There are other reasons besides these for the extra protection of the tongue.

The teeth

The Lord also adorned the mouth with teeth, a handsome and agreeable sight to look at, a vital contributor to human survival and the tool of nourishment. Some of the teeth are tools of grinding, and some are tools of cutting. The Almighty made firm their roots, and gave sharpness to their edges. He gave them a white colour, and arranged them in two straight well-arrayed rows, like a necklace of pearls in their whiteness, purity and splendour. Curved over the teeth are two walls, the lips, which have a number of benefits and functions. The Lord has willed that the lips have an agreeable colour and shape, a nice position and appearance. He destined them to be a keeper of the mouth, a final and finishing station for the uttering of sounds, in the same way that the soft palate is the starting station and the tongue is the middle station. The

tongue is the most active organ in the production of letters, since it functions as the mediator. In His infinite wisdom, Allah disposed that the lips are just flesh, without bone or nerves, so that a human may use them for sipping drinks, and have no difficulty in opening and closing them. He confined movement to the lower jaw which, as the lighter jaw, is more adapted to movement, and also because the upper contains precious organs that should not run the risk of movement. He destined humans' throats to be of infinite variety in narrowness and width, coarseness and smoothness, softness and hardness, and in length and shortness. In consequence of this, there is an endless variety of voices, in such a way that very rarely do any two voices resemble each other. An offshoot of this is that we believe a blind person's witness is legal, since he can distinguish people from their voices in the same way that a sighted person can distinguish them from their looks: the possibility of confusing sounds is similar to the confusion of looks.

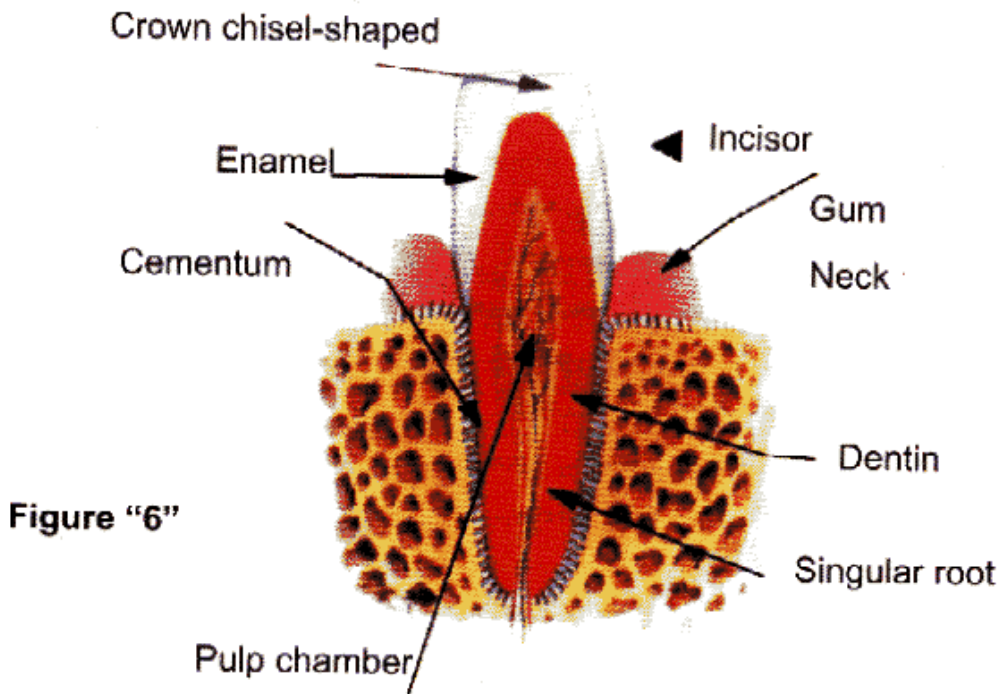


Figure "6"

A sketch of teeth, set in the upper and lower jaw-bones, each identical pair opposite to each other

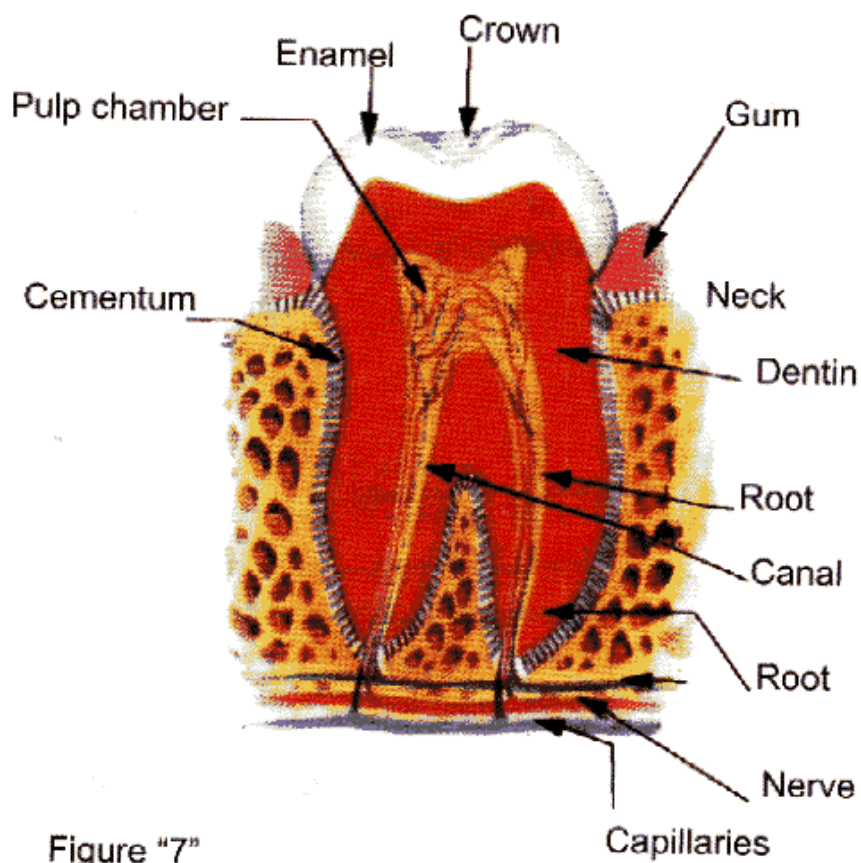


Figure "7"
Section of tooth

The hair

The Almighty Lord adorned the head with the hair, making of it a cover that is essential for the head; and adorned the face with hair at various locations and of various shapes: there are the brows, which protect the eyes from what might descend on them from the skin of the head; and He made them curved, agreeable to see. The eyelids are adorned with eyelashes. A male's face is further adorned with the beard, which gives integrity, dignity and venerability to the man; and his lips are also adorned with the moustache above and the beard below.

The hands, fingers and finger nails

The hands are another wonderful creation of the Lord's. They are a human's main instrument, weapon, and the means for earning a living. The arms are long enough to reach all parts of the body, and the palm is wide enough to fold and spread. It is provided with five fingers, and each finger is further divided into three phalanges, except the thumb which has two. The four fingers are placed in such a way that the thumb faces them, and so it can meet any of the fingers.¹ It does that splendidly well. The hand can,

¹ The Almighty says in the Qur'an:

﴿ اَيْحَسِبُ الْاِنْسَانُ اَلَنْ يَجْمَعَ عِظَامَهُ ۗ بَلَىٰ قَدْرِيْنَ عَلٰى اَنْ نُّسَوِيَ بَنَانَهُ ﴾ [القيامة : ٣ ، ٤]

"Thinketh man that We shall not assemble his bones? Yea, verily. Yea, We are able to restore his very fingers!" (75:3,4) No two fingerprints of any two humans are identical in the whole world, or over the span of history. No two people in all the billions of humans now on the surface of the earth have identical fingerprints, and none will have in all the future of mankind. There is a law of biology, which is that nature, a creation of Allah, never repeats itself in the sphere of plant, animal, or man. The secret of fingerprints is accounted for by a hundred features of the fingerprints, by which their details are so numerous that it would be quite overwhelming to imagine the possibility of two prints being identical, whether between two persons or between two of any of the ten fingers of the same person. Not even twins have identical

because of this fact, be efficient in spreading and tightening, and in doing what it has to do. No other position of the fingers can be imagined to be as good, not if all mankind from the earliest times until now met to think of an alternative position. Glorified be He Who destined the hand to be in this form: He could as easily have chosen to make it like one plate, and a human would in that case not been able to carry out many tasks and actions and exact jobs like writing. He spreads his hand, and it will be a plate on which he puts things, and he closes it, over a club or another tool of strength; or he half-spreads it, and then he will have a scoop, which can be filled with a variety of things.

Then on the edge of the fingers, the Lord fixed the nails, an adornment, support and protection. They are essential for handling fine things that the fingers alone cannot pick up. In other animals the nails are claws that are the animal's weapon and the means for catching its food. Finger nails are very useful for scratching the body. So you see how the nail, which is the least worthy part of the human body, can be badly missed if one loses it. If one needs to scratch some part of the body where it itches,

fingerprints. This remarkable fact has made all countries of the world adopt fingerprints as the subject of a science that provides scientific proof in determining the identity of a person, since it was felt certain, since the beginning of this century, that fingerprints are distinctive marks of individuals. It might be sufficient to mention that the fingerprints of an Egyptian mummy were taken, and were found to be as good as a contemporary fingerprint, and that the fingerprints of a corpse found in Denmark were dated by specialists as being more than 2000 years old. All of this reminds us of the miraculous information in the following Qur'anic verse:

﴿يَلَي قَدِيرِينَ عَلَيَّ أَن نُّسَوِي بَنَاتِهِ﴾

“Yea, verily We are able to restore his very fingers!”(75: 4)

one cannot find a substitute for the nails. It is a blessing that a human can reach the spot where it itches without difficulty; even in sleep or absent-mindedness one does not need to be aware of where one needs to scratch. If one needed another to scratch for him, that other would be sure to waste time and cause trouble before finding the relevant spot.

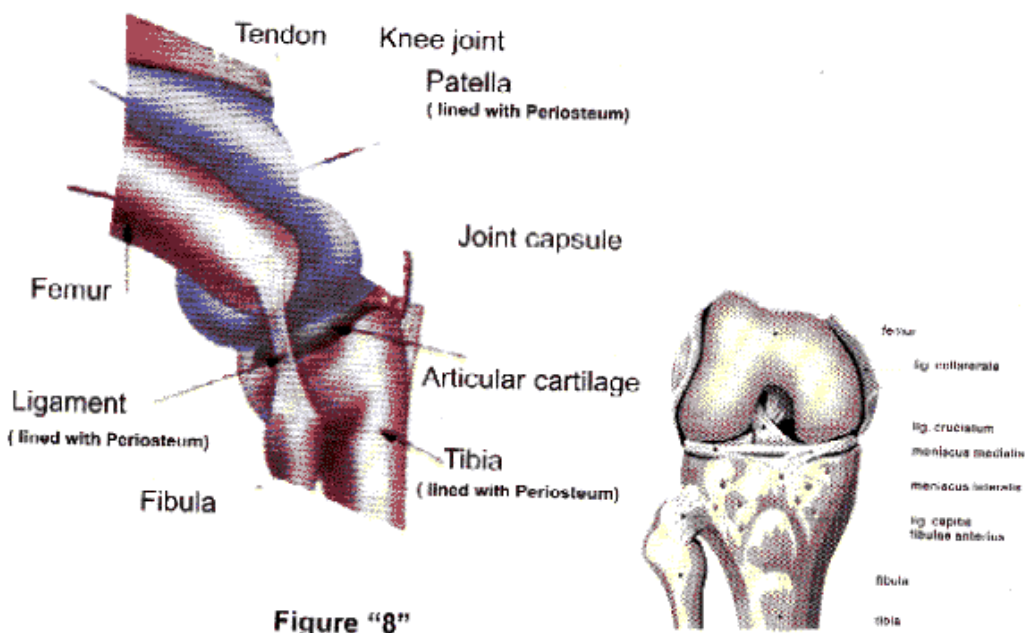
The structure of bones

Consider now the great wisdom embodied in the bones. The bones of the lower half of the body have been made sturdy and thick, since they play the part of a foundation, while the bones of the upper part are less thick and bulky, since they are not required to carry the weight. Consider then how the neck has been made a vehicle for the head to mount on, how the Lord has destined that it should have seven vertebrae, hollow and circular in the middle, how He laid them one on the other. See how each vertebra is made in perfect structure and careful position, so that they all make a compact whole like one body. See how the neck has been mounted on both back and chest, and the back has been constructed from the top to the sacrum from twenty-four linked vertebrae, all interlinked to each other, forming a meeting point for the ribs, holding them lest they become loose and get disconnected. Observe how these bones are all connected, the bones of the back are connected to the chest's, the shoulder's to the upper arms', the upper arms' to the forearms', the forearms' to the hands' and so on to the fingers'. See how the broad bones, like the back's and the head's, are sheathed in a properly shaped layer of flesh; how the thin bones, like those of the fingers and toes, with a layer of flesh that is designed to fit them perfectly; and so are the medium bones, like the upper arms' and the forearms', clothed with flesh that suits them. The total number of bones is three hundred and sixty, two hundred and forty-eight with cartilage, and

the rest are small bones that are surrounded with cartilage. The number is definite: if an extra bone is seen it needs to be extracted, and if one bone is missing, an operation to replace it is needed. When a physician observes the bones and their structure he does so to be better equipped for splinting them if necessary. A thinking person, on the other hand, considers them to find in them an embodiment of the greatness of their Maker and Creator, to better appreciate His wisdom, knowledge and gentleness. Great is the difference between the two reflections!

The Ligament

Then, verily He (Allah) fastened these limbs and parts together with fixtures (ligaments) and thereby strengthened them. And He made these connecting pieces like chords to hold these parts together and preserve them. He made them numerous so that their number reaches a total of five hundred and twenty-nine ligaments. They all differ in their tightness, precision, length, shortness, placement and direction, according to their different positioning and locations within the body. From these, He (Allah) made twenty-four ligaments that are tools for moving the eye, opening and closing it and its vision. If a single ligament of these twenty-four were to be absent, the eye would not be able to function properly. Similar is the case of every part of those that are attached by ligaments. These ligaments are like instruments, which are used by these parts to move, perform and carry out actions. All of this is from the creation of the Most Wise Lord and the ordainment of the Most Mighty, the All Knowing, that takes place in a drop of repulsive fluid (i.e., semen). Therefore, woe unto those who deny (faith) and far removed are the rejecters.



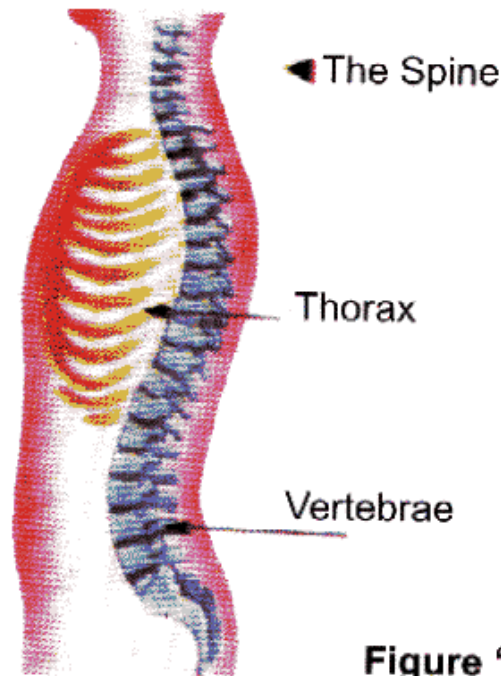


Figure "9"

The Messenger, Muhammad (ﷺ) said:

«إِنَّ فِي الْإِنْسَانِ عَظْمًا لَا تَأْكُلُهُ الْأَرْضُ أَبَدًا، فِيهِ يُرَكَّبُ يَوْمَ الْقِيَامَةِ».
 قَالُوا: أَيُّ عَظْمٍ يَا رَسُولَ اللَّهِ؟ قَالَ: «عَجَبُ الذَّنْبِ».

"Verily, in the human being there is a bone that the earth never devours. From this bone he (man) will be recreated on the Day of Judgement." They (the Companions) said: "Which bone is it O Messenger of Allah?" He replied: "The tailbone." (Reported by Al-Bukhari)

“Verily, the shin bone can withstand pressure of up to half a ton.” (Quoted from “Scientific Discovery”)

The Skeleton

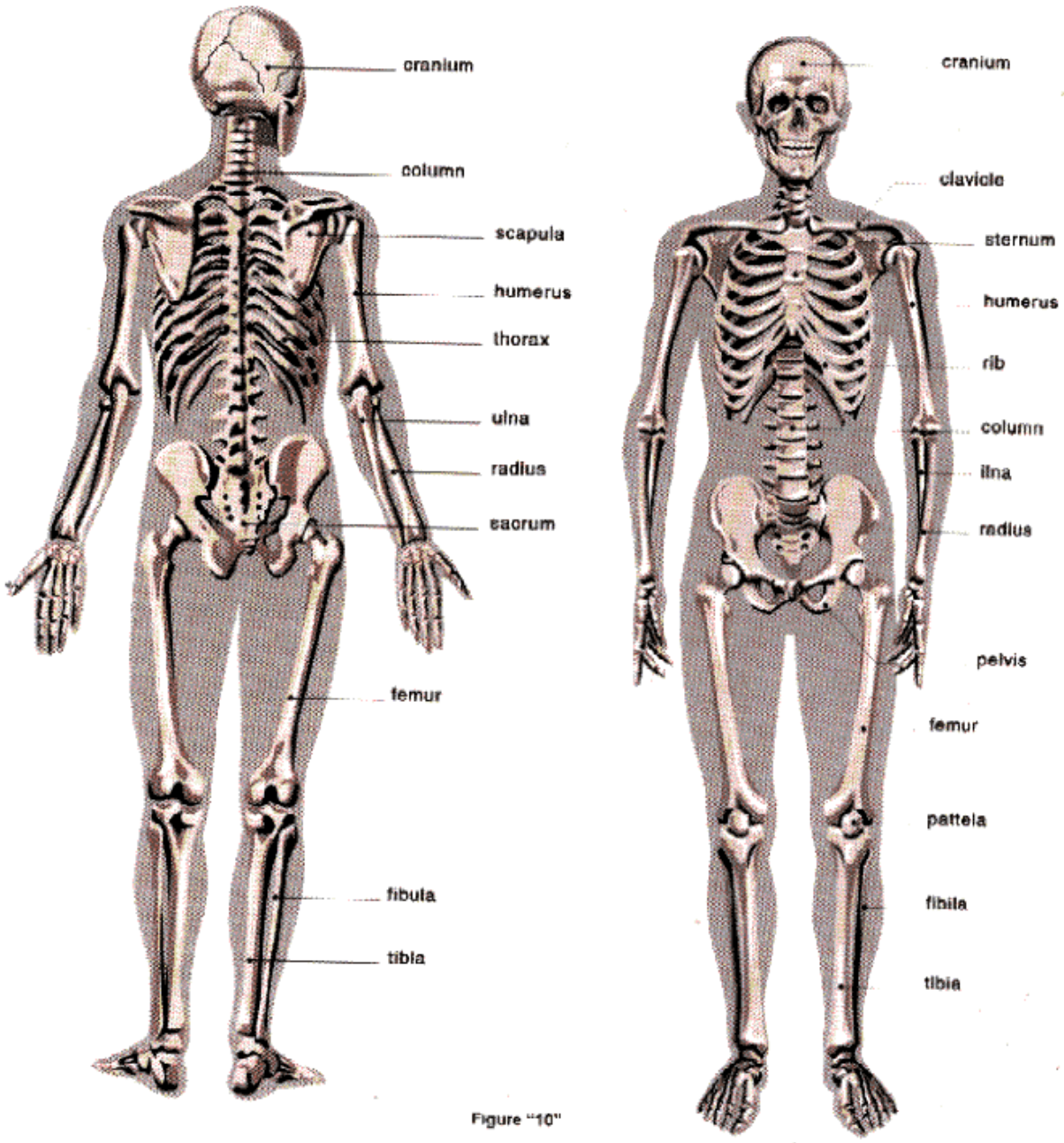


Figure "10"

The ligaments, muscles and tendons have numerous different forms. The human body contains more than six hundred muscles and more than two hundred bones. A medium sized muscle has a mass that is made up of ten million muscle fibers. The thighbone (femur) contains more than thirty thousand special calcium cells.

Likewise, the collective work of the muscles in a day is equivalent to the work of carrying twenty tons.

Allah says:

﴿ وَجَعَلْنَا لَهُمْ سَمْعًا وَأَبْصَارًا وَأَفْئِدَةً ﴾ [الأحقاف: ٢٦]

“And We made for them the (faculties of) hearing (ears), seeing (eyes), and hearts.” (46:26)

Allah also says:

﴿ صُمُّ بِكُمْ عَمًى فَهُمْ لَا يَرْجِعُونَ ﴾ [البقرة: ١٨]

“They are deaf, dumb, and blind, so they return not (to the Right Path).” (2:18)

Verily, the discussion of this has already preceded. Likewise, Allah combines between the heart and the sight, like in His statement:

﴿ وَنُقَلِّبُ أَفْئِدَتَهُمْ وَأَبْصَارَهُمْ ﴾ [الأنعام: ١١٠]

“And We shall turn their hearts and their eyes.” (6:110)

Also, there is His statement concerning the truthfulness of His Messenger, Muhammad (ﷺ):

﴿ مَا كَذَبَ الْفُؤَادُ مَا رَأَى ﴾ [النجم: ١١]

“The (Prophet’s) heart lied not in what he (Muhammad) saw.” (53:11)

Then, Allah went on to say:

﴿ مَا زَاغَ الْبَصَرُ وَمَا طَغَى ﴾ [النجم: ١٧]

“The sight (of Prophet Muhammad) turned not aside (right or left), nor it transgressed beyond the limit.” (53:17)

Similar is the case of the ear, for it is its (the heart’s) messenger that brings (information) to it. Likewise is the tongue, for it is its interpreter (to express itself). In general, all of the bodily parts are its (the heart’s) servants and its soldiers.

The Prophet (ﷺ) said:

«أَلَا إِنَّ فِي الْجَسَدِ مُضْغَةً إِذَا صَلَحَتْ صَلَحَ لَهَا سَائِرُ الْجَسَدِ، وَإِذَا فَسَدَتْ فَسَدَ لَهَا سَائِرُ الْجَسَدِ أَلَا وَهِيَ الْقَلْبُ».

“Verily, there is in the body a piece of flesh, that if it is correct, the rest of the body will be correct due to it, and if it is corrupt, then the rest of the body will be corrupt due to it. Verily, it is the heart.” (Reported by Al-Bukhari and Muslim) And Abu Hurairah said: “The heart is a king and the body parts are its soldiers. So if the king does good, then the soldiers will do good. And if the king does wickedness, then the soldiers will do wickedness.” The lungs have been made as the ventilator for it (the heart) and they constantly blow on it (to keep it cool). This is because the heart is the hottest of the body parts. Rather, it is a spring of heat.

The brain and its relation to the heart

The brain or the cerebrum has been made cool. There has been much debate about the purpose behind this fact. Some have said: The brain is made to be cool to lower the temperature of the heart, so that it balances its temperature and makes it the proper temperature. Some have denied this view with the following argument: If the brain were meant to perform this function, it would have been placed to curve around the heart, in the same way as the lungs, or to be adjacent to it, so that it lowers its temperature. The first group retorted: The brain is far from the heart, but that does not hamper the role mentioned by us. If it were close to the heart, the latter's heat would have been transferred to it. The distance bars each from spoiling the part the other plays, and so they balance each other. This is not the same for the lung, since this last is a tool for relieving the heart, not for lowering its temperature. A third group has chosen a middle ground, saying: The brain is really warm, or rather lukewarm; and it is cooling in quality, since it is the site of thinking, and thinking requires a place that is calm and stable, free from waste material and disturbance, away from bustle and turbulence, which is necessary to secure efficiency of thought, recall and right deduction. It functions optimally when the body is calm, relaxed from activity, undisturbed by distractions and irritation. All the above conditions are not realized for the heart; it is the brain which is balanced in all these respects. It will be noticed that the brain's activity is best displayed at night and in isolation, and that it is spoiled by the burning heat of anger, lust, or overwhelming care, by fatigue and the violent movements of physical or psychological powers.

The joints, muscles, and tendons have different shapes. The human body has more than 600 muscles and more than 200 bones. The average muscle consists of more than 10 million muscular fibres, and the thigh bone contains more than 30 thousand special calcium rods.

The collective action of muscles during one day is equal to a load of 20 tons.

Question: Does the action of the senses and thinking start in the brain or the heart?

In answer to the above question some have said it begins in the heart, that it is linked to it, and that there exist between the heart and the senses channels and paths. They add that each one of the sense organs is linked to the heart with nerves and other means, that these nerves set out from the heart to reach each of these sites of sense.

The above group adds: When the eye sees an object, it will transmit what it has seen to the heart, via the channels that connect it to the heart. In the same way, when the ear receives a sound, it will convey it to the heart, and that is so with all the senses.

The same group then made this inquiry: It may be asked how it is possible that one particular organ should be a reservoir of all those mixed sensations, receiving messages from the various senses, while the structure of those sense organs is dissimilar, and the kind of energy it deals with is unlike that of any other sense? Their answer to the inquiry is that all the vessels in the body reach the heart, directly or via other vessels. There is no organ or vessel but it is linked to the heart at close quarters or far. And they added: These vessels and canals carry to each organ what fits it and what is adapted to it: to the eyes there goes energy that provides it with good sight, to the ear what secures hearing, to the flesh what gives it the

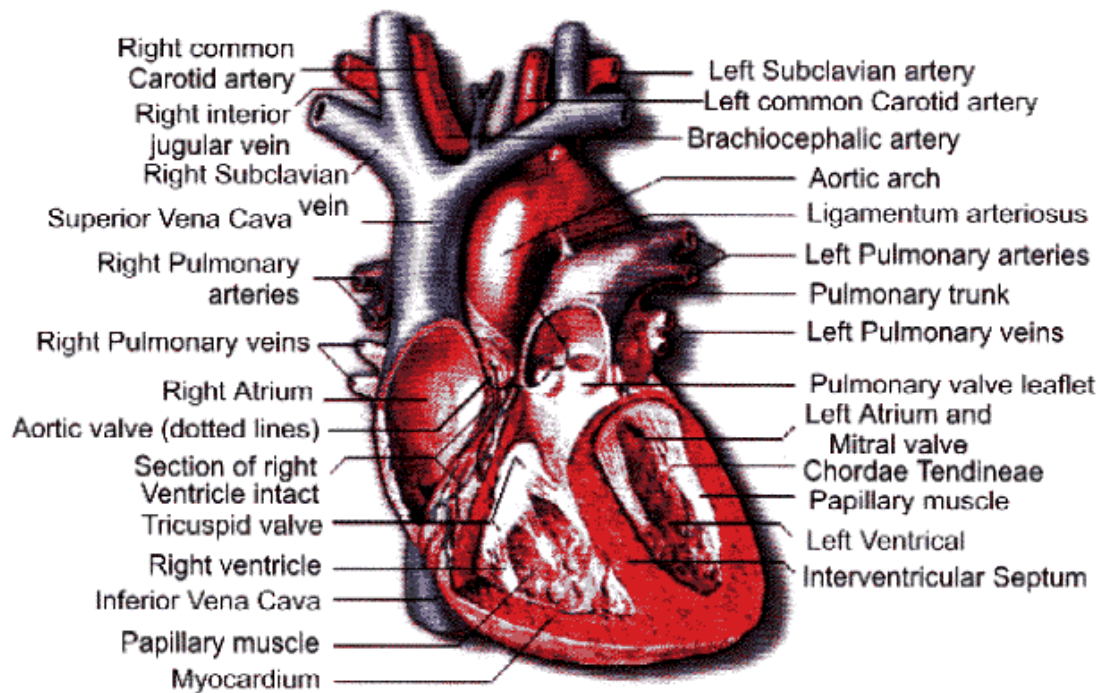


Figure "11"

sense of touch, to the nose what enables it to smell, to the tongue what makes it taste things, and to each organ what gives it its particular function and maintains it. It is the heart, then, that caters for all these organs, senses, and powers. It is right then to deduce that the heart is the first organ to form. This group adds that they do not doubt that the intellectual function emanates from the heart.

The heart has a weight of approximately 312 grams; its size is nearly that of the clenched fist. The pulse of a man's heart is approximately 60-80 beats/minute, about 40 million beats per year. In every beat, about one quarter pound of blood enters the heart, and it pumps 2200 gallons of blood every day, about 56 million gallons during a lifetime. Can you think of another machine that can perform such a stupendous amount of work for such a prolonged period, without need of maintenance?

* If the heart were employed as a lifting machine, it would lift a weight of two pounds two feet high with the same effort that it uses to pulsate once.

The blood that is pumped by the heart of a healthy man during strenuous exercise is about 20 litres per minute, and it takes one wave of blood approximately 1.5 seconds to pass through the heart, and the passage of the blood from the heart to the lungs and its return to the heart (the smaller cycle) takes six seconds.

* The heart pumps 8000 litres of blood every day in the whole blood circulation, which extends to about 150 kilometres throughout the tissues of the body, transferring blood loaded with nutrients and oxygen. To appreciate the vitality of the blood supply, it is enough to note that the brain will be irreversibly destroyed by a halt of oxygen supply for only five minutes.

Another group, though, denies this last proposition and holds that the intellectual function is in the head. The truth, however, seems to be that the intellectual function starts at the heart, then finds its elaboration and fruition in the head. One may refer to the Qur'an to support this view, as the following verse illustrates:

﴿ أَفَلَمْ يَسِيرُوا فِي الْأَرْضِ فَتَكُون لَهُمْ قُلُوبٌ يَعْقِلُونَ بِهَا ﴾ [الحج: ٤٦]

“Have they, then, never journeyed about the earth, letting their hearts gain wisdom?” (22: 46); and in another verse we read:

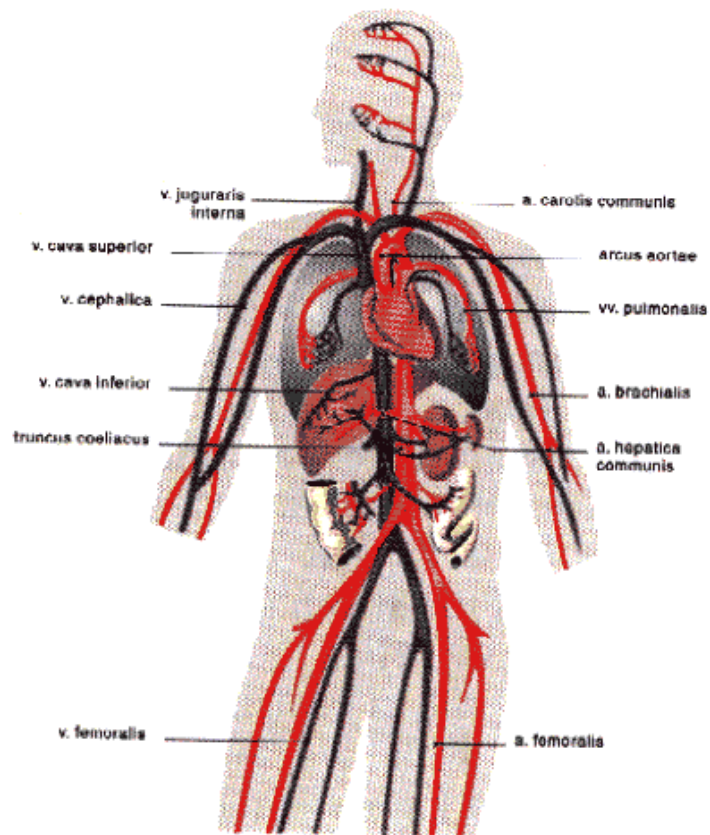
﴿ إِنَّ فِي ذَلِكَ لَذِكْرٍ لِمَنْ كَانَ لَهُ قَلْبٌ ﴾ [ق: ٣٧]

“In this, behold, there is indeed a reminder for everyone whose heart is wide-awake.” (50:37)

It should be added here that the heart described in the verses is not that muscular organ which animals possess as well as humans; it is rather one particular function of it: reflection and contemplation. Another group, though, would not accept this representation – they assert that all the senses are linked to the brain. They deny that there are nerves or vessels that connect the heart and the eye, the ear and the nose. They add that such a claim defies the concrete reality of creatures. The truth, we believe, lies between the two groups: that the heart provides energy to the senses, a non-physical energy that does not require any particular paths and nerves to be its carrier. What is required for this energy to be transmitted is that the senses and organs accept it and are receptive to it, and the heart supplies that energy without any need for paths and nerves. This view avoids the confusion that has arisen in this area and the many arguments and counter-arguments. But Allâh knows best, and I take refuge in Him to lead us to the truth. What I have been trying to do is to draw attention to just a few aspects of the wisdom embodied in the creation of man. But the full truth is manifold, more than one might imagine or think.¹ The little that we have presented here, however, is enough to awaken the mind to the great truth that lies beyond.

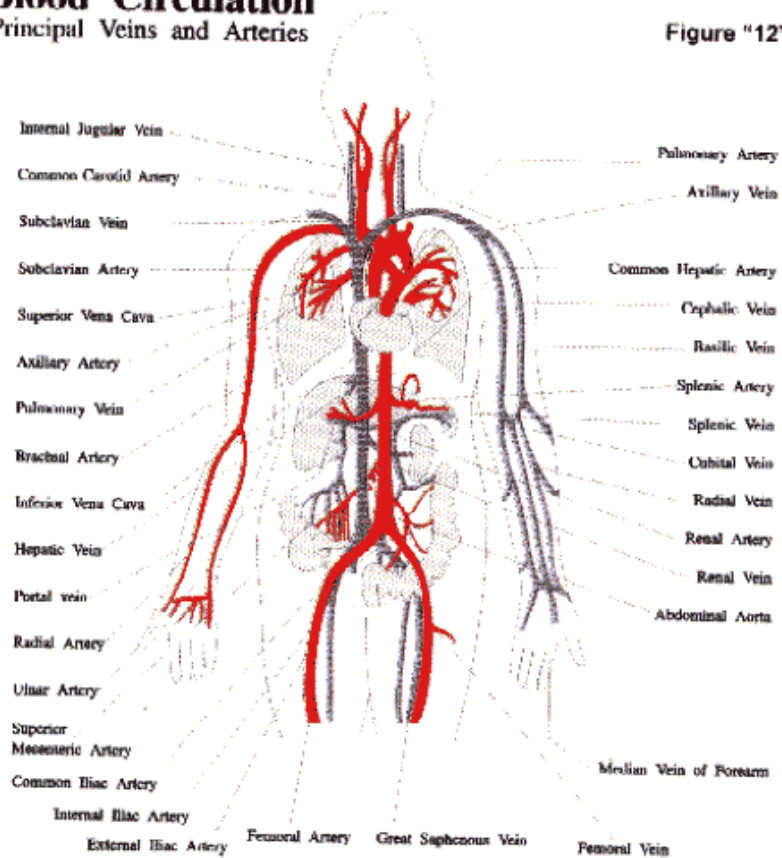
¹ Had Ibn al-Qayyem, the great scholar, had access to the modern equipment now available to medicine, such as the magnetic-based imaging (MRI) and the x-ray, along with the many sciences now focused on expanding our knowledge of physiology and the diagnosis of diseases, he would have written so cogently that any physician or intellectual would have been impressed.

The total blood contains 25 million red cells for carrying oxygen, and 25 billion white cells to resist bacteria and that are part of the immune system of the body. They are in five shapes. There are besides a million platelets to preserve the blood from bleeding and to produce coagulation in any bleeding vein. The main site for producing these cells is in the bone marrow which pours in the blood at the rate of 2.5 million red cells per second, 5 million platelets, and 120 thousand white cells. It is worth noting that the red cells transport 600 litres of oxygen to the body's cells every 24 hours. If the body receives a cut, the production of white blood cells is increased ten times, as every white blood cell produces anti-bacteria toxin, and can devour 40 bacteria.



Blood Circulation
Principal Veins and Arteries

Figure "12"



The digestive system

By just turning his attention to his food, the way it is taken in, the way it is held inside, and the way it is excreted, a human being will find many lessons and wonders. He can see how he has been provided with a tool to pick up the food, a gate to pass it inside, an instrument to cut it into small pieces, a grind stone to grind it and assisted with water to make a paste of it, a passage to lead it inside, very close to that of breathing, where the food passes inside and the breath passes outside, each without taking the wrong way. Then the food finds ways and paths that pass it to the stomach, which is a storage and collecting station, with two sphincters, one for passing food in and another for passing it out. The upper sphincter is wider than the lower, since the upper receives all that reaches it, while the lower is the exit for what is harmful. The lower sphincter is normally closed, so that the food may stay in the place designed for it; but once digestion is completed, that sphincter is opened (which is the reason it is called the door-keeper, while the upper is called the mouth of the stomach). Before the food reaches the stomach it is thick, but inside the stomach it is diluted and thinned. The stomach is surrounded from inside and outside with a heat that perhaps exceeds that of fire, by which the food is cooked, in the same way as the food is cooked in a pot with the water surrounding it, until solid things like stones or similar objects are dissolved, until all is semi-liquid.

Once it is liquefied, the healthy part of the food, or chime, floats to the top, and the residue sinks to the bottom. There are vessels from the stomach to all parts of the body to communicate certain facts about each organ, its nature and structure, which control its receptiveness and acceptance. The stomach sends the softest parts of chime to the softest organs. It provides sight to the sight-

organ, hearing to the hearing-organ, smell to the smelling-organ, and so on to each sense organ according to its need. This is the softest product of food. And then it sends to the brain what is adapted to it in softness and balance, while the rest is sent to the other parts of the body through the various paths, each getting what it needs for nourishment and maintenance: the bones, the hair, the finger-nails, etc. How the food passes into the stomach through ways and paths, and leaves it through ways and paths, all that is a phenomenon of great wisdom and exceeding bounty. After it undergoes the digestive processes in the stomach, the food is transformed into blood, and into black and yellow bile. The Lord in His sublime judgement has willed that each of these humours should have a collecting station to pour into, and collect there, so that nothing but the most refined elements of the food should reach the noblest organs: therefore the gall bladder absorbs the yellow bile, the spleen the black bile, and the liver absorbs the purest part, the blood, which it passes on to all parts of the body via a single vessel that later divides into many branches. And so each single hair, neuron, bone, and vessel gets what ensures its survival.

The Digestive System

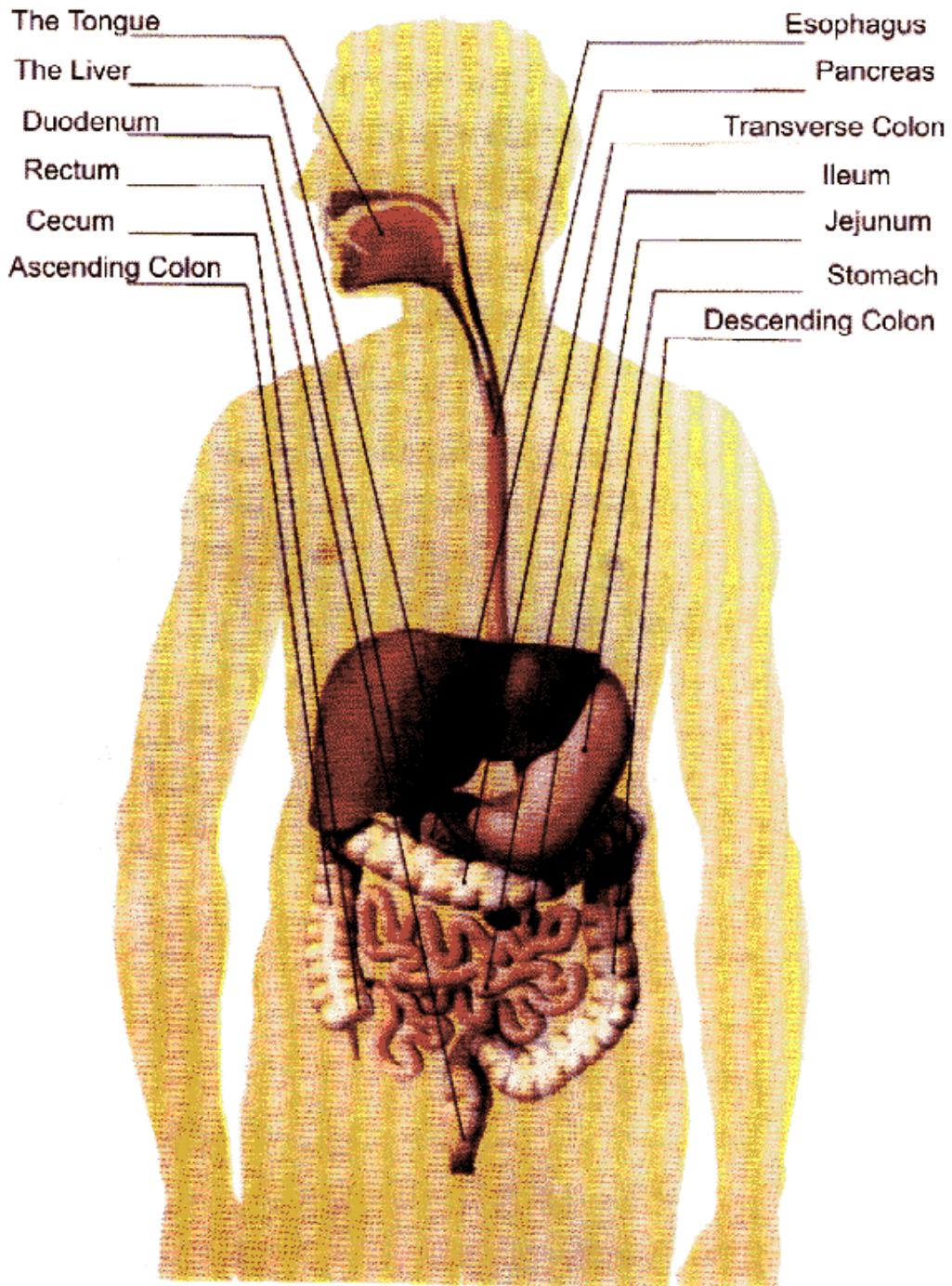


Figure "13"

The stomach and intestine

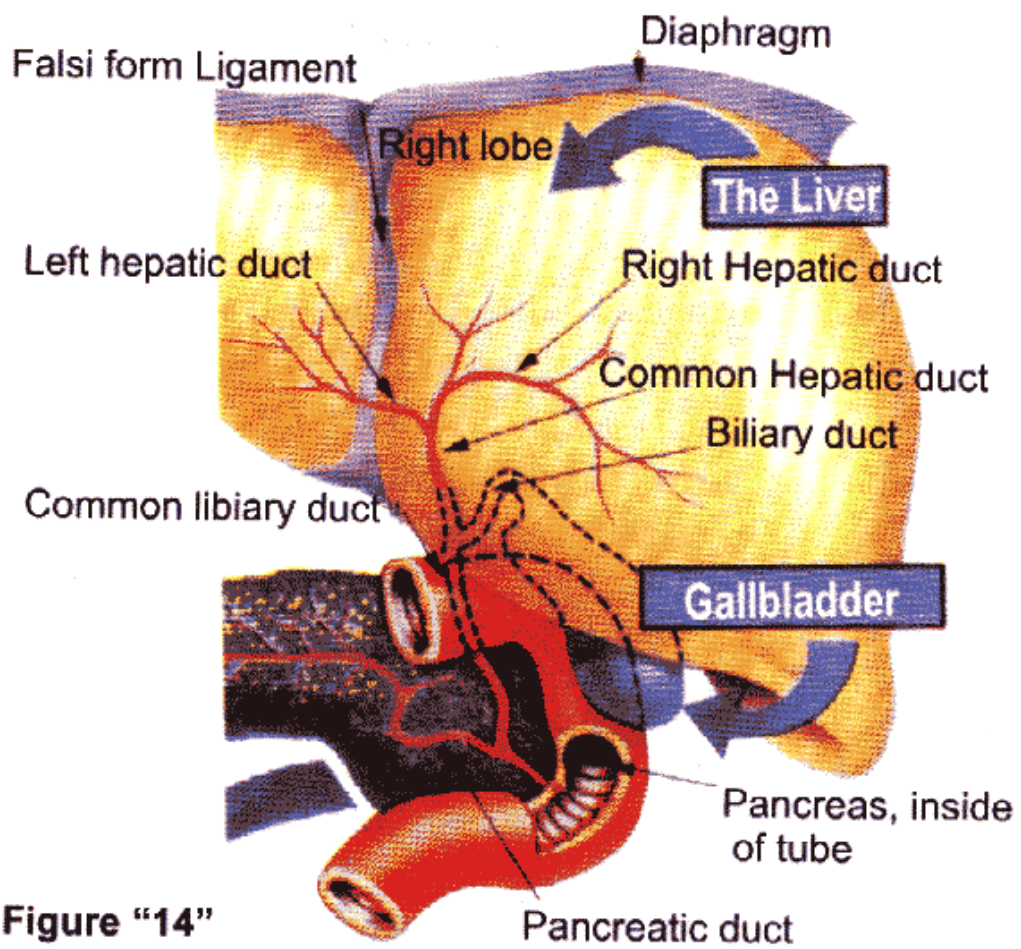
* The stomach has 35 million secreting glands, and the intestine has 3600 villi for absorption in each square centimetre.

* It is established by science that a gastric cell has a life span of 48 hours, and the gastric cells are continually replaced by new ones, a process that has nothing that resembles it, except for the renewal of blood. The small intestine is 8 metres long, and has a surface area of 40 square metres for maximum capacity of absorption, which is performed by the billions of villi on its inside lining. All kinds of nutrient material are absorbed, water, salts, vitamins, and even some harmful materials.

* The gastric cells that secrete hydrochloric acid are estimated to be one billion cells. Induced with histamine, they have a secreting capacity of 16 millilitres in 12 hours.

The liver

The liver is considered the body's largest gland, weighing about 1500 grams and consisting of 300 billion cells, which may be completely renewed in a period of four months, faster than the embryo's cells which are known for their fast renewal. The liver's functions are amazingly numerous, ranging from storing glycogen, fats and vitamins to detaining toxic substances and converting them to safe substances, or converting waste substances like ammonia from the protein waste to uric acid, a non-toxic substance. The liver is also the main centre for supplying the blood with glucose and blood proteins, enabling the blood to clot by producing fibrinogen. It also produces pigments, and forms cholesterol in its seven types.



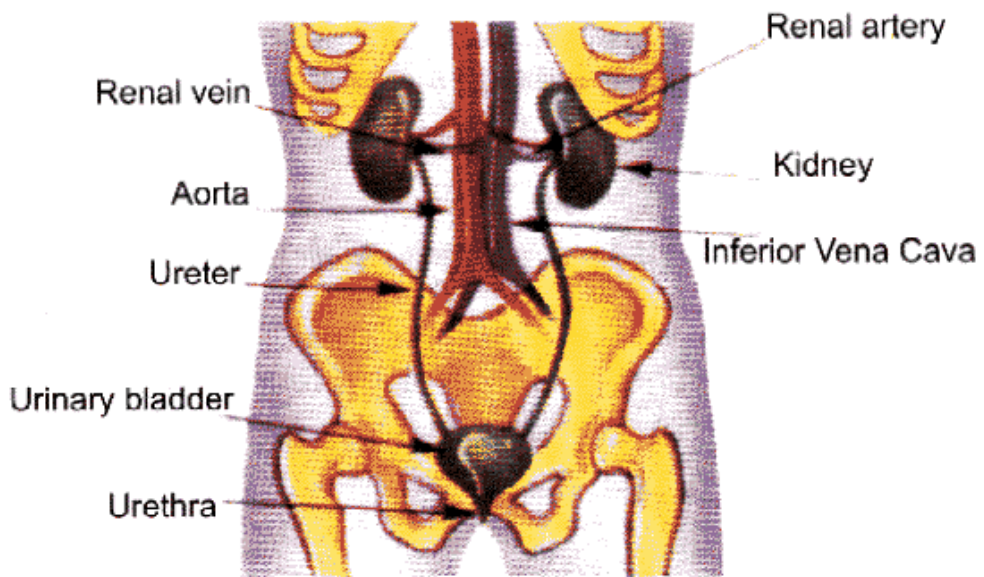


Figure "15"

The kidney

Each kidney weighs 150 grams. It contains one million blood-filtering units, known as nephrons. Over a period of 24 hours, 1800 litres of blood pass through the kidney, 180 litres of which are filtered, the greater part of which is reabsorbed, and approximately 1.5 litres of which are excreted in the form of urine. The tubules that receive urine from the nephrons have a collective length of 50 kilometres. The blood is thus wonderfully purified of all its waste matter. It is as if we see the workmen of the municipal council cleaning the streets not once per day, but rather 36 times or more. The functions of the kidneys, however, are not confined to filtering; they have a warning system that alerts the bone marrow to regulate the secretion of red cells. They also have, in collaboration

with the liver, an organizing system of blood pressure. Each kidney is topped with another gland, weighing seven grams, called the adrenal gland, whose cortex secretes scores of hormones that regulate glucose, salts and water in the body, and control the sex impulse. The core of this gland secretes adrenaline, a hormone that regulates blood pressure.

Who Took So Much Care of You?

Look then at yourself again, and think: Who took such great care of you - since you were a foetus in the belly of your mother, in a place where no hand could extend help to you, and no eye could reach you? You had then no way of seeking food or fending for yourself. Who caused the mother's blood to supply you with the nutrients that you needed, as a plant is nourished by nutrition-rich water, and how was that blood turned into milk? He sustained you in the narrowest of places, least capable of providing or gratifying your needs; He supplied you until your creation was consummated and brought to its perfect destination. When your skin was judged to be strong enough to be exposed to air, your eyes strong enough to meet the light outside, and your bones were sturdy enough to withstand the touch of hands and life on earth, your mother had the labour that ushered you out into the world of ordeals, with all its attendant hardships. It was then that your mother's womb ejected you in a way as if it had never embraced you, as if it had never held you from the day it accepted you as a drop until the day of ejection. It once used to enjoy having you in its fold, and now it screams in pain, and complains to the Lord about the burden that is you. So Who allowed you in it in the first place? Who made it enfold you and protect you until you grew to the right stage? And then He opened that gate and expanded it, for you to exit in the twinkling of an eye? You were not suffocated with its narrowness, and you were not

held by the hardship of your passage through it. If you contemplate your entrance through that gate and then your exit through it, you will have enough to wonder at: Who inspired it to tighten when you were a drop so that you would not be infected, and later had it expand and open wide for you to exit strong and healthy? Then you came out alone, unescorted, weak, without shelter, or clothing, or property, or money: you were the neediest, weakest, and poorest of creatures. But He ordered the nourishment that you received inside to be transformed into milk preserved in two reservoirs hung on the breast of your mother. She bears your nourishment on her breast as she bore you inside her belly. Milk flows to those two reservoirs for you in the subtlest way through paths that have been predesigned to carry it; it pauses in those paths until the milk already in the reservoirs is exhausted, and then a replenishment is provided for you to suck. It is like a well that is never depleted, and is never blocked, running to you through obscure ways, untrodden ways! Who led it to follow those ways? Who purified it and gave it a delicious taste? Who chose its agreeable colour and made it to perfection? It is neither too hot nor too cold, neither bitter nor salty nor foul of scent. It is a feeding that is unlike that of the womb, different in quality and in nourishment. It reaches you when you need it badly, when you are extremely thirsty and hungry. It is a combination of drink and food. You just smacked your lips at the time of birth, and moved your lips seeking sucking, and you found the breast reaching down to you, like a water-vessel, anxious to satisfy your desire with its flowing milk. The teat at its tip is just the right size for your mouth, neither too big for it, nor uncomfortably small. The pore at its tip is just big enough for your convenience, neither big in a way that suffocates you, nor small in a way that you need to exert yourself in sucking at it; it is just the amount that the Great Judge has arranged to fit your convenience. Who

directed the mother's heart to have all that extraordinary compassion for you and amazing mercy, so that she dedicates to you the warmest, most convenient and the most precious of her devotion. On the slightest crying or complaint you make, she will every time put your pleasure before hers, even if that happens every moment. She would come obediently to attend to your needs, without any call or exhortation but the call of her mercy and the exhortation of her compassion. She wished that any affliction you suffered were inflicted on her body, that not the slightest pain should come to you, that years may be cut off from her life and added to yours. Who made her feel like that? And then, after your body grew robust, your intestine expanded, your bones stiffened, and you needed tougher food, to solidify your bones, and strengthen your flesh, He supplied you with the tool of cutting and grinding, the incisors that cut the food, and the molars that grind it. Who held back the growth of your teeth while you were a sucking infant, out of mercy for your mother, and then let them out at the time you needed them, out of mercy for you, as a blessing and a boon to you? How would it be for your mother if you were born with incisors, canine teeth and molars? And if you lacked the same at the time you needed them what would you have done with the foods that are not digestible before they are cut and ground? Observe how the stronger you grew, and the more you needed teeth to eat various nutrients, those tools in your mouth were increased, until you had canine teeth, that can stand the tearing of meat, the cutting of bread, and the breaking of solid foods. And after you grew stronger, stronger teeth were provided for you, until you had the grinders, the hindmost of the molars. So who bestowed on you all these tools and provided you with them and enabled you to work on all sorts of food?

In His vast judgement, the Lord willed that you emerge from your mother's belly knowing nothing, a blank that has no intellect, no comprehension and no knowledge. This is really His mercy, since you, in your frailty, would not stand thinking, comprehension and knowledge: they would have shattered you. He rather evolved that gradually in you, step by step, so that it does not overwhelm you should it come in one blow. It grows in you little by little until it is fully grown. You may see an illustration of this in the infant who is snatched into slavery from its parents and from home before it has understanding: you see how it does not mind at all, while the more understanding it has, the more it feels the blow of bereavement. An adult taken into slavery is seen to be like one dazed and obsessed. Consider also that if you were born with your full intellectual power your life would have been one of great misery and vexation, for in that case you would see yourself a newborn, lactating infant, swaddled in some pieces of cloth, confined in your cradle, frail and unable to act, unlike the older people around you. So what would life be like in that state? Besides, you would not in that case have that sweetness, loveliness and appeal to all hearts and the affection that people have for the very young; you would rather be the most unpopular, burdensome, stubborn and curious of creatures. That you entered this world as a dullard who understands nothing, who knows nothing about what people engage in, has been sheer mercy and deep judgement; since you encounter things with your feeble mental power and without prior knowledge of things, and then your mental power and knowledge grow steadily and slowly, until you become familiarized with things. You practice things, and gradually overcome your bewilderment at them; then you stop being surprised and amazed at them; you begin to receive them with confidence, acting on them and taking control of them. There is even more to it than this. Who,

then, is keeping such a close watch over you, keen to attend to your progressive needs, requisites, desires and tools at the time of their arising, not before and not later?

The finger nails were bestowed on you at the time you needed them, for a variety of purposes: they support the fingers and assist them. Since most of a human's work involves the tips of his fingers, and indeed depends on them, they were provided with nails to aid them. There are other benefits, though, since you use the nail to scratch your skin and remove stains without harming the flesh beneath. And that is not all the benefit of nails.

Look also at your hair, how it adorns your head, improves its look and protects it from heat and cold, the head being the real site of the senses, since all intellectual activity and reflections about the Lord and wisdom find their final station in it. The male is

distinguished by the beard with its extensions, which is agreeable to look at, adds respect and impressiveness to its wearer, signals the growth beyond youthful years and marks the distinction from the female; while the female maintains the same smoothness of face, since this adds to her charm and sex appeal in the eyes of the man.

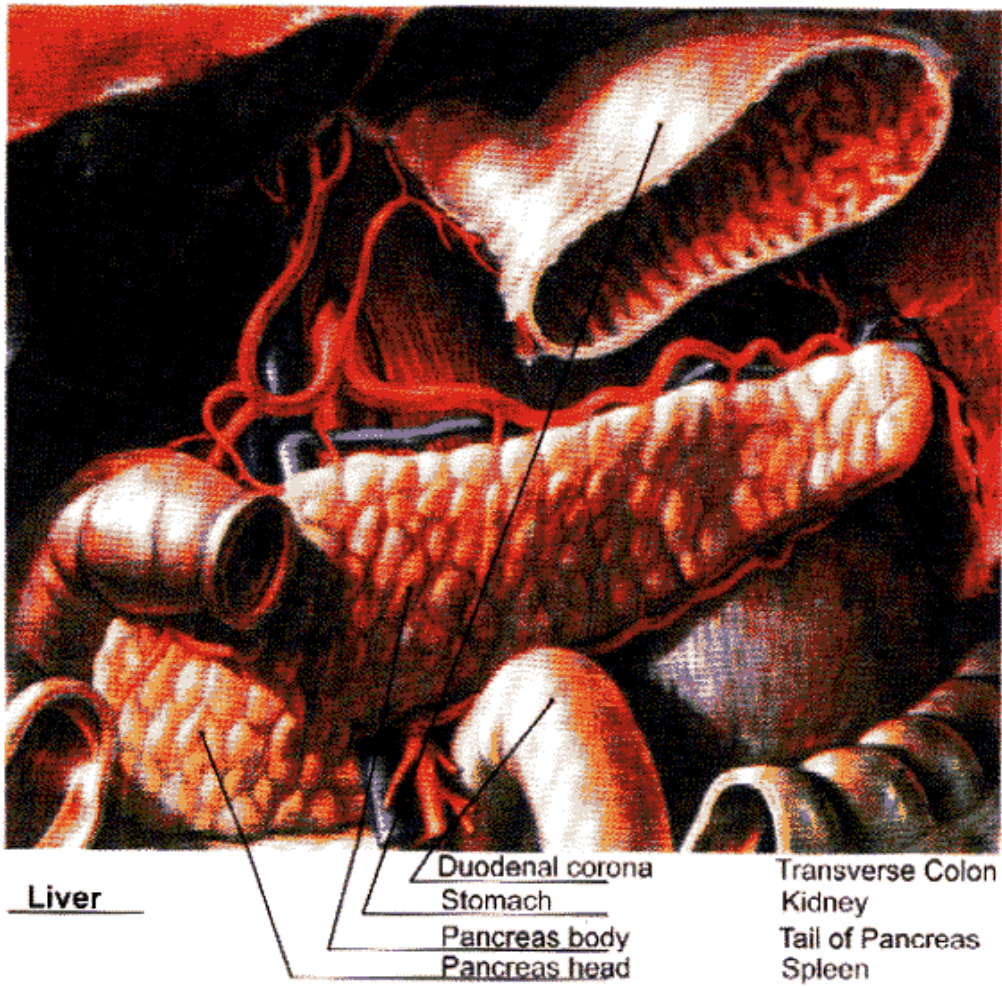


Figure "16"

The pancreas

There is in the pancreas a cluster of glandular epithelial cells for secreting enzymes that pour into the small intestine, where three types of food are digested: proteins, carbohydrates, and fats. Another cluster of cells, known as Islets of Langerhans, is connected to the blood stream. They number 200.000-1.800.000, and have four types of cells, the most important of which are the alpha cells, which secrete the glucagon

hormone which raises the level of glucose in the blood, the beta cells, which secrete insulin, whose main function is to regulate glucose in the body, or at least to facilitate delivering it to the cells, which use it as fuel for energy and heat. It should be observed that the amount of glucose is just one gram in each litre of blood precisely, which amounts to five grams in all the blood in the vessels. It does not stay in the blood more than a few minutes. The main source of supply of blood sugar is the liver, which contains glucogen, a concentrate sugar. The liver is the organ that controls the conversion of sugar, its dissolution, hydration, concentration, and dehydration.

The male and the female

Ibn al-Qayyem says:

If you think of the male and the female, you see that the liquid they are made of is the same, the structure is the same, the vessel is the same and the mating is the same. Who then gave maleness to males and femaleness to females? Let us not listen to the claims of ignorant naturalists about the cause of maleness and femaleness, who attribute this difference to natural matters that are seen to be true only occasionally; indeed, they are more false than true. In fact, maleness and femaleness only happen by Divine decree; when His command is executed by the Angel of Shaping, the latter asks the Lord: O Lord, will it be a male or a female? happy or unhappy? What about the earning? What about the span of life? And the Lord reveals whatever He chooses, and the Angel writes it down. If nature had a part in determining maleness and femaleness, it would also have a part in earning, span of life and happiness and unhappiness. It is either all or none, since all these things take place by a decree that is revealed to the angel. We do not deny that there are other

reasons for these things, but they are reasons that are uniquely Allah's; humans have no control of them. One may cite the following verse from the Qur'an in this connection:

﴿لِلَّهِ مُلْكُ السَّمَوَاتِ وَالْأَرْضِ يَخْلُقُ مَا يَشَاءُ يَهَبُ لِمَن يَشَاءُ إِنثًا وَيَهَبُ لِمَن يَشَاءُ الذَّكَورَ ۝ أَوْ يَزُوجُهُمْ ذَكَرًا وَإِنثًا وَيَجْعَلُ مَن يَشَاءُ عَقِيمًا إِنَّهُ عَلِيمٌ قَدِيرٌ﴾

[الشورى: ٤٩، ٥٠]

“Allâh's alone is the dominion over the heavens and the earth. He creates whatever He wills: He bestows the gift of female offspring on whomever He wills, and the gift of male offspring on whomever He wills, or He gives both male and female to whomever He wills, and causes to be barren whomever He wills: for, verily, He is all-knowing, infinite in His power.” (42: 49-50)

He mentioned in the above verses four types of women in relation to child-bearing: the woman who will have only girls, the one who will have only boys, the one who will have both boys and girls, and the sterile one, who will have no children at all. One proof that demonstrates that the cause of maleness and femaleness cannot be known by humans, nor can it be inferred by deduction and reflection,¹ but is rather learned from revelation, is a tradition of the Prophet's, reported in Sahih Muslim on the authority of Thawban, who said:

¹ In support of this, it may be observed that modern science has discovered that the cause of maleness and femaleness is found in one of the 23 chromosomes of the man's semen, which fertilizes the woman's cell (the egg), which also contains 23 chromosomes. When both cells unite, the total number of chromosomes will be $23 + 23 = 46$, the components of the first cell of the new human being.

I was once with the Prophet ﷺ when a Jewish rabbi came and said: Peace be upon you, O Muhammad! I pushed him (says Thawban) with such violence that he nearly fell to the ground. So he asked: Why do you push me? I said: Why don't you say in your greeting 'O Messenger of Allah?' The Jew said: We call him by his name, the one that his family gave to him. The Messenger of Allah, peace be upon him, said:

«إِنَّ اسْمِي مُحَمَّدٌ الَّذِي سَمَّانِي بِهِ أَهْلِي»

My name is Muhammad, the one my family gave to me. Then the Jew said: I come to ask you. The Messenger said:

«أَيَنْفَعُكَ شَيْءٌ إِنْ حَدَّثْتُكَ؟»

Will you benefit at all by what I tell you? He said: I will hear with my ears. The Messenger, peace be upon him, pushed a stick that he held in his hand in the ground, and said: «سَلْ» Ask! The Jew said: Where will people be when the earth will be changed to a different earth, and so will the heavens? The Messenger of Allah, peace be upon him, said:

«هُمْ فِي الظُّلْمَةِ دُونَ الجِسْرِ»

They will be in the darkness, before the bridge. He said: And who will be the first people to pass? He said:

«فُقَرَاءُ المُهَاجِرِينَ»

The poor emigrants. He said: And what will they have for a treat at their entrance? He said:

«زِيَادَةُ كَبِدِ حُوتِ ذِي التُّونِ»

The appendix of the liver of the whale of Dhul-Noon. He said: And what will their food be next to that? He said:

«يُنْحَرُ لَهُمْ نَوْرُ الجَنَّةِ الَّذِي كَانَ يَأْكُلُ مِنْ أَطْرَافِهَا»

An ox that grazes at the outskirts of paradise will be slaughtered for them. He said: And what will they drink with it? He said:

«مِنْ عَيْنِ تُسَمَّى سَلْسَبِيلًا»

A drink from a spring that is called Salsabeela. He said: You tell the truth! I'm also going to ask you about something that only a prophet in addition to one or two men would know. He said:

«يَنْفَعُكَ إِنْ حَدَّثْتُكَ؟»

Would it do you any good if I tell you? He said: I hear with my ears. Then he added: I come to ask you about the baby. He said:

«مَاءُ الرَّجُلِ أَبْيَضُ وَمَاءُ الْمَرْأَةِ أَصْفَرُ، فَإِذَا اجْتَمَعَا فَعَلَا مَنِ الرَّجُلِ مَنِ الْمَرْأَةِ ذَكَرٌ بِإِذْنِ اللَّهِ، وَإِنْ عَلَا مَنِ الْمَرْأَةِ مَنِ الرَّجُلِ أَنْثَى بِإِذْنِ اللَّهِ.»

A man's liquid is white, and a woman's liquid is yellow. If, when they meet, the man's semen dominates, then they will have a male, by the will of Allah; and if a woman's liquid dominates, then they will have a female, by the will of Allah. The Jew said: You have told the truth, and you are a true prophet. Then he left. The Messenger of Allah ﷺ said:

«لَقَدْ سَأَلَنِي عَنْ هَذَا الَّذِي سَأَلَنِي عَنْهُ وَمَالِي عِلْمٌ بِهِ حَتَّى أَتَانِي اللَّهُ بِهِ»

When this man asked about what he asked, I knew nothing about it until Allah told me of it.²

Both reason and authority prove that a foetus is created from both liquids. A man ejects his liquid into a woman's womb, and her liquid also flows to where his

² Reported by Muslim and Al-Nasa'ee.

liquid is, so the liquids meet, for Allah's will to come true. The baby will be the outcome of the two liquids, and it will resemble more the parent whose liquid dominates. In evidence of this, we have a tradition, reported by Al-Bukharee in his "Saheeh", on the authority of Humaid, quoting Anas, who said: Abdullah bin Salam was told of the arrival of the Prophet ﷺ in Al-Madinah. So he came up to him and said: I will ask you about three things that only a prophet would know. Then he added: What is the first sign of the Hour (the Day of Resurrection)? What is the first food that the dwellers of Paradise will eat? And what will determine when the baby will take after its father, or take after its maternal uncles? The Messenger of Allah ﷺ said:

«أَخْبَرَنِي بِهِنَّ أَنْفَا جِبْرِيلُ»

Jibreel (Gabriel) has already told me about these things. (Abdullah put in here: that, among the angels, he is the Jews' enemy.) The Messenger ﷺ went on:

«أَمَّا أَوَّلُ أَشْرَاطِ السَّاعَةِ فَنَارٌ تَحْشُرُ النَّاسَ مِنَ الْمَشْرِقِ إِلَى الْمَغْرِبِ . وَأَمَّا أَوَّلُ طَعَامٍ يَأْكُلُهُ أَهْلُ الْجَنَّةِ فَرِيزَادَةٌ كَبِدِ الْحُوتِ . وَأَمَّا الشَّبَهُ فِي الْوَلَدِ فَإِنَّ الرَّجُلَ إِذَا غَشِيَ الْمَرْأَةَ وَسَبَقَهَا مَاؤُهُ كَانَ الشَّبَهُ لَهُ، وَإِنْ سَبَقَتْ كَانَ الشَّبَهُ لَهَا» فَقَالَ: أَشْهَدُ أَنَّكَ رَسُولُ اللَّهِ.

As for the first sign of the Hour, it will be a fire that will drive people from the east towards the west. As for the first food of the dwellers of Paradise, it will be the appendix of the whale's liver. As for the baby's taking after its father, it is when the man has intercourse with the woman, and his liquid has dominance over hers. When her liquid has dominance over his, the baby will be more like her. He said: I testify that you are the Messenger of Allah, etc.

More evidence can be found in another tradition reported in both "Saheehs" of Al-Bukharee and Muslim, on the authority of Umm Salamah, who said: O Messenger of Allah, Allah is not shy of disclosing the truth, so I ask you, should a woman take ghusl, 'ritual bath', if she had seen a sexual dream? He said:

«نَعَمْ، إِذَا رَأَتْ الْمَاءَ الْأَصْفَرَ».

Yes, if she sees the yellow liquid. She laughed and said: But does a woman have a wet dream? The Messenger of Allah, peace be upon him, said: «فَبِمَ يُشَبِّهَهَا الْوَلَدُ؟»

How is it, then, that her baby resembles her?

The above three traditions prove that a baby is created from both liquids, that maleness and femaleness are determined by one of the liquids dominating the other and having precedence over it, and that resemblance is determined by one of the liquids having precedence over the other, which means that the liquid which reaches the womb first will determine whom the baby will resemble. Such things are not known to the naturalists, and there is no way to learn about them but from revelation. Nor is there in their scholarship anything that contradicts these notions. There is, however, about the tradition reported on the authority of Thawban some doubt in my mind: it may be that someone in the chain of reporters was not accurate in his memorization, that the real question had originally been about resemblance rather than about maleness and femaleness, as in the tradition in which Abdullah bin Salam is the inquirer. That might be the reason for Al-Bukharee not reporting Thawban's tradition.

There is in the two 'Saheehs' (of Al-Bukharee and Muslim) a tradition reported on the authority of Abdullah bin Abu Bakr, reporting Anas, who reported the Prophet ﷺ as saying:

«إِنَّ اللَّهَ وَكَلَّ بِالرَّحِمِ مَلَكًا يَقُولُ: يَا رَبِّ نُطْفَةٌ، يَا رَبِّ عَلَقَةٌ، يَا رَبِّ مُضْغَةٌ. فَإِذَا أَرَادَ أَنْ يَخْلُقَهَا قَالَ: يَا رَبِّ أَذَكَرٌ أَمْ أُنْثَى؟ شَقِيٌّ أَمْ سَعِيدٌ؟ فَمَا الرِّزْقُ؟ فَمَا الْأَجَلُ؟ فَيُكْتَبُ كَذَلِكَ فِي بَطْنِ أُمِّهِ».

“Allah has appointed an angel to be in charge of the womb. The angel says: O Lord! Now it is a drop of semen, now it is a clot, now it is a little lump. And when He wills to create it, the angel says: O Lord! A male or a female? Happy or unhappy? What about earning? What about span of life? So all that is written down when a baby is still in its mother’s belly.”³ You see here how the Prophet ﷺ attributed maleness and femaleness entirely to the Divine will, and attached it to matters with which nature has nothing to do: happiness and unhappiness, earning and span of life. The angel who wrote it down had not inquired about anything that is connected with nature. Do you not see that Abdullah bin Salam only inquired about resemblance, for which an answer can be obtained, not about maleness and femaleness, although it is more impressive than resemblance. Allah, however, knows best. If what has been reported was actually uttered by the Messenger of Allah ﷺ then it is absolutely true. In any case, both versions discredit the naturalists’ claim of their knowing the cause of maleness and femaleness. But Allah knows best.

³ Reported by Al-Bukharee and Muslim.

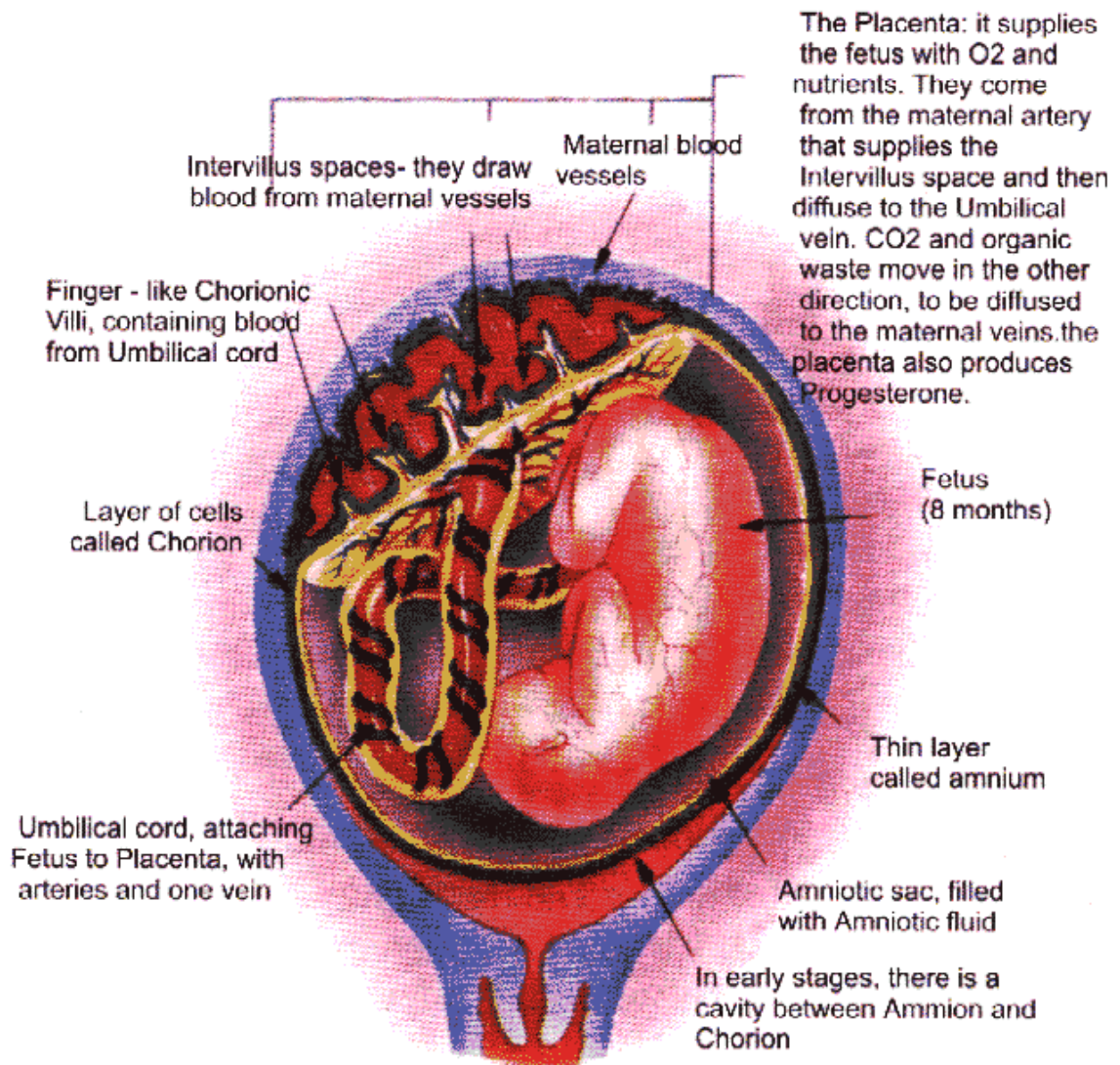


Figure "17"

The tools of reproduction in humans

Consider how the tools of reproduction of both the male and the female have been created to the best advantage. The man's is a protruding tool that extends so that it delivers the semen to the gate of the womb, in the same way as one hands something to another, stretching one's arm for the other to collect it. That is so because the semen must be ejaculated in such a way to reach the womb. The female, in contrast, has a hollow vessel, because she needs to receive a man's liquid, to hold it and keep it, and the tool she has is perfectly adapted to those functions. Because a man's liquid emanates from a man's various organs having low density, weak, not yet fit for the creation of the baby, the testes have been designed to be a pot where the liquid is processed and brought to a mature form, so that it concentrates and thickens, in order to be a suitable basis for the formation of the embryo. The woman, on the other hand, does not experience similar processes, since a man's liquid, in its thickness and density, meets her low-density liquid, and the latter then gains richness from the man's liquid. If both liquids were light and diluted, they would not have resulted in the creation of the baby. The man has been privileged with the mechanism of processing and condensing because he is more energetic, in contrast to the cool female. If she were entrusted with that tool, her disposition would not have facilitated the processing and maturation of the liquid. Another reason is that her liquid remains in its place, flowing from between her ribs until it settles in its designated place. A third reason is that because she is the receiver of intercourse, she has been endowed with such a tool as will suit her condition: she would not enjoy the intercourse if her tool were the same as the man's; the tool would remain idle and useless. And so, by being what they are, maximum advantage is realized for both parties.

Human organs from an aesthetic aspect

Consider now yourself, and think again of your physique. It will be enough for you just to do that. Contemplate every organ of your body, and consider the adaptation of each organ to the function it serves and the purpose of its existence. The arms are for handling things, grasping, collecting, handing, fighting and defending; the legs are for carrying the body, walking, riding and standing upright; the eyes are for exploring, beautifying, adorning, enchanting, and for observing the signs and miracles of the skies and the earth; the mouth is for eating, speaking, beautifying and other purposes; the nose is for breathing, discharging the waste matter of the brain, and adorning the face; the tongue is for speaking and expressing what you think and feel; the ears are the receivers of information which they deliver to you; the stomach is a store where food settles, so that it processes it and prepares it in a way that is unlike the cooking and preparation that it receives outside: you cook the food and prepare it on the assumption that it has received all the attention it needs to receive, that it no longer needs any further cooking or processing. But the cook inside will undertake an operation of cooking and processing that is concealed from your eyes; it performs an operation that is beyond your comprehension and ability; it exposes the food to a heat that would melt stones, and would even dissolve materials that no fire can melt. Otherwise, what breaks down those very heavy complex foods, until they become flowing liquid? Who made the liver discriminate and extract the purest and softest part of the food, then channel it into paths and ways to drive that food to each and every organ, bone, nerve, flesh, hair and nail; Who arranged gates and stages to admit what is beneficial for you, and bar that which is harmful; Who made various vessels as stores, one for food, one for blood; and arranged them to be

specialized stores, so that none should get mixed up with any other: the gall bladder is independent of the spleen bladder, and again independent of the urine bladder, and of the semen bladder. Consider the case of the food as it reaches the stomach and settles there, how it flows from there to the rest of the body. When food reaches the stomach, it keeps and holds it; it processes it and matures it properly, then forwards it to the liver in fine paths. There is a thin film that separates that matter from the liver, a kind of fine filter; by filtering it no coarse components get to the liver and pierce it, because the liver is delicate, and would not stand tough materials. Once the digested matter settles in the liver, it distributes it to the whole body in preset paths, in a way rather similar to the pipes designed to carry water to irrigate land. The rest, which is waste water, is delivered to draining lands and wastelands designed to undertake that job. In the body, the gall is delivered to the gall bladder, the black gall is delivered to the spleen, and the liquid that remains is drained to the urine bladder.

A refutation of naturalists

Who was it who managed all that, perfected it, directed it and controlled it in the best way? Someone might, if he were one of the depraved, say: "It is the work of nature; there are wonderful things in nature." To such a debater we say: If Allah had led your heart, you would yourself have refuted such a statement by replying: "Tell me about this nature, is it self-sustained, having knowledge, and having the ability to contrive those wonders? Or is it not? Is it not rather just an abstract quality and a display of the visible things around?" If the answer occurs to you: "It is an independent entity with full knowledge, ability, will and wisdom," say: What you describe is the Creator, the Author and Shaper, so why do you call Him nature? Forget about what the naturalists dictate and turn to what Allâh

has taught humans to call Him in the words of His messengers, and if you do you will be one of the happy and wise folk. Why attribute to nature the attributes that belong to Allah? If, on the other hand, the adversary says: "Nature is an abstract quality, a display in need of an agent, and all that we witness of its accomplishments is brought about without nature having knowledge, will, ability, or even the mere consciousness of what it is producing. All that we see is evidence of nature's achievements;" then the reply should be that no sane person would accept this reasoning. Do you really believe that the amazing actions and subtle contrivances that we see in the world, that no mind can fathom or fully appreciate, are made by an agent that itself has no thinking, ability, wisdom or feeling? Would anyone believe such reasoning but a madman or an animal? You may further add: "If what you claim were true, it would be clear that such an abstract quality cannot have created itself or originated itself, so Who is its Lord, Maker and Originator? Who enabled it to do all that?" This logic is a most decisive piece of evidence in favour of believing in the Originator and Maker of nature, in the infinity of His ability, knowledge and wisdom. Indeed, this group has gained nothing by denying the Lord and His Attributes and Actions. They merely abolish the intellect and innate intuition. Nature itself would discredit such logic: it in fact contradicts mind, innate intuition, nature and even humanity, and it has caused the most ignorant and deluded attitudes that one can cause. If one does concede what the mind dictates and admits that it is not possible to have wise effects without the agency of a wise, able and knowing entity; that it is not possible to have well-controlled effects without there being a maker who is able, autonomous, in control of things, aware of what he is doing, not frustrated or overwhelmed by what he is doing – if one concedes that much then the right answer to such

a person would be: What is the matter with you! When you accept the necessity of a great Creator beside Whom no other god exists, and no other lord, stop calling Him nature or the 'self-active mind' or such appellations. Say instead: What I describe is Allah, the Creator, the Originator, the Shaper, Lord of the Worlds, Sustainer of the heavens and the earth, Lord of the east and the west, He who made excellent all that He created, and perfected what He crafted. Do not deny His Names and Attributes and Self and attribute His making to another and His creation to someone else. You have to concede His existence, and attribute to Him authorship, creation, lordship and control. There is no other way, praised be Allah, Lord of the Worlds.

The meaning of nature

By reconsidering the word 'nature' in this context, you will be led directly to the Creator, the Originator, as the common mind understands the word. That is because this word 'nature' (Arabic: tabee'ah) means that something was made by someone to behave according to a preset plan, and there is no other meaning at all. The word 'nature' is of the same class of words as 'instinct', 'disposition', 'temperament', 'an animal's or a human's nature', and the like. An animal has been made to react to stimuli, a reaction which is ingrained in it. It is self-evident that a 'nature' without a 'nature-maker' is an impossibility: The very word, then, points to the Maker, the Almighty, just as its meaning indicates. Muslims believe that nature is one of Allah's creations, that it is under control, tamed, and that this is part of His law operative among His creations; that He manages it the way He wills, and when He wills, so that He may deny it any aspect of its power when He wills, and reverse any of its effects when He wills, so that His servants may see that He alone is the Creator, the Originator, the Shaper, and that

He creates whatever He wills, and in the way He wills. This is the meaning of the following verse from the Qur'an:

﴿ إِنَّمَا أَمْرُهُ إِذَا أَرَادَ شَيْئًا أَنْ يَقُولَ لَهُ كُنْ فَيَكُونُ ﴾ [يس: ٨٢]

"But His command, when He intends a thing, is only that He says unto it: Be! and it is." (36:82)

Nature, which is the utmost that those short-sighted lot can perceive, is no more than a creature of the Lord, equal in that to any of His creations. Considering this, how would a human, with the least bit of humanity or thinking, be blind to its being made to behave as it behaves, and how would he attribute to it making and originating! Time and again Allah halts its power, alters it and reverses it, so that it does the opposite of what it originally did, all to illustrate to His servants that it is His creation and making, that it is controlled by Him. That much can be supported by this verse from the Qur'an:

﴿ أَلَا لَهُ الْخَلْقُ وَالْأَمْرُ تَبَارَكَ اللَّهُ رَبُّ الْعَالَمِينَ ﴾ [الأعراف: ٥٤]

"His verily is all creation and commandment." (7: 54)

In the best stature

Have a second look now at yourself, and consider the judgement of the Gentle, the Knower, Who, when He created the body, specified for every organ its position and assigned to it its function. See the stores which He designed to gather the waste material and hold it, so that it does not stay in the body and spoil the rest of the organs. Consider the wisdom of your development and the abundance of your parts, without any looseness or disharmony! If a goldsmith or sculptor had made a statue of gold, silver or copper and then wanted to enlarge it, could he do that without first breaking the statue and recasting it? In contrast, the Lord Almighty develops a

child's body and its external and internal organs and all its parts, preserving all the time its appearance and shape, not disintegrating, not loosening, and not diminishing. Even more telling is the shaping of the embryo in the womb, where no eyes see it, and no hands touch it and no machines handle it! When he emerges he is a normal human being, with all that is requisite for his survival and progress in life: organs, senses, internal mechanisms, limbs, vessels, nerves, ligaments, membranes, and bones; all of various shapes, sizes, functions and positions; the flesh, fat, and brain with their intricate structure and subtle creation, revealing unfathomable judgement and splendid craftsmanship! It is all developed by the Best Creator from a drop of almost worthless liquid!

Reflect on what He iterated in His book concerning the beginning of creation and re-creation, calling you meanwhile to ponder over all this, for no reason but to increase the benefit you have from it and to guide you to the truth. Do not feel bored by the length of this chapter and the repetition in it, because it aims to drive the lesson home, since it is badly needed, and can prove to be greatly beneficial. Consider, then, what the Lord has privileged you with, raising you above all ignorant animals: He made you stand upright, sit comfortably, receive things, and approach any object at will, thereby enabling you to take care of things, have control of them, and manipulate them. If you were like the four-legged animals facing downward, your uniqueness would have not crystallized and come to light, and you would not have fulfilled much of your potential.

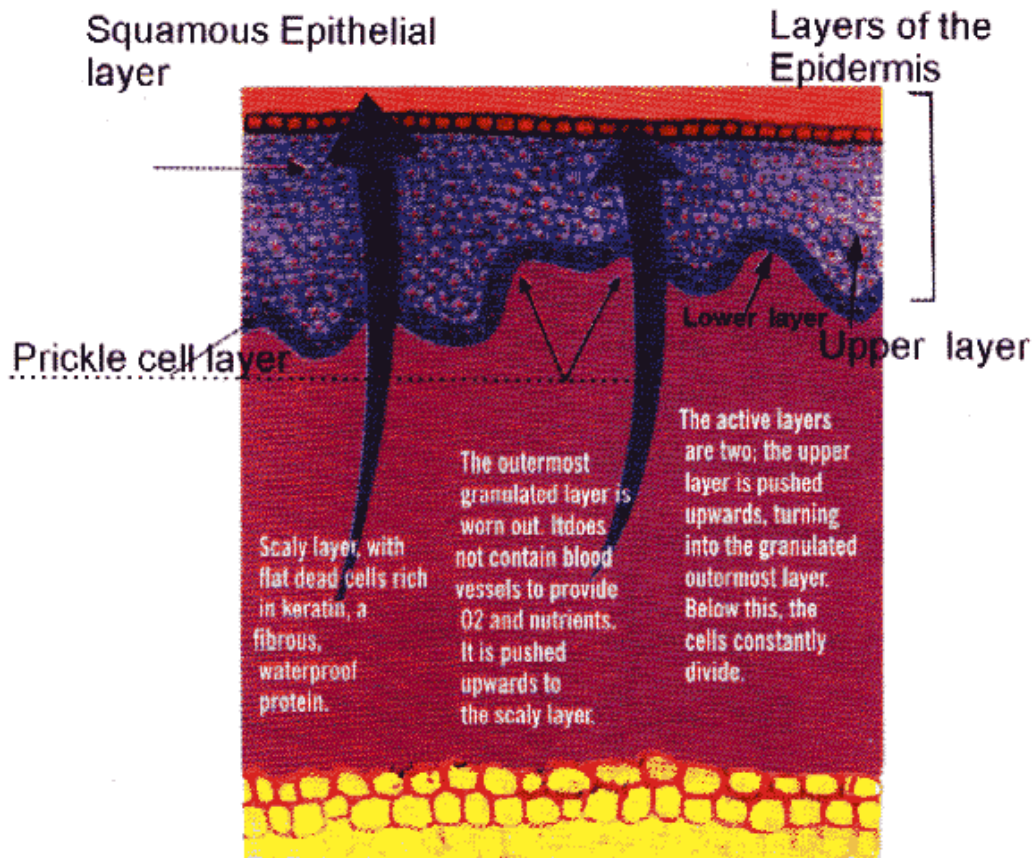


Figure "18"

The skin

* The skin's thickness ranges from .5 mm in the eyelids to 6 mm on the heels of the feet. Apart from some exceptions, like the palms of the hands and the soles of the feet, the skin is covered with hair, whose density ranges from 40 to more than 800 per cm². There are, in addition, 300 sweat pores in each square centimetre. A pore allows liquids to pass out of the body, but does not allow liquids from outside the body to pass inside, as they have one-way valves.

* There are, below the surface of the skin, about 5-15 million 'air conditioners' of the body. A sweat gland acts as a conditioner, as the evaporation of the sweat

through the skin absorbs a remarkable amount of body temperature. The skin's surface, which is 1.8 square metres, is unequally spotted with sweat glands. A sweat gland is a long twisting tubule that pumps sweat, and has special characteristics. It has a secreting capacity of about one litre per day. The total length of the sweat glands that are below the skin surface is about 4-5 kms.

Allah's honouring of man

We read in the Qur'an:

﴿ وَلَقَدْ كَرَّمْنَا بَنِي آدَمَ وَحَمَلْنَاهُمْ فِي الْوَجْرِ وَالْبَحْرِ وَرَزَقْنَاهُمْ مِنَ الطَّيِّبَاتِ وَفَضَّلْنَاهُمْ عَلَى كَثِيرٍ مِمَّنْ خَلَقْنَا تَفْضِيلًا ﴾ [الإسراء: ٧٠]

“Verily We have honoured the children of Adam. We carry them on the land and the sea, and have made provision of good things for them, and have preferred them above many of those whom We created with a marked preferment.” (17: 70)

Glorified be the Lord, who bestowed on man all aspects of honour: mind, knowledge, expression, speech, appearance, good looks, impressive aspect, fair stature, the acquisition of sciences through inference, reflection, and the upholding of righteous, decent ethics, such as loyalty, obedience and responsiveness. There is a world of difference between his state as a drop of clotted blood inside the womb, and his state when the angel will come to greet him in the Gardens of Eden!

﴿ فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ ﴾ [المؤمنون: ١٤]

“So blessed be Allah, the Best of Creators!” (23: 14)

The world is a village and a believer is its chief. Everyone is eager to work in his interest, and everybody

has been directed to serve him and endeavour to run his errands. The angels, who are bearers of the Compassionate's throne, and those around it, pray in his favour; the angels who are assigned to accompany him protect him; the angels who are entrusted with rain and plants work hard to ensure that he gets his allotted earning, and they work for that; the orbiting bodies of heaven are obediently moving to fulfill his needs; the sun, moon, and stars run dutifully in their orbits so that he may refer to them in setting his times and schedules, and in taking care of the expenses of his property; space is subservient to him – its winds, air, clouds, birds and the rest of its creatures; the earth is all controlled to be in his service, to fulfil his needs – its land, mountains, seas, rivers, trees, fruits, plants, animals and all that exists on it. This is the meaning of the following Qur'anic verses:

﴿ اللَّهُ الَّذِي سَخَّرَ لَكُمْ الْبَحْرَ لِتَجْرِيَ الْفُلُكُ فِيهِ بِأَمْرِهِ وَلِيَسْتَفْعِلُوا مِنْ فَضْلِهِ. وَلَعَلَّكُمْ تَشْكُرُونَ
 ○ وَسَخَّرَ لَكُمْ مَّا فِي السَّمَوَاتِ وَمَا فِي الْأَرْضِ جَمِيعًا مِنْهُ إِنَّ فِي ذَلِكَ لَآيَاتٍ لِقَوْمٍ
 يَتَفَكَّرُونَ ﴾ [الجاثية: ١٢، ١٣]

“Allah it is Who has made the sea of service unto you that the ships may run thereon by His command, and that you may seek of His bounty, and that haply you may be thankful; and has made of service unto you whatsoever is in the heavens and whatsoever is in the earth; it is all from Him. Lo! herein verily are portents for people who reflect.” (45: 12-13)

﴿ اللَّهُ الَّذِي خَلَقَ السَّمَوَاتِ وَالْأَرْضَ وَأَنْزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجَ بِهِ مِنَ الثَّمَرَاتِ رِزْقًا لَكُمْ وَسَخَّرَ لَكُمْ الْفُلُكُ لِتَجْرِيَ فِي الْبَحْرِ بِأَمْرِهِ. وَسَخَّرَ لَكُمْ الْأَنْهَارَ
 ○ وَسَخَّرَ لَكُمْ الشَّمْسَ وَالْقَمَرَ دَائِبِينَ وَسَخَّرَ لَكُمْ اللَّيْلَ وَالنَّهَارَ ○ وَآتَاكُمْ مِنْ كُلِّ مَا سَأَلْتُمُوهُ وَإِنْ تَعُدُّوا نِعْمَتَ اللَّهِ لَا تَحْصُوهَا إِنَّ الْإِنْسَانَ لَظَلُومٌ

“Allah is He Who created the heavens and the earth, and causes water to descend from the sky, thereby producing fruits as food for you, and makes the ships to be of service to you, that they may run upon the sea at His command, and has made of service to you the rivers; and makes the sun and the moon, constant in their courses, to be of service unto you, and has made of service unto you the night and the day. And He gives you of all you ask of Him, and if you would count the bounty of Allah, you cannot reckon it. Lo! man is verily a wrong-doer, and ingrate.” (14: 32-34)

A person who travels around seeking to learn about Allah’s bounty and to reflect on His wisdom and the splendour of His attributes is more broad-minded and a sharper thinker than the one who clings to his homeland and the traditions of his people, who would not hear of abandoning their way of life. The latter would say: I follow their (my people’s) example. Do I not belong to Rabi’ah or Mudhar (two Arab tribes)? However, precious merchandise will not be obtained except by a person who takes the trouble to travel in the land and to look around in the various parts of the earth, until he is exhausted and longing to return; such a person will find easy what the indolent deem insurmountable, and will become familiar with what they find odd.

The miracle of the muscles

* A baby crawling on the floor. An adult scratching his nose: do you believe that behind these movements, little valued or noticed, there are more exact and subtle processes than the structure of the hydrogen bomb. Muscles have puzzled eminent scientists and researchers, and they are still often mystified, despite their ingenuity, by the secrets of muscles.

* Muscles account for more than half the weight of the human body. They have been described by a scientist as "The most splendid article that nature exhibits in its wonder-filled gallery," since they perform their vital role from birth until death. It is the muscles that start expelling a fetus from its mother's womb, a process that is accomplished by the action of the womb's muscles. It is the muscles that provide us with almost all our internal temperature. It is the muscles that push food down the alimentary canal; it is they that draw air into the lungs; and it is they that squeeze tears from the tear glands.

And, lastly, it is they that announce the cessation of life, as the cardiac muscle stops its beating, after having beaten 2.5 billion times in seventy years.

People often speak of iron muscles; what they do not notice is that the iron physique we feel when touching contracted muscles is caused by a jelly-like soft substance, and that this substance, when contracted, can lift a weight one thousand times its own weight. This is the most amazing fact of nature in the human body.

The series of chemical and electrical reactions that happen in a tiny muscle in less than a second – like the closing or opening of an eye – would take hours or even days if a researcher were to produce them in his laboratory.

There are three kinds of muscles:

* The striated muscles – muscles of voluntary movements that have the appearance of bundles of fine capillaries. It is they that propel us when we walk; it is they that we use when we lift a spoon, or shake our heads!

* The smooth muscles, whose movements are involuntary, control such processes as the motility of

food in the intestine during digestion, and the opening of the iris of the eye.

* The third kind is the heart muscle, which has unique characteristics. Its structure is midway between the above two kinds.

All three kinds of muscles are no more than devices for converting chemical energy (i.e. food) to mechanical energy (i.e. action).

Hundreds of books and articles have been written about muscles, but not one has adequately explained how muscles contract, or how the toe of the foot moves! So glory be to the Lord when He said:

﴿وَفَوْقَ كُلِّ ذِي عِلْمٍ عَلَيْهِ﴾ [يوسف: ٧٦]

“Above everyone who is endowed with knowledge, there is One who knows all.”

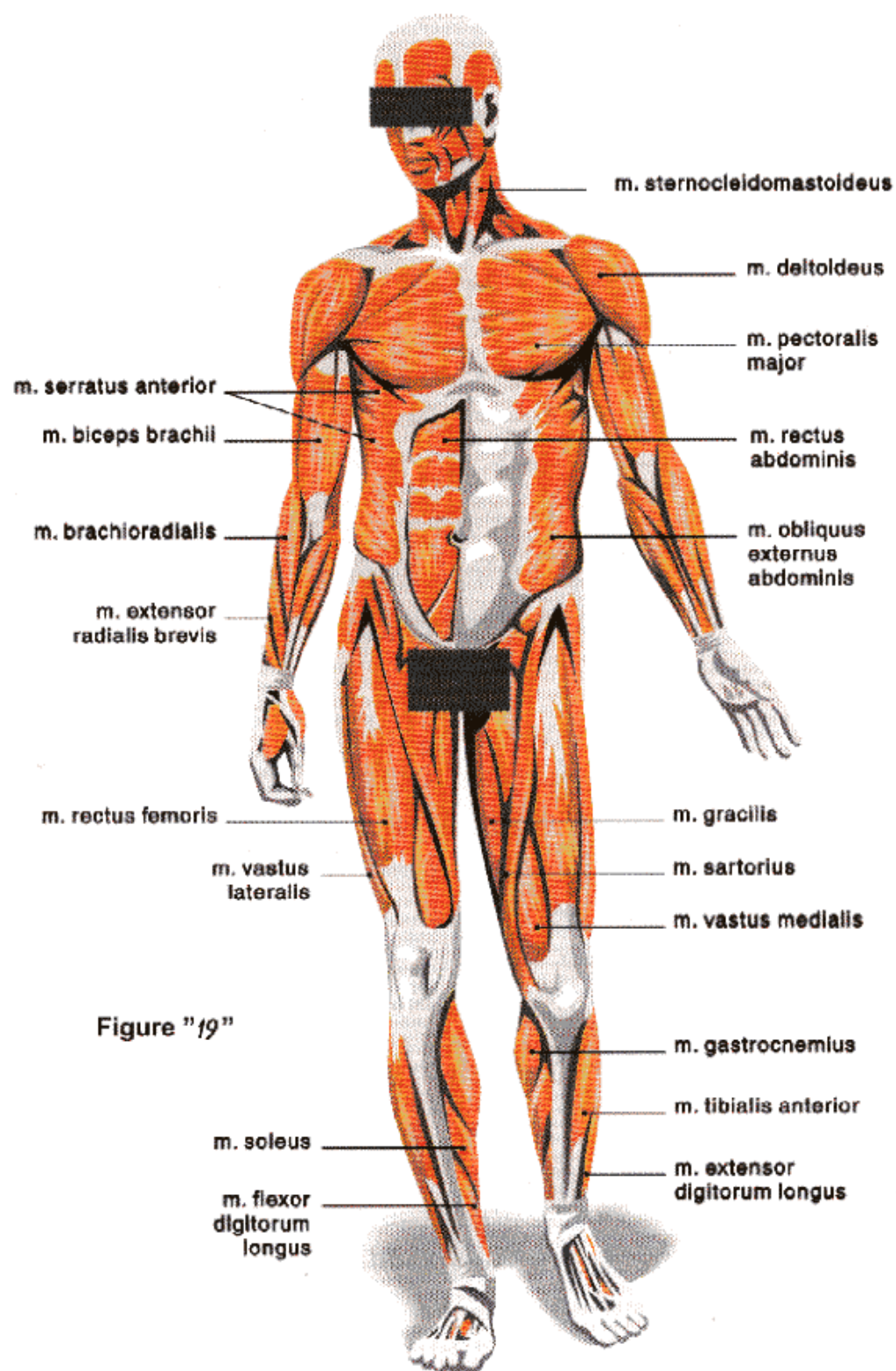


Figure "19"

The blessing of senses

Think again of yourself; reflect on the great wisdom of the All-Knowing Creator as attested by your creation. Think of the senses which are like windows from which to observe things around you. See how the Lord has caused most of them to be in the head, like lights placed at the top of a light-house, to explore things. He did not place them in organs that are exposed to rough jobs like the hands and feet: otherwise they would have received injuries that result from actions and movements; nor in organs in the middle of the body, like the belly or the back, for it would be uncomfortable for you then to turn to things and perceive them. Because no other organ is fit to hold the senses, the head was deemed to be apt to hold them, being the fittest and finest part of the body. It is the shrine of the senses.

Observe then the wisdom of making the senses five, to counterpart the five types of stimuli, and so no stimulus is left without a sense organ to react to it. Vision reacts to visible things, hearing reacts to audible things, smell reacts to the various scents, taste reacts to the various tastes, and touch reacts to tactile stimuli. Is there any perceptible thing left without a sense to perceive it? If there were, you would have been given a sixth sense to react to it. As the rest of things can be reacted to by the internal organs, He bestowed on you the internal senses. This system is so comprehensive that they say of a deep thinker: he uses his five to counter six, meaning that while he has only five senses, and the directions are six, his mind is so active that it helps the five senses to cope with six directions in his eagerness to search for answers.

Aids to the senses

Apart from these senses, there are powers independent of them, assisting in the process of sensing. The sense of

sight is assisted by light rays; had they not been there, a sighted person would not have benefited with his eyes. The sense of hearing is assisted by the air which carries sounds through space, then delivers it to the ear, which receives and processes it, conveying it to the hearing faculty; without air, a human being would hear nothing. In the same way, the sense of smell has been assisted with the soft breeze; it carries the scent, and then delivers it to the smelling faculty, where it is processed and interpreted. One would not smell anything without the breeze. The sense of taste is also assisted by the saliva, in which taste-bearing particles are dissolved. In this way, the sense of taste can get the taste of things. It does not have a taste of its own, sweet or sour, salty or bitter – for if it had tastes of its own it would have mixed all the things that enter the mouth with its own taste, and this would have inactivated this sense. The sense of touch has been assisted by a certain power conferred on it by Allah, by which it perceives the touched things. It does not need anything extraneous, in contrast with the other senses, but perceives things without mediation, because it perceives by contact, and so it does not require assistance.

From modern science

Allah the Almighty has, in His deep wisdom, made the strength of the senses accurately adapted to our need. If their power were less, our life would lose balance; and if they were sharper, man would be miserable because of the superpowerful senses. In support of this, we may cite the following scientific fact: if man's senses were of such power as to perceive the microbes that surround him, the radiation that penetrates his body, the sounds that emanate from various microcosms, his mind would be unhinged, and he would lead an insufferable life.

If our sight were sharper, seeing the thermal and light radiation in their various degrees, we would see humans and animals in what we now consider complete darkness because of the thermal radiation emanating from those creatures; a doctor would realize that his patient is feverish by merely looking at him; we would know if irons and electrical appliances are hot at a glance; we would perceive new colours that we had not been able to perceive before; we would not only hear the din of examination machines when turned on, but would see and hear the electrical waves as they penetrate our bodies; physicians would not need phosphorous plates or sensitive film to receive those rays, as they would see the outlines of our internal organs, bones and strange objects directly in bodies; and we would see the radiation of uranium and other similar minerals.

Caves and tunnels that lie several metres below the earth's surface would not be, for us, in absolute darkness, because the vague cosmic ray penetrates through their roofs. Our eyes would be of such power that they would see millions of beneficial and harmful viruses and bacteria, which abound in air, foods and clothes – especially those bacteria that fly with the volley of liquid droplets when someone sneezes or coughs, and this would make us have phobias of sickness and a dread of being killed.

If the sense of hearing were stronger than it is at present, the noise made by cars in towns, and the blaring noise of factories would seem like the roaring of thunder or the blasts of cannons or bombs. We would not enjoy the calm of night even in the most quiet of places, because we would hear the rustle of bats and other creatures that make very little noise, which we do not perceive with our present sense of hearing.

Even if we could muffle all those outside noises, we could not stop that of the wrist watch, which is too close to us, or that of our hearts, or even the pulse in our internal organs. We would even hear the noise made by the air as it hit our bodies, a noise which would resemble the sound of drops of rain falling on boards of zinc. All the above noises would be especially vexing in the summer, when the rising temperature causes an increase in the blowing of dust.

Suppose that our sense of smell should increase to equal that of some animals. We would in that case do without police dogs, as we would be able to distinguish friends from enemies at a far distance; we would be repelled by many that we associate with now because of their foul scent. Soldiers would have to take account of the direction of the wind lest it should carry their scent to their enemies.

For our sense of touch to be sharper, the extensions of neurons would have to be more widely spread on the surface of our body, especially on the spots where there are none or few of them, like the back. On such spots, one would hardly distinguish the pricks of two pins separated by a distance of a quarter of an inch, while the tips of the fingers can distinguish the difference. If our bodies had that heightened sense of touch, it would be a great disaster, as our woollen, and even cotton, underwear would feel like needles on our bodies.

The destruction of any tiny spot in the brain's cells results in the loss of communication between it and a particular organ. From this we can appreciate the importance of obeying the Messenger's injunction, peace be upon him, not to hit the face, and not to insult anyone. (Adapted from: "Your Body, the House of Wonders")

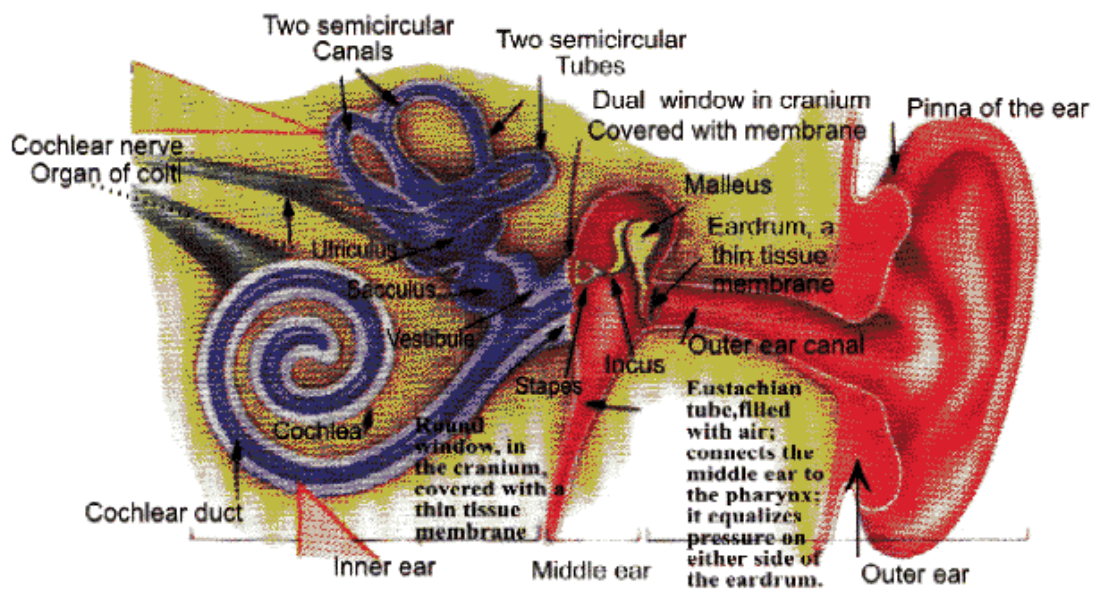


Figure "20"

The ear and its structure

The organ of Corti is the 'retina' of the ear. It contains about one thousand cells to receive all kinds of sounds with amazing sensitivity. This organ of Corti, a constituent of the inner ear, is a spiral that forms 2.5 circles, in addition to a vestibule, consisting of an ampula and a sac, the semicircular canals which are responsible for maintaining the human's balance. Balance is a complex operation that involves the cerebrum, the cerebellum, and the inner ear. This last is the peripheral organ, while the other two organs are the central systems that control the balance of the human.

The question is: How can balance be achieved so accurately? And the answer is that it is a very complicated issue which has not been unravelled by medicine until now. It is enough to know that there is in the inner ear a part that is called 'the labyrinth', because a researcher is almost bewildered by the corridors, passages, walls, holes, chambers, openings, communications, the organizing net, and the interconnections among them all.

There is a connection between the inner ear and the middle ear through two windows, the circular window and the oval window. The circular, or upper window, connects the middle ear, with its three small bones, to the inner ear. The bone that is in contact with the circular window is the Stapes, while the bone that is in contact with the eardrum is the Malleus. Between these two bones is a third, the Incus, in addition to two muscles. All the above form the middle ear, which is connected to the oesophagus by the Eustachian tube, which equalizes pressure between the outer and middle ear, separated by the eardrum. The outer ear canal is the place where sound is directed to the eardrum, which then vibrates. The small hearing bones which are in contact with the eardrum transmit the vibrations faithfully to the circular window, which, in turn, conveys the message to the inner ear. Here the message is received and interpreted, then transferred as a nerve impulse to the general auditory centre in the brain (the temporal lobe).

The heart and its relations to the other organs

One of His wonders is that He created in the head three stores, connected to each other, one in front, one in the middle, and one in the rear. He endowed those three stores with precious treasures of His marvels: memory, reflection, and rationality.

Some of the wonders of His creation are internal things that cannot be viewed from outside, like the heart, the liver, the spleen, the lung, the intestine, the bladder, and other exquisite mechanisms and powers of various functions. The heart is the king who manipulates and employs all the body's mechanisms. It is surrounded by them, escorted by a retinue of organs. It is the noblest of the body's organs, the cornerstone of life, and the spring of the animal spirit and instinctive drive. It is the source and essence of intellect, science, tolerance, courage, generosity, patience, resignation, love, will, satisfaction, anger, and all the traits of integrity. All the external and internal organs and their powers are soldiers in the service of the heart. The eye is its scout and pioneer, exploring for its visible objects. It reports to it whatever it sees. The close attachment between the heart and the eye can be testified by the fact that if anything settles in the former, it shows on the latter: the eye is the heart's mirror, reflecting to an observer what is in the heart, in the same way that the tongue is the heart's interpreter, delivering to the ear what is in the heart. It is on these grounds that the Almighty combines all these three in such verses as this:

﴿إِنَّ السَّمْعَ وَالْبَصَرَ وَالْفُؤَادَ كُلُّ أُولَئِكَ كَانَ عَنْهُ مَسْئُولًا﴾ [الإسراء: ٣٦]

“The hearing and the sight and the heart – of each of these it will be asked.” (17: 36)

Contemplating the case of the human without senses

Consider the case of the human who is deprived of the sense of sight. Think how grave is his bereavement. He does not see where to put his step, does not see what is in front of him, does not distinguish colours and agreeable

and disagreeable sights; he does not benefit from the scholarship of books; he is unable to reflect and contemplate the wonders of Allah's creation. He cannot take note of much of what is advantageous or harmful to him; he may not be able to avoid falling in a hole in his way, nor protect himself from a wild animal, or an enemy intent on assailing and killing him. He cannot flee if attacked, but will have to be at the mercy of his adversary. Had it not been for special care from Allah, in some ways similar to that given to the newborn, he would be much more likely to perish than to survive. He is like a mass of flesh and bones, and that is why Allah promises him, if he is resigned and patient, that he will be rewarded with Paradise. It is an illustration of the immensity of the Lord's kindness that He compensated a blind person's vision with a mental vision, so that you see that he has the sharpest intuition and insight. Another grace is that he enjoys clarity of objective, so that he is not distracted or scatter-brained. In this way he can enjoy his life, and take care of what is good for him, and is not depressed, indignant or frustrated. This is true of those born blind. As for the one who lost his sight after he had been sighted, he is like all those who have had catastrophes, who have transferred from a state of well-being to one of suffering. He takes it very hard, because he is barred from what he had always enjoyed of sights, scenes, and ways of using his vision; his case is different.

Similarly, a person who is deprived of hearing misses the skill of communication and talking, and misses consequently the exchange of ideas and the pleasant experience of melodious sounds. People will be reluctant to communicate with him and will express annoyance at his presence. He will be cut off from people's news and conversation; he is present but not really present, alive but it is like death-in-life, close by but really far.

There has been much dispute concerning who is less deprived and more normal, a blind person or a deaf-mute. There have been many supporters of both views, and both parties have cited several points. This debate, however, refers to a more basic one: Which of the two senses is more valuable, hearing or seeing? I have mentioned above details of this debate¹, and I have listed there the arguments of the different parties and their proofs, and discussed the truth about the matter. Here we may add that the loss of the sense that is more basic to integrity will be graver. We can briefly say here that for an unsighted person the loss is more serious, but his loss is less in religious matters, and his outcome will be better. For the deaf person, on the other hand, the loss is less grave in worldly matters, but he misses more in a religious sense, and his outcome is worse. His deafness will deprive him of all the preaching and admonition, and his way is blocked to useful sciences, while the way is open to tempting desires that are visible, while he does not have enough knowledge to deter him from getting involved. Therefore, his religious disadvantage is greater, while the blind man's disadvantage in worldly matters is greater. It may be observed in this connection that there was not among the Prophet's Companions a deaf-mute, while there were a number of unsighted companions. It is rare that Allah should test his devotees with dumbness, while he may test many with blindness. This is then the decisive statement concerning this issue: that the deaf-mute's loss is religious, and the blind person's loss is worldly. It is a real blessing if one is spared both handicaps, and enjoys the use of both hearing and sight, and has them intact to the end of one's life.

¹ This refers to an earlier part of his book, 'Miftah Dar-al Sa'adah', not included here.

The blessings of verbal expression and the will

As for he who is deprived of both sanity and verbal expression, he is no better than animals; they may indeed be better off than him, because animals are equipped with the abilities that are suitable for the position they occupy, while this human is ignorant of many things that beasts know, and exposes himself to situations that beasts would avoid. To lack verbal expression is less grave than to lack intelligence, but even the one who is deprived of the human distinguishing merit, verbal expression, faces a great deal of hardship and causes a great deal of hardship to others. He himself will have endless trauma and will feel great frustration when he fails to give an apt retort or an admirable reply. His situation is akin to that of the paralytic who has what he needs in view, but cannot reach out to it, neither by hand nor by foot. Let us remember then how great is Allah's blessing that He endows his servants with limbs, organs, powers, and the abilities that are thereby made possible. It is unfortunate that man very often takes no notice of Allah's boons, does not show gratitude for them, although if he were to miss any of them, he would have wished to sacrifice all that he possesses in the world to get that one faculty. Indeed, he enjoys to the full the well-being of his organs, limbs and powers, without feeling grateful for them. If the whole world were to be granted to him in place of one of his faculties he would readily have refused the exchange, realizing that such an exchange would not at all be a bargain. That is why we feel the truth of such Qur'anic verses as this:

﴿إِنَّ الْإِنْسَانَ لَظَلُومٌ كَفَّارٌ﴾ [إبراهيم: ٣٤]

“Lo! man is verily a wrong-doer, and ingrate.” (14: 34)

The plurality of organs

Consider now the deep judgement of the Lord embodied in the organs which he willed to be single, in a pair, three or four, and what great wisdom such an arrangement implies. The head, the tongue, the nose and the penis are single, as there is no point in there being more of them. Do you not see that if there were two heads it would be a cumbersome burden without any benefit gained: all the senses that a human being needs are found in one head. If the head were two heads, a human would be split into two; he would speak, hear, see, smell, and taste with one, while the other would be idle and useless; and if he were to speak, see, hear with both simultaneously, then the second head would be a useless redundancy. If, on the other hand, their perceptions were different, that would cause a human distractions and a discrepancy in his conceptions. In the same way, if he had two tongues in the same mouth, and if he were to speak the same words with both tongues, then one of them would be useless; and if what he said with each tongue were different from the other, that would confuse the hearer, who would be at a loss which of the two statements to accept. If a human had two mouths, then one of the two would be useless and redundant, apart from the ugliness of appearance.

It is another story with the organs which were created in pairs, the eyes, lips, hands, feet, legs, thighs, hips and breasts. In all these, the wisdom that they embody is manifest, the benefit is clear, the beauty and agreeableness is obvious. If a human had a single eye, he would be disfigured. The same may be said of the brows. As for the two hands, two feet, two legs, and two thighs, the benefits of their duality are essential for the human, as he would be in a bad shape without them. Do you not see how a person whose hand or foot has been amputated is crippled and disabled? If the carpenter, the tailor, the

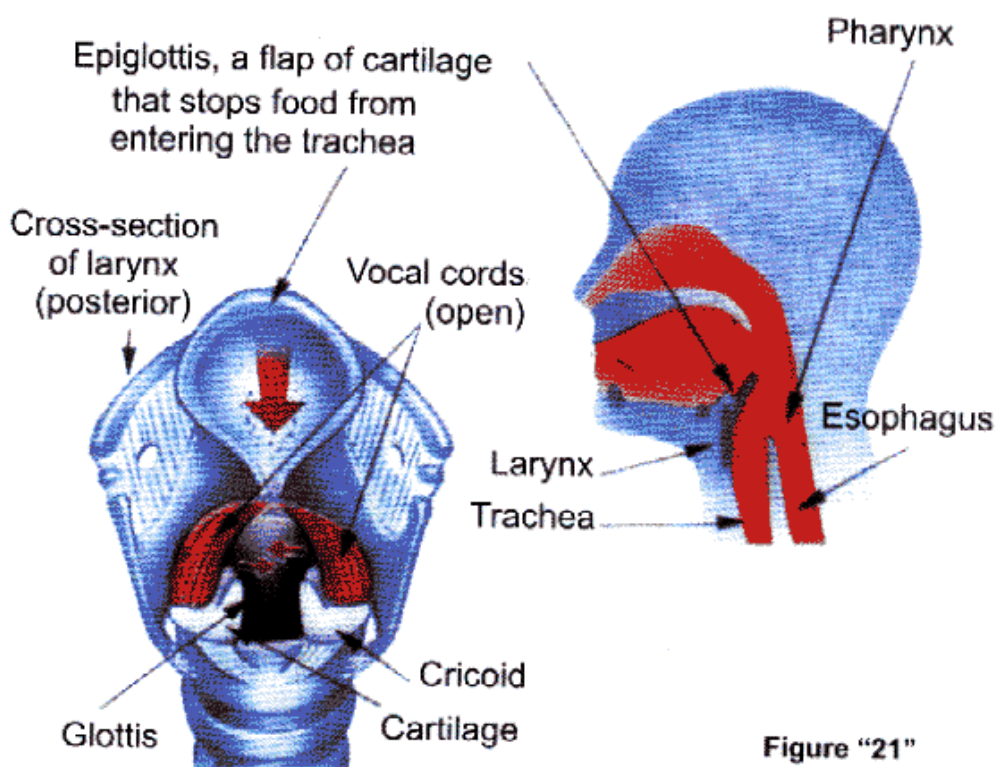
blacksmith, the baker, the mason and other workers whose jobs cannot be performed without two hands have a paralysed hand, this will prevent them from pursuing their craft. From this it will be clear that wisdom dictates that there should be a pair of each of such organs and limbs. In the same way, a human has been given two lips, as this is essential for him: they provide a number of benefits, such as speech, taste, covering the mouth, good looks, adornment, kissing, and other benefits. As for parts of the body which have been created in threes, an example is the sides of the nose, and we have discussed this above. There are also parts in fours, such as the ankles of both feet, which are the converging points and holders of the feet. They are the point of power and movement of the feet, and they are the means of realizing the leg's benefits. The eye lashes provide a number of benefits and advantages, since they cover the eyes and protect them, beautify them and adorn them, besides other aspects of wisdom.

It must be clear by now that it is deep wisdom that all the organs are best in their actual number, shape and size, that if they were more or less, it would be to the loss of the creature. That is why some humans have more of this or less of that to be a manifestation of Allah's wisdom, for us to realize that if He so willed, He could have made all his creatures like this, so that a human who is not disabled should be aware of the Lord's blessing in creating him without handicaps, that there is nothing redundant in his body, and nothing missing, since the specimens are in front of him. That should be more of an incentive to express gratitude to the Lord and to praise Him, to realize that it is not the making of nature, but the creation of Allah, who perfected everything that He created, and creates what He wills to create.

Similarity of animals and dissimilarity of humans

How could nature devise such a wide variation and differences in the appearances of human beings? It is extremely rare that two persons are identical in every way. This is very unlikely to occur, while it is not so in the case of all species of animals, domestic, wild, birds, and so on. You see a herd of antelope, a flock of sheep, a herd of camels or cows, so resembling each other that you have to contemplate them for a long time to discover a distinguishing mark between one and the other. Humans, in contrast, vary widely in shape and physical build, in such a way that rarely do any two seem identical in even one feature, not even in tone of voice, not in one utterance. The wisdom of this should be clear, since people need to get acquainted with each other, distinguishing each for what he is in appearance and apparel, so that they can deal with each other. If such differences were not there, immense chaos and disturbance would arise; there would be no chance of distinguishing the plaintiff from the defendant, the creditor from the debtor; a man would not be able to distinguish between his wife and other women. Who is it, then, that made the differences in features, shapes, and voices, differences that no words can describe, and no eloquence can express? Ask the atheist then: "Is that the work of nature? Is there in nature anything that leads to the variation and distinction in the same species? How can that be compatible with the naturalists' claim that nature's works are unchanging since it is itself the same, not acting from will or volition, and so there can be no diversity in its actions?" How would the denier reconcile these two propositions? Indeed, real blindness is not in the eyes, but in the mind. It does happen that we see great resemblance between two humans, to such a degree that it is hard to distinguish one from the other.

When such a situation arises, it presents great hardship for everybody in dealing with the two persons. People feel badly in need of some distinguishing marks between the two, to know for instance the convicted from the innocent, to know who to blame for misdeeds. If identical names pose such difficult cases for the judge and the witness, how vastly more difficult it would be when individuals are identical in physical appearance and shape? In contrast, since resemblance does not harm lower animals, birds and beasts, there is no apparent wisdom in their having distinctive appearances. We glorify, then, the Lord, the Best of Creators, Whose Wisdom has encompassed all creation.



Voice and speech tools

Consider now speech, how the sound comes out from the throat and then is articulated to be distinct words; how its organs are crafted. Observe speech and its precision, the letters and their utterances, and notice the organs, segments and rhythms. You will find in all this great wisdom. As the air comes out as plain current from the chest, it rises up the windpipe, until it reaches the uvula, the tongue, the lips and the teeth, where it acquires

segments, distinctions, and tones that make each syllable heard and each tone distinguished clearly from any other. In this way the letters are identified. You see how the windpipe is one, the air that rises in its plain form is uniform; but it then reaches straits and barriers, where twenty-nine different letters [in Arabic] are audible. The whole process of speech is based on that; speech with all the requests, prohibitions, information and inquiries; verse, prose, speeches, sermons and trifling; some amusing, some pathetic, some disheartening, some encouraging and some frightening; some promising and consoling, some saddening, depressing, or refreshing; some sickening, some healing. Observe how some speech alienates from blessing, and brings down calamity; some may ward off ordeals, and invoke bounty; some wins over hearts, reconciles discords, brings together antagonists, and some does the opposite. On account of some words that one has uttered carelessly, one will descend into hell – a distance farther than the east from the west; on account of some words that one has uttered without giving them importance, one is raised to the highest places, close to the Lord of the Worlds.

Glorified be He Who created all that from plain air that rises from the chest, seemingly without aim, without direction, and without particular destination. Besides all that, there are the differences in languages and dialects, more than anyone but Allah can encompass. Groups of people from diverse climates happen to meet in one place, each speaking in his or her language, each language controlled by exact rules, having its own rhythm, and the different groups know nothing of what the other groups are saying. The tongue as a tool is the same in shape and appearance, so are the uvula, the molars and the lips; but the words that are produced are vastly different. As a miracle, this is not unlike a plot of land, irrigated with the

same water, but growing diverse and greatly different plants, flowers, grains, and fruits. It is on these grounds that Allah, the Almighty, mentions that both aspects of creation are signs, in the following verses:

﴿ وَمِنْ آيَاتِهِ خَلْقُ السَّمَوَاتِ وَالْأَرْضِ وَأَخْلَافُ السِّنِّكُمْ وَالْوَلَوِّكُمْ إِنَّ فِي ذَلِكَ لَآيَاتٍ لِّلْعَالَمِينَ ﴾ [الروم: ٢٢]

“And among His wonders is the creation of the heavens and the earth, and the diversity of your tongues and colours: for in this, behold, there are messages indeed for all who are possessed of innate knowledge!” (30: 22)

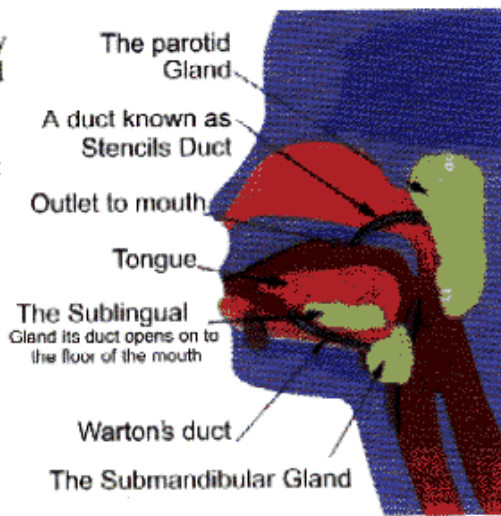
﴿ وَفِي الْأَرْضِ قِطْعٌ مُّتَجَوِّزَاتٌ وَجَنَّتْ مِّنْ أَعْنَبٍ وَزَّرْعٌ وَنَخِيلٌ صِنَوَانٌ وَغَيْرُ صِنَوَانٍ يُسْقَى بِمَاءٍ وَاحِدٍ ﴾ [الرعد: ٤]

“And there are on earth many tracts of land close by one another and yet widely differing from one another; and there are on it vineyards, and fields of grain, and date-palms growing in clusters from one root or standing alone, all watered with the same water.” (13: 4)

Think now of the throat, how it is a kind of pipe for the passage of air, while the tongue, the lips, and teeth are for articulating letters and producing tones. Do you not notice how a person who has lost his teeth cannot pronounce properly the letters which are articulated by the teeth and the tongue? Do you not notice how a person who has lost his lip cannot pronounce properly the ‘r’ or the ‘l’ sounds? How a person who has an ailment in the uvula cannot properly pronounce the uvular letters? Anatomists have compared the rising air stream to the flute, the lung to the bellows that supply it with air, the muscles that surround the lungs to the hands that press

the bellows to propel the air up the bronchi, the lips and the teeth that form the letters and tones to the fingers that alternately block the holes on the flute to produce a melody, and the barriers that obstruct the flow of air to the holes on the flute. In view of that it has been said that the flute is made on the model of the production of sounds in the human. If you marvel at the skill of humans who make with their hands those wonderful instruments, you ought to wonder much more at the Divine workmanship that produced those letters and sounds from among flesh, blood, veins and bones. And the outcome is worth noting indeed. But it is human nature that what is habitual does not drive people to wonder. When people observe some novel accomplishment devised by humans they glorify the Lord and praise Him, but they bypass the amazing and staggering signs of His greatness that resemble nothing around us. Consider the diversity in the tone and pitch of voices despite the apparent identity of throats and uvulas, tongues, lips and teeth. Who effected all those distinctions quite clearly despite the great resemblance of the apparatus that produce them? Who but the Creator, the All-Knowing!

Three pairs of Salivary Glands make the food that we eat lubricated, and thus easier to swallow and digest



The Salivary Glands the sketch shows only three glands, but their are three identical glands on the opposite side.

Figure "22"

The saliva gland and the tongue

With 17 muscles that move it in all directions and three nerves controlling the transmission of sensation, the tongue helps in chewing, swallowing and tasting food, and is essential in the production of speech. There are on the surface of the tongue 9000 taste buds to recognize the four tastes: sweet, sour, bitter and salty. During chewing and swallowing, six glands with ducts secrete saliva into the mouth to soften the food and prepare it, assisted by 32 cutting and grinding tools, the teeth.

Other benefits

The above tools provide other benefits and advantages apart from speech. The throat is the channel that leads the cool breeze to refresh the heart at every successive

inhalation. The tongue serves as the tool of tasting, where various flavours are tasted and enjoyed or not, and where they are evaluated. It also serves to push the food and turn it around to facilitate the job of the uvula. The teeth have the advantage mentioned above, that of cutting the food; but they also serve to give solidity to the lips lest they droop and disfigure the face. It may be observed how the person who has lost his teeth has hanging-down lips. The lips themselves provide several advantages. They help in sipping drinks in the desired amount, so that the drinker does not choke. They are also a closed door to hide the mouth, which receives whatever is thrown up from the belly, and where begins the descent of what is taken in. The lips are a lid and a roof, which is opened and shut at will. At the same time, they adorn the face and beautify it, and that is not all. Consider the person who has lost his or her lips, how disfigured he or she looks! It must be clear by now that each of the mentioned organs serves so many purposes, performs many tasks, and has many advantages and benefits. Each is a tool that can be used for many purposes.

The systems of the head

If you were to see the brain and witness its formation and structure, you would be astounded and overwhelmed. It is so complex that the mind boggles, and it is shrouded in membranes and layers that lie on top of each other, so that it is protected from any mishaps, and to maintain its well-being. Above all that, there is the cranium that shelters the brain like a helmet, protecting it in case it is exposed to a fall, shock, or blow. The cranium itself is covered with skin, protecting the bone from exposure to injuries, and over that there is ample hair to protect the skin and shelter it from heat, cold and injuries. The latter is also an adornment and adds beauty of looks. You may well ask the denier: Who is it that covered the brain with the utmost care, privileged it with a special status, and chose it to be a

cabinet supplied with a myriad advantages, powers and marvels? Who is it that sealed that cabinet, supplied it with extreme fortification, protected it most thoroughly, and deemed it to be the controller of senses and perceptions? Who made the eyelids shade the eyes like a cover, their edges like trees, and the eyelashes like shelves lining the eye when it is opened? Who had the eye's layers arranged one on top of the other, seven in all, the same in number as the heavens, each layer playing its particular role, so that if any one layer failed it would mar the vision? Who is it that placed the eyes admirably in the face, and made them the source of beauty, the mirror of the heart; a scout and guardian of the body, a pioneer that is sent ahead to run errands, never grumbling, never fatigued, despite the innumerable times it is employed and the trips it takes? Who endowed the eyes with illuminating vision, all focused to the size of the lens, which encompasses heavens and earth, mountains, sun and moon, oceans and wonders, all admitted through seven layers? Who located it high in the face, similar to a sentinel stationed on a high hill to guard the body? Who concealed the king (i.e. the heart) in the chest, established it on the throne of the kingdom, with all the organs, limbs and internal and external systems in its service, the way soldiers serve their king, obliging and obedient, complying to orders, heeding prohibitions, striving, and seeking their ruler's contentment; not allowed to rebel against its authority, nor to retire from its service; one is a messenger, one a courier, one an interpreter, some are assistants; each having its assigned part which it never goes beyond, never meddling in another's business. Whenever the king desires relaxation, it orders them all to keep quiet and calm; and when it wakes up, the soldiers await its pleasure, each resuming its job willingly and constantly. If you were to observe the heart in its court, the missions and decrees it issues and receives, the soldiers in its service, the couriers carrying the mail between the king and its subjects, you

would really stand transfixed! It is vast indeed what the ignorant and visionless person has missed of wonders and enlightenment and lessons which may be obtained without the trouble of journeying and roaming. This is the purport of the following Qur'anic verse:

﴿ فِي الْأَرْضِ آيَاتٌ لِلْمُوقِنِينَ ۝ وَفِي أَنْفُسِكُمْ أَفَلَا تُبْصِرُونَ ﴾ [الذاريات: ٢٠، ٢١]

“And in the earth are portents for those whose faith is sure. And also in yourselves. Can you then not see?” (50: 20-21)

Here He is urging His servants to ponder over their existence, to find in it a guidance to the Creator and Originator. It is the urgency of such a call that makes me expatiate and dwell so long on this issue. I do this with the conviction that it pays to do so, since it expands intellectual capacity, provides precious knowledge, and increases a believer's faith. Many a guardian stands in protection of the heart! many a servant! and many a slave! but it goes ahead in its work unheeding of others. Impressive indeed is what Allah has created for the sake of man, what He has put at his beck and call! Great indeed is man's responsibility! Great indeed are the felicity and luxury or misery and torture that will be his recompense! He will either be seated on the throne of royalty, firmly established in the favour of a Mighty King, in view of his Lord's face, hearing His speech; or thrown in the great jail, among layers of blazing fire, receiving painful torture. If man, the king, realized what is awaiting him, he would not greedily seek royalty in this world, and strive to win the majesty that never fades or wears away. But he is under many veils of ignorance. It is all for an end that Allah will see to its fulfilment.

Do you know how the brain operates ?

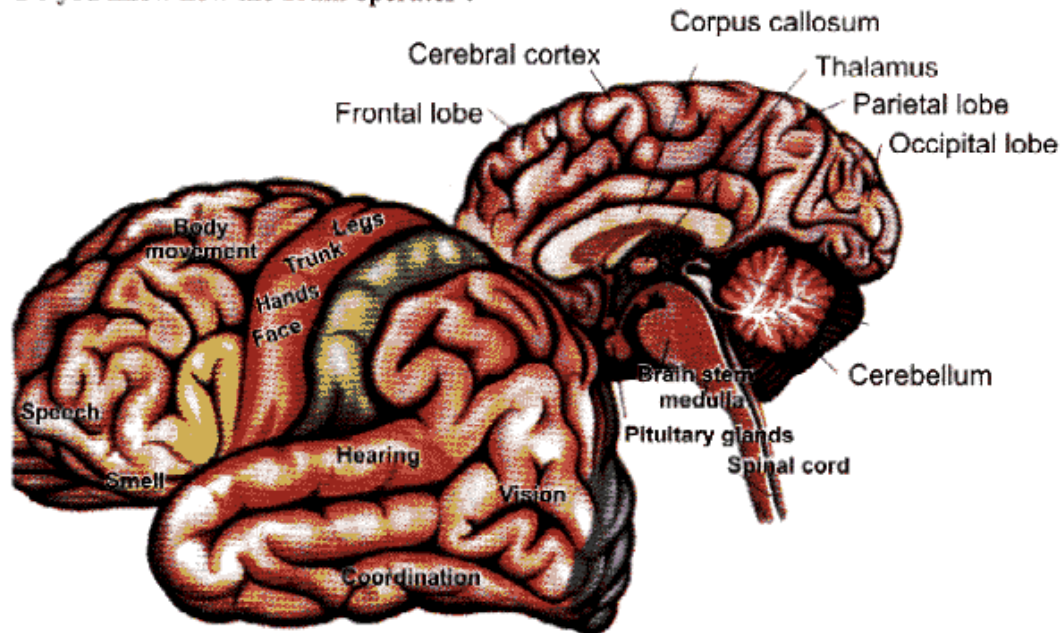


Figure " 23"

The brain

* The brain consists of 13 billion nerve cells (neurons), and of 100 billion supporting cells, known as glial cells. These latter are a strong barrier to protect neurons from being harmed by any substance. Tumours mainly grow at the expense of glial cells, as if neurons are immune from cancer. The brain is nourished only by glucose, in contrast with the heart, which is nourished by glucose or lactic acid. It appears that the brain prefers the luxury of glucose, having priority over all the other body organs. If the body has a shortage of nutrients, it is the brain, the noble organ, that is privileged with nutrients rather than any other organ.

* Every day, the brain requires 115 grams of glucose, a certain amount of phosphate, 10-15% of the oxygen consumed by the body, and at least 1000 litres of blood. If any of these nutrients is lacking, the brain will fail to perform its vital role well.

* The brain cells are some of the noblest parts of the body, since they represent the body's governing system, which faithfully does the thinking and knowing task for the body. The rest of the body is the public that submits to the ruler with loyalty and obedience. It is on this account that the brain has three membranes, in addition to the bony plating that securely preserves the head as a locked box. The cerebral liquid spreads between the membranes to play the part of shock absorber. This careful sealing has been mimicked by the space scientists who designed the space capsule – they provided it for protection with layers and liquid in the same way as that described above.

* The spinal cord has a diameter of about 1 cm, and it is 54 cm long, with 31 pairs of nerves that branch from it.

* There are, in the human body, about 800,000 nerve cells in the front horn of the spinal cord. Polio occurs if two thirds or more of these are destroyed. The front horns of the spinal cord are responsible for muscle movement, while the posterior centres are responsible for transmitting all kinds of sensation (pain, heat, cold, pressure, touch, deep sensation, etc.)

* The approximate number of the brain cells is 13 billion. Some nerve cells in the various parts of the body are connected to about 18,000 other cells, which enables them to flash to the brain with an astounding speed detailed reports about each cell in the body.

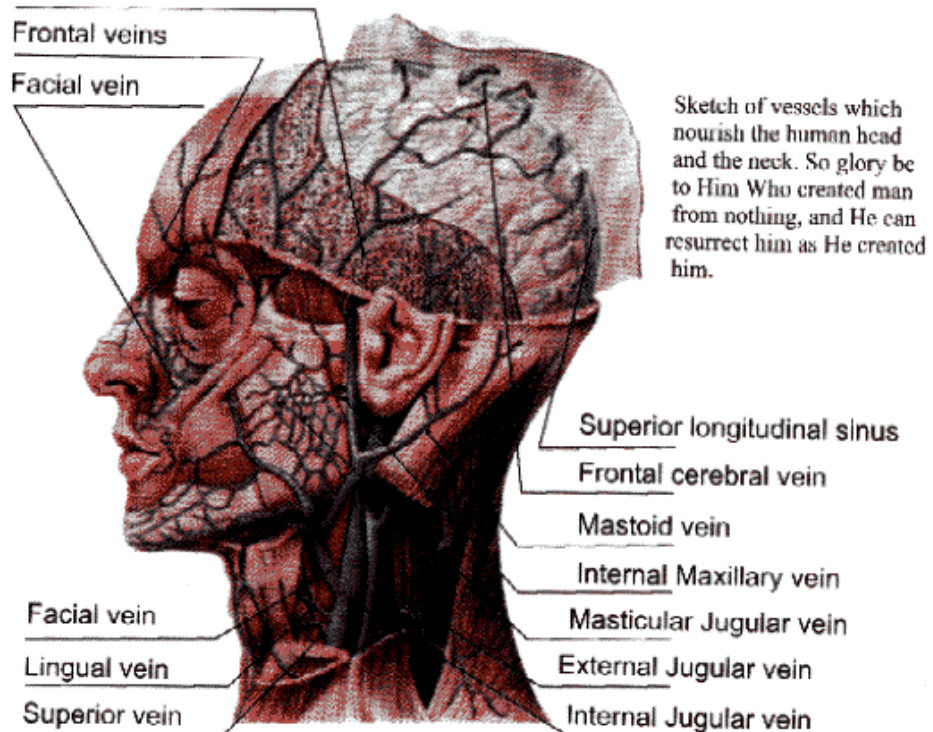


Figure "24"

The arteries of life

* Blood going to the brain returns to the heart in 8 seconds, while the blood going to the feet returns in 18 seconds.

* At the normal heart rate of pulsation, a red blood cell makes 1500 cycles during a whole day (a carrier which carries 1500 times each day without getting tired)!!

* There are in each cubic millimeter of blood 5 million red cells, about 25 million red blood cells in the whole blood, an amount that would

cover an area of 3450 square metres. If the red blood cells were put in a line, one next to the other (the average diameter of a red cell is 7 microns), they would make a line that circles the earth 6-7 times. The capacity of the bone marrow to produce red blood cells can increase 5-6 times, and a red blood cell has an average life span of 120 days. Its life span can decrease to 20 days without the appearance of anemia. A red blood cell covers in its oxygen-carrying trip a distance of 1150 km along the body's vessels. Each cell has the complex hemoglobin, which consists of 574 amino acids, in addition to fat, carbohydrates, enzymes and vitamins, etc. In the case of a lack of oxygen, the number of red blood cells rises to 7-8 million/cubic mm, especially when we climb heights, and in the embryo, since in this case the lungs cannot function, which is why it is said that a human embryo sits on Mount Everest!!

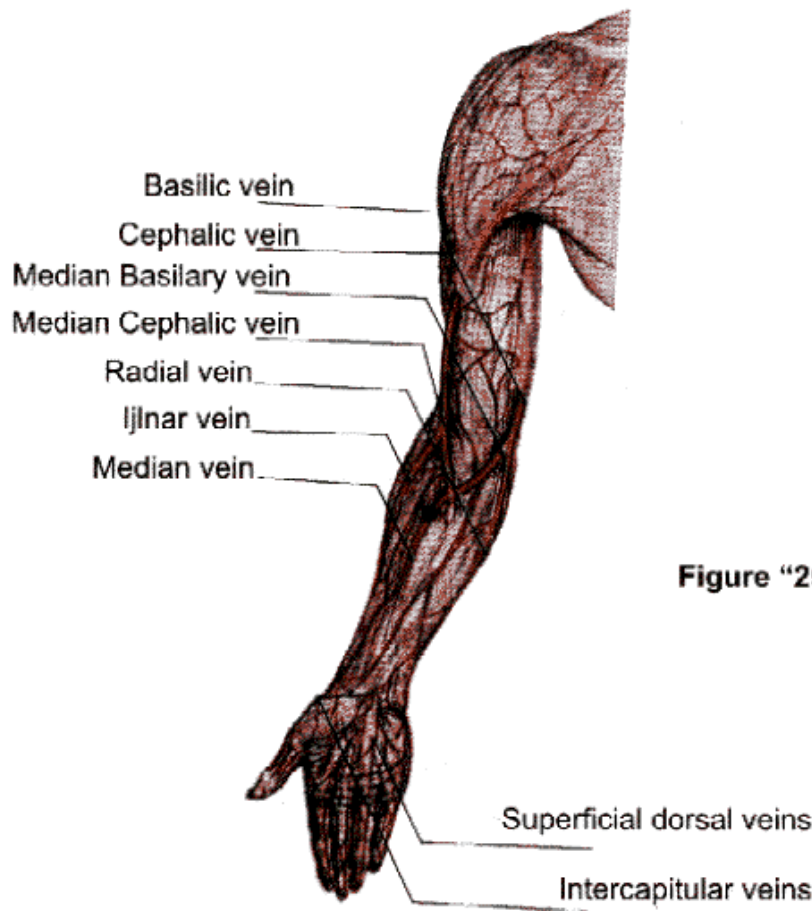


Figure "25"

Inquiries concerning the human being

Imam Ibn Al-Qayyem, may Allah have mercy on him, says:

* Who made the palate have two outlets: one for voice and breathing connected to the lungs; and the other, the oesophagus, for food and drink, leading into the stomach? Who separated them with a barrier that prevents each from reaching the other? If food were to reach the lungs, it would be fatal to the organism!

* Who deemed the lungs to be ventilators to the heart, cooling it, never failing or becoming exhausted, since the heart would perish should its heat be unventilated?

Who arranged for the food waste to be disposed of through outlets, and had them controlled with sphincters that close and open at will, so that they do not ruin a human's life, and prevent people from socialising?

* Who caused the stomach to have extremely robust nerves, since it is destined to break down and process foods? If it were soft flesh it would itself be broken down and decomposed. It has a texture like a sturdy nerve, so that it endures the degradation and digesting of food, without itself being broken down by the extreme heat from beneath.

* Who made the liver soft and malleable, since it is destined to receive soft and mild food and metabolise it, and these activities are soft in contrast with the stomach's tasks?

* Who had the soft and fragile brain fortified by hard compartments of bone, to protect it and shelter it, so that it does not get ruined and infected?

* Who had the fluid blood run in vessels in the same way as water runs in pipes, so that it is controlled and not spilled and wasted?

* Who made the nails at the tips of fingers and toes to protect them and support them while they perform various tasks and crafts?

* Who made the passage inside the ear as straight as a nail, so that sound slides along it without obstruction until it gets to the internal ear where the sharpness of draught has softened, lest it ruin the delicate parts there? Who built into this passage the mechanism to prevent

insects from penetrating to the inner ear and to catch them before they do so, and to stop other harmful matter, motes and dust, from penetration; not to mention other advantages?

* Who provided the thighs and buttocks with more flesh than the rest of the body, so as to protect the bones from having pain after long periods sitting on the ground, which is true of a person who grows thin and has little flesh? Such a person has pain because there is no protective flesh between his bones and the ground.

* Who made the eye's liquid salty to guard it from melting; the ear's liquid bitter to guard it from flies, insects, and mosquitoes; and the mouth's liquid neutral to let it perceive the taste of things and not submerge other tastes with its own?

* Who chose for the location of the anus the most hidden part of the body, in the same way as an experienced builder chooses for the toilet the most unnoticed part of the house? The outlet in the human body is concealed from the eye, not visible from behind or protruding in front. It is rather concealed in an obscure place of the body, where the two thighs squeeze it and hide it with their mass of flesh. When one squats to pass stool, the outlet is exposed close to the ground.

* Who made the human incisors sharp to cut food and chop it, and made the molars wide enough to crush it and grind it?

* Who willed that the hair and nails in humans are insensitive to pain, since they become long and need to be cut or clipped. If they were sensitive they would give pain, and it would be hard to cut them when desired? One would have had to face one of two disastrous alternatives: to let them grow so long that they became a real annoyance and too large to endure, or to suffer the pain of cutting them.

The Imam then adds:

The wisdom of creation does not have to be understood in every respect, nor even in part, by all mankind. Indeed, what they know is a small fraction compared to what they do not know. The knowledge of all creatures, relative to the aspects of wisdom embodied in the hidden secrets of creation and the control of creation, may be compared to the sipping of a bird relative to the volume of the sea. For the one who has understanding and is perceptive, it suffices to extrapolate what he does not know from what he knows, and to realize that there is wisdom in what he does not know that is equal to, or even more, and more subtle wisdom, than what is known to him. The foolish, imbecilic deniers are like a person who knows nothing of the sophistication and accuracy of professions and sciences like masonry, geometry, or medicine; or even crafts like spinning, tailoring or carpentry; yet he aims with his ill-judgement to criticise the masters of such professions, sciences and crafts about their devices, industry or the management of their careers. Whenever he tries some intricate point and fails to fathom it, and when he realizes that it was above his head, he simply says: "There is no point in this! Why should this be so?" That is with the professionals, who are human beings like the ignorant critic, who can, with patience, emulate them or even surpass them. How would it be, then, when such ill-judged criticism concerns the Lord's doings, whose wisdom has overwhelmed intellects, Who has no equal in His wisdom, in the same way as He has no equal in His creation: He has no rival in any way. A person who fancies that he can evaluate the Lord's wisdom with the criteria his mind encompasses, or sets his minds to be a scale of His wisdom, only conceding what comes within his comprehension, and denying what is beyond it; such a person is indeed the most miserably deluded of humans.

There are aspects of wisdom in God's creation that are unfathomable, and they are in great abundance. No sane person can deny this.

Let it be known to you now that under the roots of this hair, there is such warmth and humidity as is required for its growth by nature. Do you not see that grass grows in a quagmire after the water has dried up because of the moisture it has absorbed? The spots that have been chosen for the growth of hair are of the most humid areas on the body. Nature has secreted the waste matter and humidity through the skin, and that was in the form of hair. If they were trapped inside the body they would harm it and injure its interior. Therefore, disposing of them is absolutely in the interest of the organism. When waste matter and humidity are held inside, that is a sign of defectiveness and failure. The situation is similar to the discharge of the menstrual blood, which is definitely for the good of the woman, and a sign of her good health. Do you not see how those in whom the hair on the head and beard fails to grow after it is due to grow suffer some abnormality and are frail? If you can comprehend the above about hair and some of the wisdom of its being as it is, why do not you admit to what you do not know?

* Who caused the saliva to trickle inside the mouth all the time, without interruption, to moisten the palate and uvula, to facilitate speech and to moisten the food? Apocrates has said: The moisture in the mouth is the vehicle of food. Consider your condition when your saliva partially dries up, when this invaluable spring slows down!

Human Respiratory System

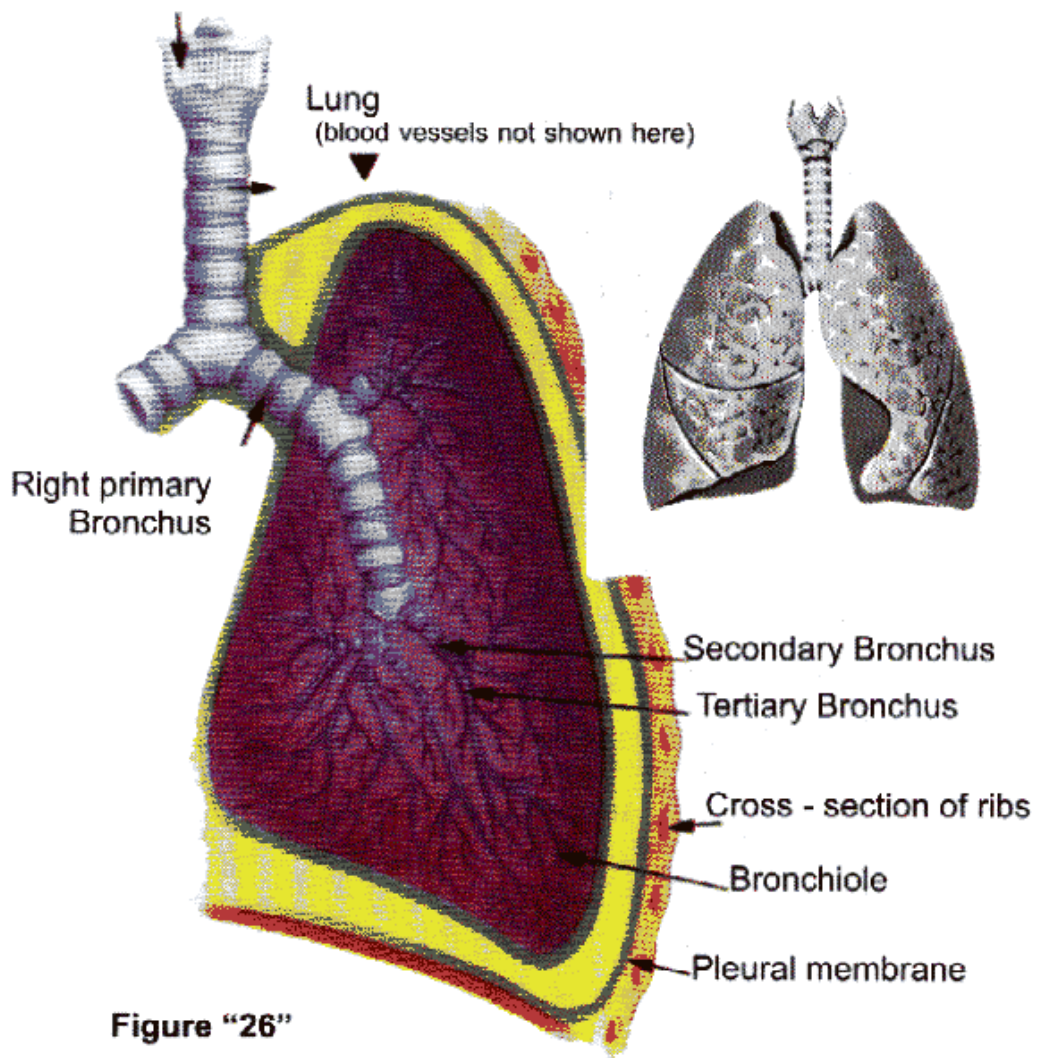


Figure "26"

Bronchial Tubes

Every day a human being breathes 25,000 times, in which he inhales 180 square meters of air, from which 6.5 meters are extracted to be used by the blood.

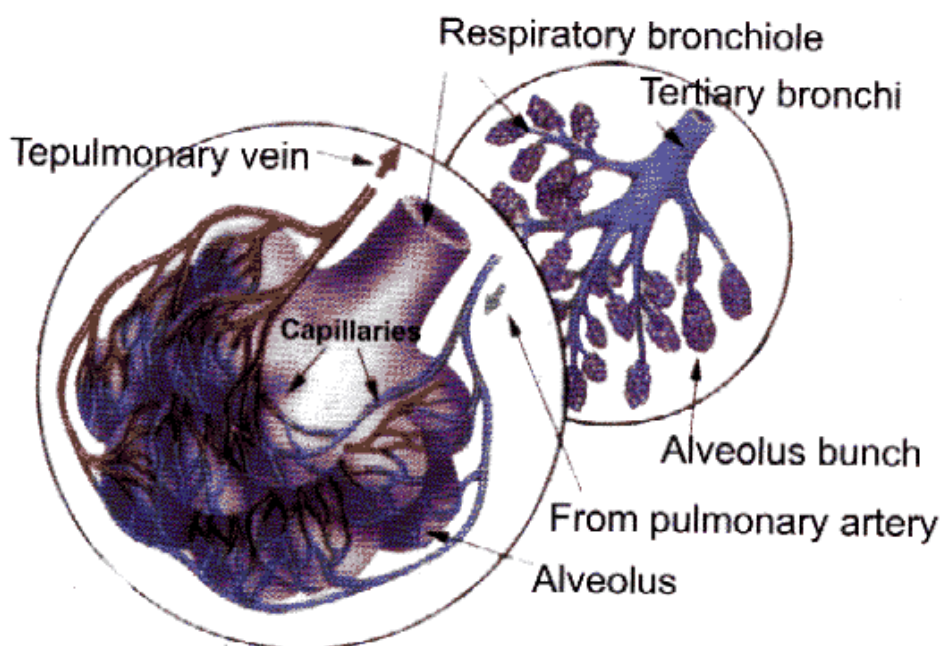


Figure "27"

Alveoli, the air sacs of the lungs

* The trachea branches into two primary bronchi, and these in turn divide progressively into smaller bronchioles and so on to the level of alveoli, which are about 750 million sacs in the two lungs. Each alveolar sac has a thin wall that connects to a capillary network. Here an exchange of carbon dioxide with oxygen takes place, in which the former is expelled and the latter, a vital substance for the body, is admitted.

* The network of alveoli spreads in an area in excess of 200 square metres to purify the blood. In normal conditions, not more than one tenth of the alveoli are in use at any time, but in crises more alveolar sacs operate.

Children's pain

Consider now the frequent crying of infants, and the great benefit of that. Indeed, physicians and naturalists have confirmed the benefit and advantage of that crying. They say: There is, in infants' brains, a moisture that, if left there, would cause great mischief. Crying causes the flowing of that harmful moisture, which descends then from the brain, and this enhances the brain's strength and ensures its healthy growth. Besides, crying and weeping expands the breathing channels, expands and strengthens blood vessels, and enhances nerves. Many a benefit and much good are realized by the crying that emanates from the infant. If crying, which results from a feeling of undue pain, embodies aspects of wisdom that are unfathomable to you, and may not even occur to you, think then in the same way of the pain that children endure: its causes and beneficial consequences embody such wisdom as would be unperceived by the majority of humans, who are so confused concerning its purpose to the point of clashing among themselves. They are sharply divided concerning that issue.

One group says that the pain of children can only be accounted for by the sheer will of the Lord; that no wisdom or purpose may be identified concerning it. By this attitude, this group has categorically denied itself access to fathoming the issue. Whenever this group is asked about anything related to creation its answer is the same:

لا يسأل عما يفعل

"He (i.e. the Lord) is not to be questioned as to what He does" (21: 23). This answer is impeccable, and the purport of it is not to deny the deep judgement that is involved in the Lord's actions, nor to dispute the good that is always served by His actions. The purpose in the above verse is to stress that the Lord has no associate

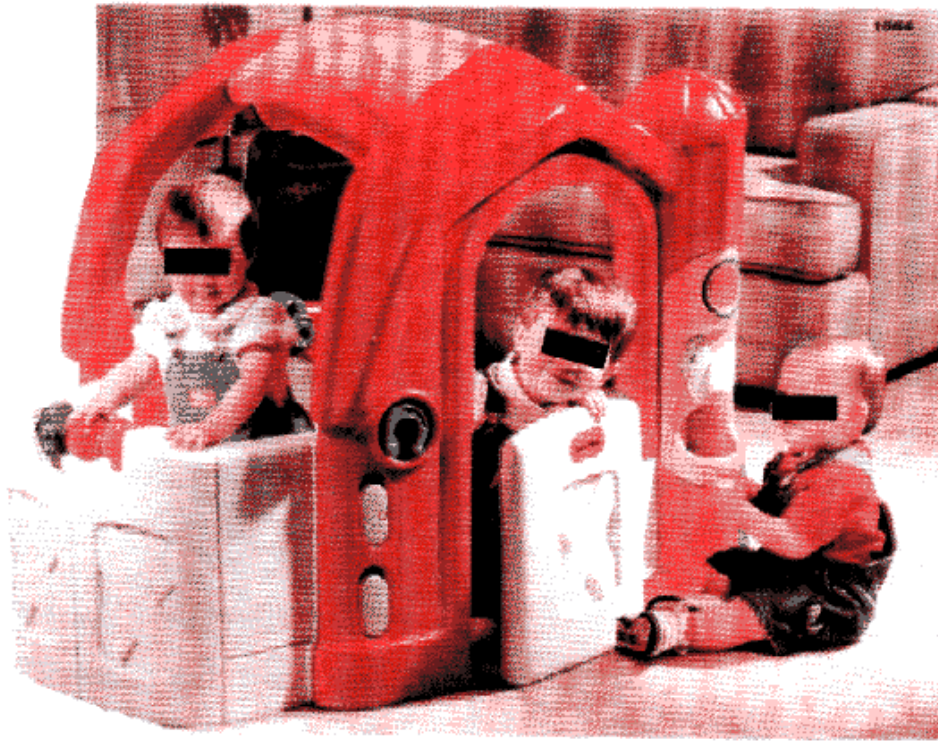


Figure "28"

in His Lordship and Divinity, to assert that there is no limit to His wisdom, no one to contradict His decree, that He may not be questioned, since nothing He creates is done in vain, nor did He create anything from a whim. One would ask about the point of a person's behaviour if he seems to behave senselessly, if his deeds do not reveal purpose or benefit. Do you not see in the following Qur'anic verses:

﴿ أَمِ اتَّخَذُوا إِلَهًا مِّنَ الْأَرْضِ هُمْ يُنشِرُونَ ○ لَوْ كَانَ فِيهِمَا آلِهَةٌ إِلَّا اللَّهُ لَفَسَدَتَا فَسُبْحَانَ اللَّهِ رَبِّ الْعَرْشِ عَمَّا يَصِفُونَ ○ لَا يُسْأَلُ عَمَّا يَفْعَلُ وَهُمْ يُسْأَلُونَ ﴾

[الأنبياء: ٢١-٢٣]

“Have they chosen gods from the earth who raise the dead? If there were therein gods beside Allah, then verily both the heaven and earth would have been in disorder. Glorified be Allah, the Lord of the Throne, from all that they ascribe unto Him. He will not be questioned as to that which He does, but they will be questioned.” (21: 21-23)

How rebuked are those who choose for His equals gods who are actually very unlike him. The verse: ‘He will not be questioned as to that which He does’ is a confirmation of His divinity, an emphasis of His Lordship and Godship; the phrase: ‘but they [i.e. the false gods] will be questioned’ denies the legitimacy of attributing godship to those other gods, on the ground that they are accountable before Him, controlled by Him; so how can they be held as His equals, despite the great disparity? This, in fact, is the point of focus of this verse, while the fatalists take it to be a refuge, an excuse to deny His wisdom or not to study His deeds with a view to discovering their objectives and good consequences. But it is Allah who guides to the right road.

Another group has said:

The wisdom of exposing children to hardship is so that they may be compensated in the Hereafter with undiminished recompense. When it is objected to this group that it is possible to extend reward to these people without this pain, they answer: pain mediates in their case in the same way as duties mediate in the case of accountable adults. When it is further objected that the above justification is untenable as pain may be inflicted on the children of unbelievers, they reply: we do not subscribe to the view held by some, namely that those children will enter hell, as no one will enter hell without sins, and these children have no sins counted against them. The same debate is held concerning children and the arguments and counterarguments are put forward, but this is not the right

place to recount all that. There have been arguments marshalled against these people to which they have not replied convincingly: the pain inflicted on the children of unbelievers, even if they reached puberty and lived as unbelievers until they died, is definitely no compensation, nor is it a punishment for their disbelief, since punishment may not be inflicted beforehand and ahead of time. They blunder a lot on this point, and their references have conflicting statements; what they say in this respect is not rationally acceptable.

A third group has said:

If you consider this problem you will see that it is pointless, that to try to settle it amounts to taking unnecessary trouble, as those sufferings, their outcome and causes are all a natural accompaniment of human development, that is an inevitable part of human existence, equal in that to heat, cold, hunger, thirst, fatigue, toil, depression, worries, weakness, and infirmity. To ask about the point of suffering is the same as to ask about the need for food when there is hunger, for drink when there is thirst, for rest and sleep when there is fatigue. Those pains are natural accompaniments of human development, unavoidable in the existence of humans and even animals; to dispense with them is to dispense with one's humanity and to be an angel or a different creature. Children's pains do not exceed adults', but since the latter get familiarized with them they may take them lightly. There is a vast difference between a youngster's suffering and an adult's. But both are a part of human nature and a natural result of creation; if a human did not encounter those pains, he would be other than a human. If one observes that a child who is hungry, thirsty, cold or tired suffers in a way that an adult is spared, it should be retorted that the latter has other ailments and diseases that are more or less than the

former's suffering of hunger, thirst, cold and heat. It is just that humans, and also animals, have been created like this.

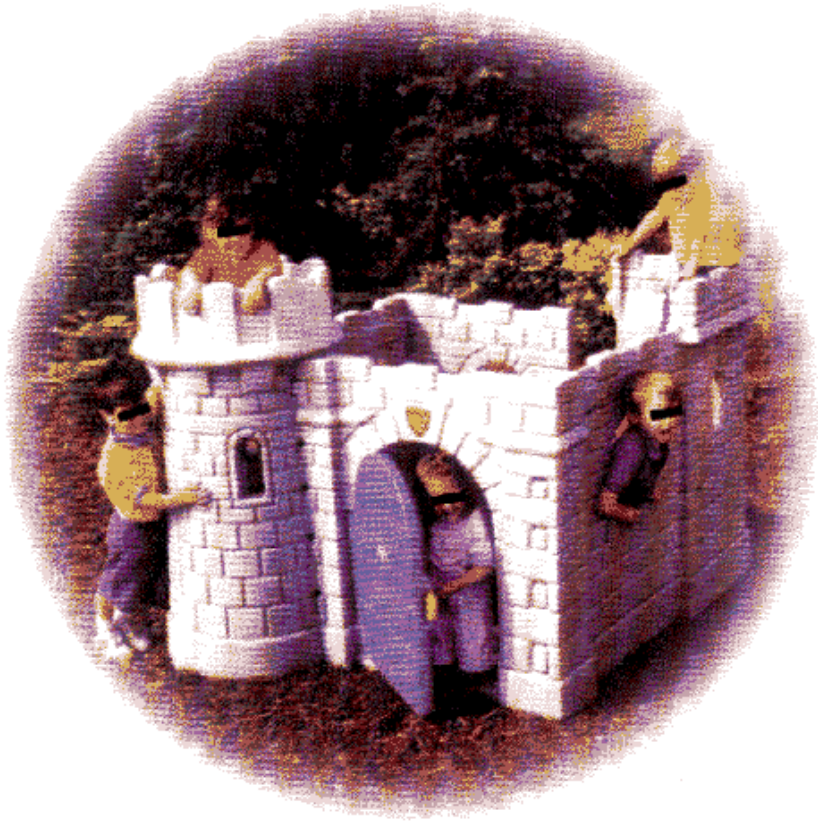


Figure "29"

The causes of ordeals

To the objection that someone may raise: why did He create that? Should He not rather have created his servants not subject to pain? The last-mentioned group answers: this objection is unacceptable, since the Almighty created man of a weak build in a world of test and ordeals, and so he is bound to encounter hardships, and is by nature subject to suffering. The human body has been endowed with the four humours [blood, phlegm, choler and melancholy], which are essential for human life, and man's very being is based on them. These humours are bound to cause interactions, mixings, and minglings, in a way that some of them will be in excess of the others, in quantity at times, and in quality at others. All this will inevitably lead to sufferings; it is pointless to admit the cause and object to the result. Besides, the Lord created in the human being capacities, desires, and the will that cause incessant movement and a pursuit of what is beneficial and a warding off what is harmful, individually at times, and with the assistance of others at other times. Hence, people are in need of each other, and there will be many encounters; and some will oppress others. There is bound to be in consequence suffering and ill-treatment such as that which results from the mixture of the humours and the dominance of some over others. Suffering will never be absent from this world of test and ordeal, in contrast to the world of recompence and eternal bliss. A person who fancies that the qualities adapted to that world should be applied in this is clinging to illusions. Absolute wisdom dictates that in this world blessing should be mixed with crisis, and relaxation with toil, pleasure with suffering, health with disease, happiness with unhappiness. It is the world of test where crises can only be staved off with other crises. This concept has been well and rightly expressed by a poet in the following couplet:

I live in the house of calamity;

Warding off disasters with other disasters.

If you consider eating, drinking, clothing, intercourse, relaxation and all the other pleasures of life you will notice that a human being uses them to ward off their counterparts of suffering and calamities. Do you not see that you ward off the pangs of hunger with eating, the pain of thirst with drinking, the pain of cold and heat with clothing, and so on? It is on this account that some sages have said: the pleasures of this world are for us a staving off of pains and nothing more; real pleasures may be enjoyed in another world and another state. Therefore, those sufferings and pleasures that are unavoidably intertwined in this life are a proof of the hereafter. They prove that the will that decreed the mingling of suffering and pleasure here has beyond doubt willed the existence of another existence where there will be two separate dwellings, one of pure pleasure, unadulterated without any suffering, and one of pure torture, unmitigated without any pleasure, the former being Paradise, and the latter being Hell. Indeed, the pleasure and suffering of this world should lead the human, endowed with innate nature, to ascertain the necessity of Paradise and Hell. Do you not see how you experience proofs and illustrations of them in your own life, and so vividly that you seem to see them with your own eyes? Consider, then, how both actual experience and sense perceptions indicate the sound judgement of the Lord, and the truth of what His Messengers have reported about Paradise and Hell. Observe how, by a consideration of the wisdom of the Almighty, He guides the minds and the innate nature to believe in the truthfulness of the apostles and the soundness of their report of things that the intellect can perceive in general, while the apostles report in detail. This is a far cry from the one whose knowledge leads him to

claim the existence of a contradiction between what the messengers have taught and the dictates and evidence of the intellect. But the 'intellects' of such people have been left by the Lord to drift aimlessly and to grope about on their own, and so they were beset with distractions on every side. Reflect on this! It is such sound reasoning and precious enlightenment that not many books will attempt.

The driving forces of the body's organs

Have a fresh look now at yourself, and think of the natural actions that have been bestowed on man, the benefits and wisdom they represent, and the driving force and dynamism of each action¹. Hunger evokes eating and necessitates it, on account of its being the basis for the nourishment of the body and its life; sleepiness evokes

¹ Ibn Al-Qayyem, may Allah give him mercy, speaks here of the driving forces and dynamos. Such forces have been diligently investigated by modern science; but while some have been unveiled, most are still a mystery. The endocrine system and the hormones have been put forward to account for such forces: they control various functions in the body, as other systems control other functions. Every system performs its specific role to organise the activities of the body's organs, activating them and alerting them to any hazard and protecting them. The nerves are the major system among these, and the glands are next in importance. Glands are like micro-factories that produce chemicals which they secrete to the body, as for instance they secrete the hormones that run in the body with the circulation of the blood.

The main glands of the body are:

In the head: the lachrymal (tear) glands, the salivary glands, the pineal gland, the pituitary gland (in the neck), the thyroid gland, the parathyroid gland.

In the chest: the thymus, the mammary gland (of women).

In the abdomen: the adrenal glands, the liver, the pancreas, the intestine glands, the ovaries (of women).

In the posterior (of man): the penis glands, the testes.

Each of the above glands have one or more functions, some of which we still do not know, or we do not know their manner of operation, or their effect on the body.

sleep and brings it on, on account of its necessity for the relaxation of the body and the organs and the recovery of abilities and reviving them to their vigour; lust evokes intercourse, which is the means for reproduction, the fulfilment of desire and the gratification of pleasure. These driving forces incite a human to seek the corresponding actions, and they arouse those stimuli involuntarily. This is as it should be, because if a human were given control of those drives, activating them at will, he would often be deflected from them for a while on account of various distractions, and the result would be that his body would grow frail and weak and start to decay without his being aware of it. Likewise, if his body is in need of any medicine or attention but the individual procrastinates and ignores it, the result will be that disease will take hold and lead to the human's perishing. Therefore, it was the mercy of the Gentle, the Knower, that willed that driving forces and stimuli spur him on and constantly remind him to undertake that which ensures his well-being, survival and welfare. Such stimuli come to him without any summoning or signaling on his part. Each action has its own drive which emerges spontaneously, urging him and spurring him on. Observe, too, what various capacities adapted for survival a human has been supplied with: the stimulating force that provokes the seeking of food, perceives what food it requires and gets it, and then passes it on to organs in amounts adapted to their capacity. There are forces that hold food, until such time that it is processed by nature and prepare it adequately for distribution, and then it is dispatched to the right recipients. There is the digestive force that processes the food in the body and metabolises it as it leaves the stomach. There is the excreting force that ejects the useless residue of food, dismissing it and excreting it from the body, lest it should harm the body and destroy it. Consider then, Who provided you with those forces when you badly

needed them? Who put them at your service? Who supplied each force with its functions and had each force perform its particular task, unlike any other? If they were antagonistic to each other, they would have annihilated each other's effect. So, Who prevented them from doing that? How would you, without the driving force, have sought to preserve the vitality of the body? How, without the holding force, would the food have moved down the channels to settle in the stomach? How, without the digestive force, would the food have been processed until the nutritious part is extracted and forwarded to the various parts of the body and the farthest extremes of it? How, without the driving force, would the obnoxious and lethal residue (if held too long) have been expelled from the body, bit by bit, relieving the body and unburdening it? Observe how these forces were created to take care of you and keep a watch to preserve your welfare. The body is like the residence of a king, with his servants and attendants serving in it: some he has entrusted with maintaining the residence; some with shopping for the residence and bringing its needs; some with collecting the purchased items, and preparing them for use, and then distributing them to the residents in accordance with their needs; some with sweeping the house, dusting it, and dispensing with rubbish and waste. The king in this case is the King, the True and Manifest King, may He be glorified; the residence is your body; the servants and attendants are your organs and limbs; and they are served by the forces described above.

The outlook of the believer versus that of Others

A naturalist's or a physician's perspective of the things we have been discussing above is different from a knowledgeable believer's. The naturalist and physician are

concerned with investigating aspects of preserving good health and averting sickness; a believer, on the other hand, contemplates things with a view to discerning proofs in them of their Creator and Maker; His exceeding wisdom, generous liberality and bounty, which He urges His servants to respond to with remembrance and gratitude.

Remembering and forgetting

Consider, then, the wisdom of Almighty Allah in remembering and forgetting, a quality unique to the human species. Reflect on the many services they give, and the benefits that accrue to the human from them. Without the faculty of remembering, bestowed solely on man, there would be a great muddle in all his affairs; he would not distinguish what is due to him from what is his duty; what he received from what he handed out; what he heard from what he saw; what he uttered from what was addressed to him; he would not distinguish his benefactor from his antagonist; he would not recall those who had dealings with him; he would not remember to seek closeness to the one who had done good to him, nor to avoid the one who had done him mischief; he would not find a way that he had tried and found right even after going along it many times; he would not accumulate knowledge in any particular field even if he had devoted all his life to it; he would not benefit from experience, or draw a lesson from what has passed – indeed he would cease to be a member of mankind.

Reflect, then, on the immense blessing of all these benefits. Think of the amount of good each aspect realizes for you, and then how much they represent in their totality! One of the most curious blessings is forgetting: without forgetting a human being would find no consolation for any loss, his grief would be without end;

he could not get over the effect of a disaster; his mourning would be permanent, his malice would be for ever; he would not enjoy any of life's amusements with his mind full of the memory of catastrophes; he would have no hope of the relenting of an adversary, or the abating of the ill-feeling of an envier. Reflect, then, on Allah's bounty in providing you with the ability to remember and forget, despite their antithesis and opposition; each performing its respective part.

" Al-Haya' "

Consider also the trait of "Al-Haya' " (modesty, sense of shame in reverence of Allah or of men) which is uniquely human in contrast with all sub-species. "Al-Haya' " is one of the best, most remarkable and fruitful moral qualities; it is, in fact, the cardinal human trait – any human devoid of this moral quality has no more of the human being than the outer appearance and physique; he has no trace of goodness about him. Without this trait, no hospitality would be shown to a guest, no promise would be honoured, no pledge would be fulfilled, no helpless person would be helped; one would not distinguish goodness from evil, holding the former in high esteem and avoiding the latter; a human would not hide his misdeeds or hold back from a sin. It is true of many people that it is only al-haya' that stimulates them to undertake what they are supposed to do; without it they would not honour anybody's right, would not observe the rights of kinship and would not respect a parent. The stimulus for all these deeds is either religious, expecting a favourable recompense; or worldly, the doer's fear of what other people will say. It can be said that without al-haya' (fear of the Creator, or of His creatures) man would cease to do any good.

In support of this, one may refer to the following tradition, reported by Al-Tirmidhee, among others. The Prophet ﷺ said:

«اسْتَحْيُوا مِنْ اللَّهِ حَقَّ الْحَيَاءِ!» قَالُوا: وَمَا حَقُّ الْحَيَاءِ؟ قَالَ: «أَنْ تَحْفَظَ الرَّأْسَ وَمَا حَوَى، وَالْبَطْنَ وَمَا وَعَى، وَتَذْكُرَ الْمَقَابِرَ وَالْبِلَى».

“Have haya’ in respect to Allah in the right sense of haya’!” “And what is haya’ in the right sense?” the Sahabah (Companions) asked. He said, “It is to control the head with what it perceives, the belly with what it contains, and to be mindful of the tomb and decay.”² In another tradition, the Prophet said:

«إِذَا لَمْ تَسْتَحِ فَاصْنَعْ مَا شِئْتَ».

“If you feel no haya’ (shame), then you can do anything.”³ This last tradition is best understood in the way Abu Ubaid and the majority understood it, that it is a threat, rather similar to the purpose in the following Qur’anic verse:

﴿اعْمَلُوا مَا شِئْتُمْ﴾ [فصلت: ٤٠]

“Do what you will,” (41: 40); or the other verse:

﴿كُلُوا وَتَمَنَعُوا قَلِيلًا﴾ [المرسلات: ٤٦]

“Eat and take your ease on earth a little.” (77: 46)

² Reported by Ahmad, Al-Tirmidhee and Al-Hakim; the last said about the line of reporters: authentic, which was corroborated by Al-Dhahabee. Al-Baihaqee reported it in his: “Shu’ab Al-Eeman”. Al-Albanee rated the tradition as ‘good’, in: Saheeh Al-Jame’ (I/318)

³ Reported by Al-Bukharee (10/523), by Al-Baghawee in Sharh Al-Sunnah, by Ahmad (4/121), and Al-Baihaqee in “Al-Sunan Al-Kubra”.

According to others, the above tradition is a permission and allowance, in the sense that if you feel inclined to do something, then think before you embark on it: if it is such that you would feel afraid of Allah or of people when doing it, then do not do it; and if it does not cause you to feel haya', do it, for it is not a sinful deed.

In my opinion, the above tradition is grammatically in the form of a demand; its real meaning is factual, rather similar to the common saying that he who has no haya' (sense of shame) will do what he desires: it is not a permission or a direct threat. It has the effect of presenting a fact; it says that the deterrent to bad behaviour is only haya', while a person who has no haya' will do what he likes. The sense has been expressed in the form of a fact for a very curious reason, that a human has two commanders and prohibitors, a commander and prohibitor on behalf of haya', which, if he obeys, it would make him abstain from doing all that he desires; and another commander and prohibitor on behalf of desire and nature. A person who fails to obey the commander and prohibitor representing haya' will invariably obey the commander and prohibitor representing desire and caprice. By using the imperative, the above meaning is included, unlike the saying: "If you feel no haya', then you can do whatever you desire."

Good expression

Consider now Allah's mercy in endowing man with the two forms of expression, the oral and the orthographic. They have been stressed by the Almighty in the course of listing His graces to man. We can see this in the opening verses of the first surah revealed to the Messenger of Allah, ﷺ:

﴿ أَقْرَأْ بِأَسْمِ رَبِّكَ الَّذِي خَلَقَ ○ خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ ○ أَقْرَأْ وَرَبُّكَ الْأَكْرَمُ ○ الَّذِي عَلَّمَ بِالْقَلَمِ ○ عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ ﴾ [العلق: ١-٥]

“Read in the name of thy Sustainer, who has created – created man out of a germ-cell! Read – for thy Sustainer is the Most Bountiful One, who has taught man the use of the pen – taught man what he did not know!” (96: 1-5)

See how Allah condenses in the above verses all the phases of creation; how the verses describe most concisely, coherently and beautifully the four levels of existence. He starts with creation in general, which is the conferring of external existence; then, since man is the target of attention here, He turns to the uniqueness of the creation of man to point out the significance of the creation, which, He emphasizes, is wondrous. By just considering his own creation, man can observe the many aspects of Allah’s bounties. In this place, the Qur’anic text only mentions the development of the human from a clot, while in other contexts it mentions the stages that preceded it. The first matter from which the creation of man was started is earth and mud, or ‘sounding clay’. In some other locations in the Qur’an, however, another material of creation is stressed, the liquid of little worth (i.e. semen). The Qur’an mentions here the first stage of formation, the clot. Prior to this, there is the drop of semen, which directly leads to the clot.

In the present context, a third phase is mentioned, teaching by the pen, one of the greatest blessings bestowed by the Lord on His servants, since it is the means for preserving sciences, confirming rights, transmitting teachings, recording witnesses, and reckoning the accounts of dealings among people. It is by means of writing that knowledge about ancestors is preserved for their progeny. Without writing, the events of bygone periods would be inaccessible to a later period, traditions would fade away, rulings would become confused, and the succeeding generations would be ignorant of the convictions of their ancestors; the major hurdle to

efficiency in people's worldly and religious affairs would be oblivion, which blots out the items of knowledge from their minds. Writing is the vehicle that preserves knowledge from being lost, in the same way that cabinets preserve possessions from getting lost. Next to the Qur'an, writing is one of the most valuable of Allah's blessings. Although acquiring knowledge by the pen is realized by intelligence and skill, the means by which this is made possible (i.e. writing) is a sheer blessing freely conferred by Allah, a free grant from Him and an additional bounty that raises man's capability. It is the Lord who taught man reading and writing, notwithstanding man's effort to learn. Man's act of learning is in response to the Teacher who taught by means of the pen; He taught man, and man learned, rather in the same way as He taught man speech, and he spoke.

Besides, Who gave man the mental power that enables him to perceive incoming messages, the tongue that expresses what he desires to state, the fingers that commit it to paper? Who provided his mind with the ability to acquire knowledge, an ability that all other animals were denied? Who enabled man's tongue to make utterances and his fingers to make dexterous movements? Who supported the fingers with the hand, the hand with the arm? Many a sign of Allah's teaching with the pen do we pass by heedlessly!

On writing

Let us dwell for a while on the case of writing! Consider yourself, how you hold the pen, an inanimate object, apply it to the paper, another inanimate object, and from the meeting of the two objects emerge all sorts of wisdom and all branches of knowledge, the great variety of correspondence, sermons, prose and verse and treatises on specific issues. Who, then, caused ideas to occur to your

mind in a flux, and impressed them on your memory? Who caused the utterances that represent those ideas to run along your tongue, then to be inscribed with a movement of your fingers? It is an amazing inscription that emerges there, implying even more spectacular wonders than its visible form; it enables you to fulfill your wishes, to represent what you conceive in the depths of your mind, and transmit it to far off lands and various territories; it functions there as your emissary, representing what you have to say; it announces what your tongue would announce, plays the part of your messenger, often more effectively than a human messenger. Who but He has taught with the pen, taught man what he did not know?

Teaching by the pen implies all three levels of existence: the levels of mental existence, verbal existence and orthographic existence. Teaching by means of the pen is an indication that the Almighty is the One who bestows those levels; the word 'created' in the above verses is an indication that Allah bestows material existence. In a most concise, effective and eloquent way, the above verses assert that all levels of existence are attributed to the Almighty, in creation and in teaching. He mentioned two creations and two acts of teaching, a general creation and a special creation, a general teaching and a special teaching. He also mentioned here, referring to Himself, the attribute 'Akram' (the most generous, the noblest, the most perfect) which implies all good and perfection: all perfection belongs to Him as an attribute, and all good proceeds from him as action; He is the 'Akram' in Himself, in His attributes, and in His actions. The creation and teaching mentioned here are attributable to His generosity, liberality, and bounty; they do not proceed from any necessity that requires them: He is the Rich, the One deserving thanks.

If we consider another group of verses:

﴿الرَّحْمَنُ ۝ عَلَّمَ الْقُرْآنَ ۝ خَلَقَ الْإِنْسَانَ ۝ عَلَّمَهُ الْبَيَانَ﴾ [الرحمن: ١-٤]

“The Beneficent has made known the Qur’an. He has created man, He has taught utterance,” (55: 1-4), we find that they denote that the Almighty has conferred all levels of existence. When He says: “created man”, He is describing the bringing into existence in the external, concrete sense; and here, as mentioned above, the focus is on man. The expression “made known the Qur’an”, is a statement about the endowment of mental-intellectual existence. Man only learnt the Qur’an by being taught, in the same way that he was man by being created as man: it is He who created him, and taught him. The next verse says: “taught utterance”. Utterance (or expression) covers three levels of existence, each of which is called expression. One is mental expression, where information is conceived; the second is verbal expression, where this information is encoded and represented to others; and the third is orthographic visible expression, in which the uttered expressions are given a graphic shape, so that one can decode the sense by looking at the inscriptions, in the same way that a hearer perceives the sense by listening to sounds; the former addresses sight, the latter addresses hearing, and the mental expression addresses the mind. These three levels are often mentioned together in the Qur’an, as you see in the following verses:

﴿إِنَّ السَّمْعَ وَالْبَصَرَ وَالْفُؤَادَ كُلُّ أُولَئِكَ كَانَ عَنْهُ مَسْئُولًا﴾ [الإسراء: ٣٦]

“The hearing and the sight and the heart – of each of these it will be asked.” (17: 36)

﴿وَاللَّهُ أَخْرَجَكُمْ مِنْ بُطُونِ أُمَّهَاتِكُمْ لَا تَعْلَمُونَ شَيْئًا وَجَعَلَ لَكُمُ السَّمْعَ

وَالْأَبْصَرَ وَالْأَفْعِدَةَ لَعَلَّكُمْ تَشْكُرُونَ﴾ [النحل: ٧٨]

“And Allah brought you forth from the wombs of your mothers knowing nothing, and gave you hearing and sight and hearts that haply ye might give thanks.” (16: 78)

In other places in the Qur’an, the Almighty rebukes those who fail to benefit from these channels to attain to right guidance and beneficial knowledge. For example, in (2: 18)

﴿صُمُّوا بِكُمْ وَعَمِيَ فَهُمْ لَا يَرْجِعُونَ﴾ [البقرة: ١٨]

“They are deaf, dumb and blind, so they return not.(to the right path).”

Also see (2:7):

﴿حَتَمَ اللَّهُ عَلَى قُلُوبِهِمْ وَعَلَى سَمْعِهِمْ وَعَلَى أَبْصَارِهِمْ غِشَاوَةٌ﴾ [البقرة: ٧]

“Allah hath sealed their hearing and their hearts, and on their eyes there is a covering. Theirs will be an awful doom.”

This, however, has already been discussed in detail.

Knowledge and ignorance

Reflect on the wisdom of the Gentle, the Omniscient, when He endowed man with such knowledge as he may need for optimal life in this world and in the hereafter; while He withheld from man knowledge that he does not need, and which there is no harm in missing. He greatly facilitated the means of acquiring the required knowledge; the more that was required, the more did He facilitate its acquisition. He bestowed on man knowledge of and recognition of his Creator, Maker, Originator, the Almighty Lord – the way to such knowledge has been greatly smoothed. There is nothing in the branches of knowledge that compares with this in importance, nor with its

obviousness to the mind and innate nature; no branch of knowledge has as many ways and proofs as this knowledge, nothing is equal in obviousness and clarity – all that your eye sees, all that your ear hears, all that your mind thinks of, all that occurs to you, and all that any of your senses receive, is a proof of the Lord. The ways to knowing the Maker are innate and self-evident, so that nothing in the branches of knowledge is as manifest as this knowledge. The most compelling of proofs falls short of the fact it tries to prove. That is the reason the messengers of Allah used to say to their people: “Is there any doubt about Allah?” They addressed them in a tone that meant there should be no doubt whatsoever about the existence of Allah Almighty. He established proofs about His existence, Oneness, the attributes of His perfection of such abundance that no one but Allah can list all their variety or number; then He implanted that in the innate nature, and ingrained it in the mind in a general way; then He sent His messengers to remind people of Him. We find a support of that in the following verses from the Qur’an:

﴿ وَذَكِّرْ فَإِنَّ الذِّكْرَ يُنْفَعُ الْمُؤْمِنِينَ ﴾ [الذاريات: ٥٥]

“And warn, for warning profits believers,” (51: 55);

﴿ فَذَكِّرْ إِن نَّفَعَتِ الذِّكْرَى ﴾ [الأعلى: ٩]

“Therefore remind men, for of use is the reminder,” (87: 9);

﴿ فَذَكِّرْ إِنَّمَا أَنْتَ مُذَكِّرٌ ﴾ [الغاشية: ٢١]

“Remind them, for thou art but a reminder,” (88: 21);

﴿فَمَا هُمْ عَنِ التَّذْكَرَةِ مُعْرِضِينَ﴾ [المدثر: ٤٩]

“Why now turn they away from the admonishment,” (74: 49);

and many others. The messengers also elaborated what innate nature and the mind know to be true in general. See how the innate nature has ingrained in it the assertion of the Lord’s existence, His Oneness, the attributes of His Perfection, Highness, and Wisdom as embodied in His creation and injunctions, which assert the truth of His messenger’s message, and the compensation for the righteous with becoming reward, and the fitting punishment for the wrong-doer. If the innate nature were preserved in its original state which it had when created, if it had not been exposed to influences that contaminated it and corrupted it and diverted it from what it was made to be, it would have confirmed the Lord’s Oneness, the necessity of thanking Him and obeying Him, His attributes and Wisdom as embodied in His actions, and the belief in reward and punishment. But because it was corrupted and diverted from the way it was created, it denied things and rejected things. This is why Allah sent His messengers as reminders that appeal to those with uncorrupted and undistorted innate natures. These people responded willingly, of their own volition, passionately and heartily, heeding to the evidence they found in their hearts: indeed some did not even ask for miracles and supernatural evidence; they rather perceived the truth of the call from its content; this alone was sufficient to make them sure of its being a truthful call; being its proof in itself. The messengers also demonstrated their honesty and refuted the claims of those with corrupted innate natures, so that the latter should not complain to Allah that He did not send them guidance and illumination. These latter have been warned, and the proof of their being in the wrong

has been established, so that when Allah tortures them and condemns them, He will not have been unjust to them. This is the purport of the following verses from the Qur'an:

﴿ وَمَا عَلَّمْنَاهُ الشِّعْرَ وَمَا يَنْبَغِي لَهُ إِنْ هُوَ إِلَّا ذِكْرٌ وَقُرْآنٌ مُبِينٌ ۝ لِيُنذِرَ مَنْ كَانَ حَيًّا وَيَحِقَّ الْقَوْلُ عَلَى الْكَافِرِينَ ﴾ [يس: ٦٩، ٧٠]

“And We have not taught him (Muhammad) poetry, nor is it meet for him. This is naught else than a Reminder and a Lecture making plain, to warn whosoever liveth, and that the word may be fulfilled against the disbelievers.” (36: 69-70)

Reflect, then, how the knowledge about Allah, the testification of His Oneness, the affirmation of His Names and Attributes, the message of His messengers and the resurrection have been shown to be ingrained in the innate nature, although man is often unaware of that. When the messengers called his attention and alerted him, they enabled man to notice that what they told him was in fact well-established in his innate nature, that his mind, and even his senses, and his whole being testify to it. This is the utmost that belief can achieve, the level of belief described in the Qur'an as dwelling in the hearts of Allah's friends and intimates, as you can see in the following verse:

﴿ أُولَئِكَ كَتَبَ فِي قُلُوبِهِمُ الْإِيمَانَ ۝ [المجادلة: ٢٢]

“As for such, He has written faith upon their hearts and has strengthened them with a spirit from Him.” (58: 22)

Study again, then, the above chapter, as it is among the treasures of this book; it is worth hoarding and dwelling upon. May Allah be thanked; all good is from Him.

The stages of the creation of a human in the mother's womb

End of week one: A male's sperm unites, in the fallopian tube, with a woman's ovum, or egg, resulting in one cell, ready for division and multiplication. It divides into many cells while travelling down to the uterine wall, where it becomes embedded in the uterine wall in the same way that some wild plants cling to a wall. This stage is described in the Qur'an with the following words:

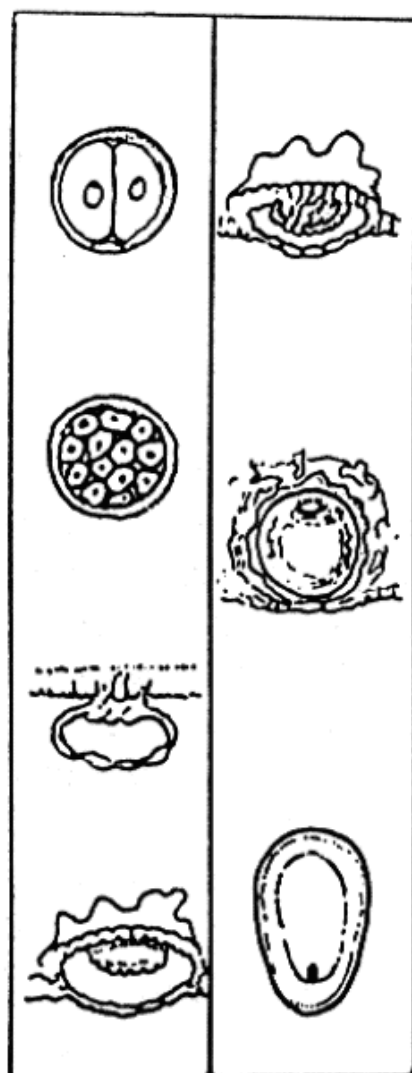
﴿ تَرَى خَلْقَنَا النَّطْفَةَ عَلَقَةً ﴾ [المؤمنون: ١٤]

"Then fashioned We the drop a clot." (23: 14)

End of week two: This lump, the first cells, is divided internally, forming three specialized parts: 1) the blood cycle of the placenta; 2) the embryonic disc; 3) the fluid in which the embryo swims. About this, the Almighty says in the Qur'an:

﴿ فَخَلَقْنَا الْعَلَقَةَ مُضْفَكَةً ﴾

"then fashioned We the clot a little lump." (23: 14) The embryo is not visible yet to the naked eye.



End of week three: The embryonic disc divides into three germ layers:

The outer germ layer (ectoderm) from which Almighty Allah creates:

a) Surface organs:

The skin, the hair, the nails, the skin glands, the milk glands, the anterior lobe of the pituitary gland, the enamel of the teeth, the inner ear, the eye lens.

b) Nervous organs:

Sensitive cranial nodes and nerves, the kernel of the adrenal glands, the pigment cells, the cartilage of the limbs, the central nervous system, the retina, the posterior part of the pineal gland.

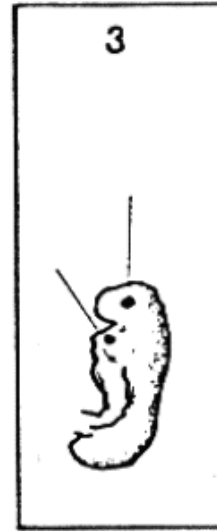
The middle germ layer (mesoderm), from which Almighty Allah creates:

The connective tissue, the muscles of the internal organs of the body and the extremities, the outer membrane of the lungs, the membrane of the heart, the membranes of the intestine, blood cells, the blood circulation system, the lymph system, the spleen, the outer part of the adrenal glands, the urinary-reproductive system, the reproductive organs, with the related ducts and glands, the skeletal muscles, the skeleton, excluding the skull.

The inner germ layer (the endoderm), from which Almighty Allah creates:

The lining of the trachea, the air bronchioles, the endothelial cells of the digestive system, the liver, the pancreas, the bladder, the columnar cells of the pharynx (throat), the thyroid gland, the eardrum cavity, the tube connecting the larynx to the eardrum cavity, the tonsils, the parathyroid glands.

By the end of this week, the brain has formed, the spinal cord has spread, the thyroid gland has begun to form, the tubes of the heart have begun to fill, and side protrusions, called the body bits, have begun to emerge, (see figure). In this connection, we may cite the Qur'anic verse:



﴿ فَخَلَقْنَا الْمُضْغَةَ عِظْمًا فَكَسَوْنَا
الْعِظْمَ لَحْمًا ﴾ [المؤمنون: ١٤]

“Then fashioned We the little lump bones, then clothed the bones with flesh.” (23: 14)

End of week four:

The neural folds merge

Eye and ear buds begin to appear

Buds of the upper limbs begin to appear

The embryo is now 4 mm long (equal to a rice grain)



End of week five



- Cavities of the eyes appear
- Ear buds appear
- The nose bud appears
- The outline of the mouth appears
- The palm of the hand has appeared, but without the fingers
- The head seems to be larger than the trunk
- Cerebral vessels have formed
- Buds of legs have appeared
- The embryo is now 8 mm long (equal to a water melon seed)

End of week six



- The openings for the mouth and the nose are still unseparated
- The foot has appeared, but without the toes
- The upper lip has formed
- The bending at the elbow is seen
- The lines of the fingers are visible
- On day forty-two the embryo is approximately 1.3 cm.

Describing some of these stages, the Prophet ﷺ, says:

«إِذَا مَرَّ بِالتُّطْفَةِ اثْنَتَانِ وَأَرْبَعُونَ لَيْلَةً بَعَثَ اللهُ إِلَيْهَا مَلَكًا فَصَوَّرَهَا، وَخَلَقَ سَمْعَهَا وَبَصَرَهَا وَجِلْدَهَا وَلَحْمَهَا وَعِظَامَهَا، ثُمَّ قَالَ: يَا رَبِّ أَدَكَرُ أَمْ أُنْثَى؟ فَيَقْضِي رَبُّكَ مَا شَاءَ، وَيَكْتُبُ الْمَلَكُ.»

“After an embryo is forty-two days old, Allah sends an angel to it, who shapes it, forming its hearing, sight, skin, flesh and bones. Then he says: “O my Lord! Shall it be male or female? The Lord utters His judgement, and the angel writes it down.” (Reported by Muslim)

In the Qur’an, we read the following about the embryo at this stage:

﴿ ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ فَتَبَارَكَ اللهُ أَحْسَنُ الْخَالِقِينَ ﴾ [المؤمنون: ١٤]

“and then [We] produced it as another creation. So blessed be Allah, the Best of Creators!” (23: 14)

End of week seven



The reproductive system appears, but at this stage it is not clear whether it is a male or a female.

- The trunk is longer and straighter

- The embryo is 1.8 cm

By weeks eight, nine and ten the reproductive organs of male and female are very clearly distinguished

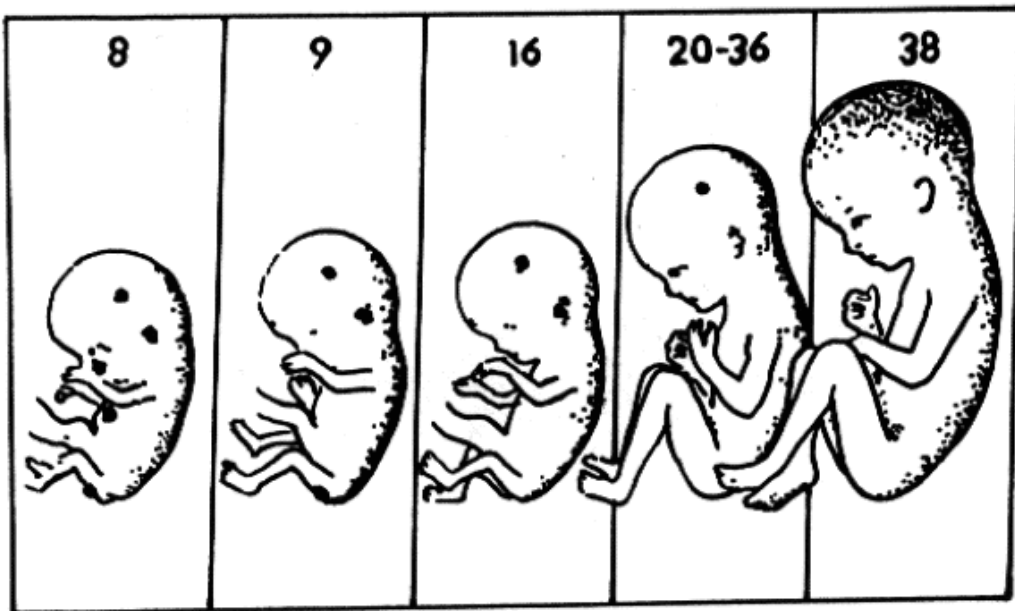
The embryo is now about 6 cm

After week ten the embryo only grows, because its formation is complete.

In this connection, it is appropriate to refer to the following verse from the Qur'an:

﴿ اللَّهُ يَعْلَمُ مَا تَحْمِلُ كُلُّ أُنْثَىٰ وَمَا تَغِيضُ الْأَرْحَامُ وَمَا تَزْدَادُ وَكُلُّ شَيْءٍ عِنْدَهُ بِمِقْدَارٍ ﴾ [الرعد: ٨]

“Allah knows that which every female bears and that which the wombs absorb and that which they grow. And everything with Him is measured.” (13: 8)



Chapter Two

The Universe

The Almighty says in the Qur'an:

﴿أَأَنْتُمْ أَشَدُّ خَلْقًا أَمْ السَّمَاءُ بِنْتِهَا ۚ رَفَعَ سَمَكَهَا فَسَوَّيْنَاهَا﴾

[النازعات: ٢٧، ٢٨]

“Are ye the harder to create, or is the heaven that He built? He raised the height thereof and perfected it.”

Al-Qur'an (79:27,28)

Heaven and the genesis of planets

The Almighty says in the Qur'an:

﴿ثُمَّ اسْتَوَىٰ إِلَى السَّمَاءِ وَهِيَ دُخَانٌ فَقَالَ لَهَا وَلِلْأَرْضِ ائْتِيَا طَوْعًا أَوْ كَرْهًا قَالَتَا أَتَيْنَا
طَائِعِينَ﴾ [فصلت: ١١]

“Then turned He to the heaven when it was smoke, and said unto it and unto the earth: Come both of you, willingly or loth. They said: we come, obedient.”

Al-Qur'an (41: 11)

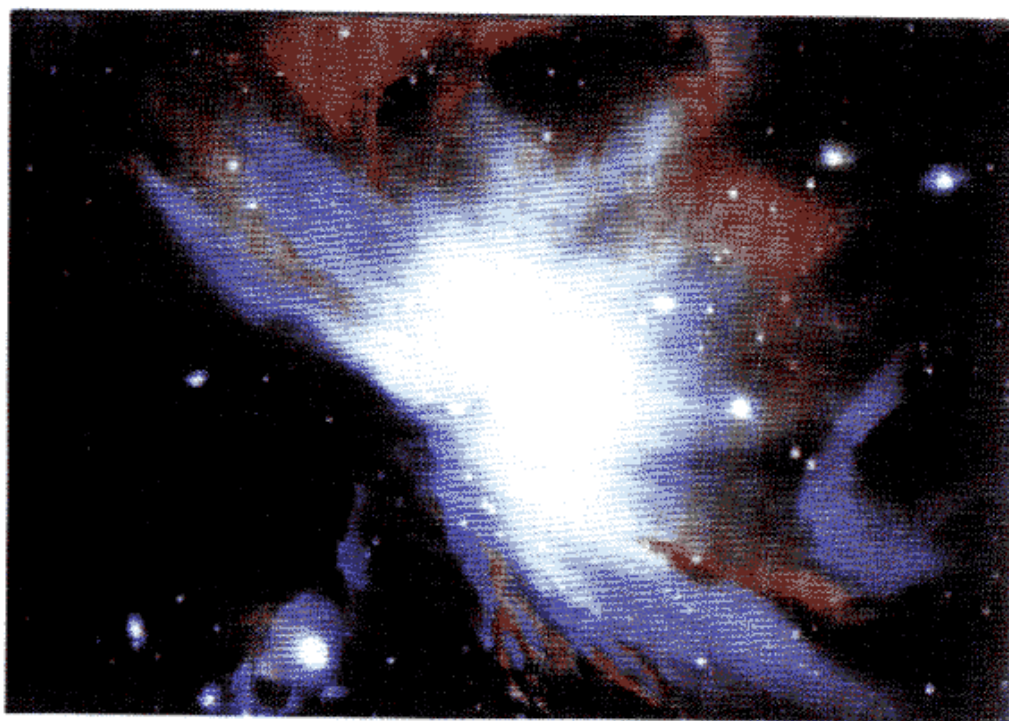


Figure "37"

* Astronomers say that the bodies of the sky, the stars and the planets, were originally a hazy matter, called a nebula. Even now, stars consist of this matter, and the nebula consists of light gases in which are suspended tiny particles of solid matter, making up a dark mass. This tallies with the Qur'anic word, 'smoke', mentioned in the above verse.

Moving planets

Ibn Al-Qayyem says:

Consider then the handiwork of Allah in creating the heavens, their loftiness, roundness, and vastness; the excellence of their structure; the wonders of the sun, the moon, and planets; their dimensions and shapes; the variety of their risings and settings. No atom separates from a mass without there being wisdom in it. The heavens are more splendid in their structure and in the subtlety of their building than man's body; all the wonders of the earth are little compared to those of the heavens. Let us read about that in the Noble Qur'an:

﴿أَأَنْتُمْ أَشَدُّ خَلْقًا أَمْ السَّمَاءُ بَنَاهَا ۖ رَفَعَ سَمَكَهَا فَسَوَّيْنَاهَا﴾ [النازعات: ٢٧، ٢٨]

"Are ye the harder to create, or is the heaven that He built? He raised the height thereof and ordered it." (79: 27-28)

﴿إِنَّ فِي خَلْقِ السَّمَوَاتِ وَالْأَرْضِ وَاخْتِلَافِ اللَّيْلِ وَالنَّهَارِ وَالْفُلْكِ الَّتِي تَجْرِي فِي الْبَحْرِ بِمَا يَنْفَعُ النَّاسَ وَمَا أَنْزَلَ اللَّهُ مِنَ السَّمَاءِ مِنْ مَّاءٍ فَأَحْيَا بِهِ الْأَرْضَ بَعْدَ مَوْتِهَا وَبَثَّ فِيهَا مِنْ كُلِّ دَابَّةٍ وَتَصْرِيفِ الرِّيْحِ وَالسَّحَابِ الْمُسَخَّرِ بَيْنَ السَّمَاءِ وَالْأَرْضِ لَآيَاتٍ لِقَوْمٍ يَعْقِلُونَ﴾ [البقرة: ١٦٤]

"Lo! in the creation of the heaven and the earth, and the difference of night and day, and the ships which run upon the sea with that which is of use to men, and the water which Allah sends down from the sky, thereby reviving the earth after its death, and dispersing all kinds of beasts therein, and in the ordinance of the winds, and the clouds obedient between heaven and earth, are signs of Allah's sovereignty for people who have sense." (2: 164)

In the above verse He gives priority to the heavens. This occurs again in another verse:

﴿إِنَّ فِي خَلْقِ السَّمَوَاتِ وَالْأَرْضِ وَاخْتِلَافِ اللَّيْلِ وَالنَّهَارِ لَآيَاتٍ لِّأُولِي الْأَلْبَابِ﴾

[آل عمران: ١٩٠]

“Lo! In the creation of the heavens and the earth and in the difference of the night and day are tokens of His sovereignty for men of understanding.” (3: 190)

Verses like the above abound in the Qur’an. The entire volume of the earth, the oceans, the atmosphere and all beneath the heavens is, when compared to the heavens themselves, like a drop of water compared to the volume of the sea. Hence, mention of the heavens throughout the Qur’an occurs again and again, their vastness and enormity; swearing by them, calling men to contemplate them, or guiding them to find in the heavens evidence of the majesty of their Builder and Raiser; or referring to their creation to prove the Qur’an’s description of the hereafter and resurrection; the Lord may mention His controlling of the heavens to confirm His Oneness, that He is Allah, beside Whom there is no god, or may refer to their splendour, compactness, and the integration of their parts, without any rifts, to assert the perfection of His wisdom and ability. The Qur’an also often mentions the planets, the sun, the moon, and all the wonders of their creation, of which men can but discern a small part. Time and again, the Qur’an would swear by these bodies, such as in the following verses:

﴿وَالسَّمَاءِ ذَاتِ الْبُرُوجِ﴾ [البروج: ١]

“By the heaven, holding mansions of the stars;” (85: 1)

﴿وَالسَّمَاءِ وَالطَّارِقِ﴾ [الطارق : ١]

“By the heaven and the morning star!” (86: 1)

﴿وَالسَّمَاءِ وَمَا بَنَاهَا﴾ [الشمس : ٥]

“And [by] the heaven and Him Who built it;” (91: 5)

﴿وَالشَّمْسِ وَضُحَاهَا﴾ [الشمس : ١]

“By the sun and his brightness;” (91: 1)

﴿وَالنَّجْمِ إِذَا هَوَىٰ﴾ [النجم : ١]

“By the star when it sets;” (53: 1)

﴿فَلَا أُقْسِمُ بِاللُّغْنِيسِ﴾ [التكوير : ١٥]

“O, but I swear by the planets;” (81: 15).

The last-mentioned are the planets which are partly hidden at rising, racing along their orbits at their zenith, and then moving towards their setting; so the Qur’an swears by them in all three phases. No other creation of the Lord’s is more used to swear by than the heaven, the stars, the sun and the moon. When the Almighty swears by any of His creations, he does that on account of the significance and wonder that object represents, pointing to the Lord’s power. The more remarkable and compelling as a sign, the more a particular creation is used as an object of oath in comparison with other creations. The wording of the oath will also be emphatic in this case, as we can see in the following verses:

﴿فَلَا أُقْسِمُ بِمَوَاقِعِ النُّجُومِ ۖ وَإِنَّهُ لَقَسَمٌ لَّو تَعْلَمُونَ عَظِيمٌ﴾

[الواقعة : ٧٥، ٧٦]

“Nay, I swear by the places of the stars – And lo! that verily is a tremendous oath, if ye knew – ” (56: 75)

The word planets, ‘nujoom’, in the above verses means most likely the stars in the sky, rather than the

verses of the Qur'an, as some claim, because this is the sense that naturally comes to mind when the word is mentioned, and because the word 'nujoom' is never in the Qur'anic style used in reference to the verses of the Qur'an, not even once. So, there is good reason to take the word to refer to the 'location of stars', especially as the word 'nujoom' has been used to refer to planets throughout the Qur'an; and identical oaths are used, when the Qur'an swears by the setting of the star, in the following verse:

﴿وَالنَّجْمِ إِذَا هَوَىٰ﴾ [النجم : ١]

"By the star when it sets," (53: 1).

The exegesis we have chosen is in fact that accepted by the majority of exegesists. Besides, the Lord swears by the Qur'an itself, not by the way it is conveyed to Allah's servants, as may be seen in the following verses, among others:

﴿ص وَالْقُرْآنِ ذِي الذِّكْرِ﴾ [ص : ١]

"Sad. By the renowned Qur'an," (38: 1);

﴿يَس ۝ وَالْقُرْآنِ الْحَكِيمِ﴾ [يس : ١، ٢]

"Ya Sin. By the wise Qur'an," (36: 1-2);

﴿ق وَالْقُرْآنِ الْمَجِيدِ﴾ [ق : ١]

"Qaf. By the glorious Qur'an," (50: 1)

﴿ح م ۝ وَالْكِتَابِ الْمُبِينِ﴾ [الزخرف : ١، ٢]

"Ha Mim! By the Scripture which makes plain," (43: 1-2);

To conclude, the Almighty uses certain creations of His as signs that speak of His Lordship and Oneness.

I swear by the positions of stars

A primitive observer will think that stars are close to us, that if he climbed a mountain he might be able to touch some of them. This was the attitude of Pharaoh of Egypt when he declared, as recounted by the Qur'an:

﴿ يَنْهَمْنُ أَبْنِي لِي صَرْحًا لَعَلِّي أَبْلُغُ الْأَسْبَابَ ۝ أَسْبَابَ السَّمَوَاتِ
فَأَطَّلِعَ إِلَى إِلَهِ مُوسَى... ﴾ [غافر: ٣٦، ٣٧]

“O Haman! Build for me a tower that haply I may reach the roads, – The roads of the heavens, and may look upon the God of Moses,...” (40: 36-27).

The scientific progress, however, has revealed the distances of stars, which were unknown to humans over the ages. The sun, for instance, is 93 million miles from us (150 million km), a distance that light travelling at a speed of 300 km/sec covers in eight minutes. Light covers the distance between the nearest star to earth in four and a quarter years. Some stars are one hundred light years away from us (i.e. light takes a hundred years to cover the distance from that star to the earth), some are one thousand light years away, some are a million years away, some are 340 million years away, and some are many more million years away! Does not this reveal to us new meanings, unknown to previous generations, of the following verses:

﴿ فَلَا أُقْسِمُ بِمَوَاقِعِ النُّجُومِ ۝ وَإِنَّهُ لَقَسَمٌ لَوْ تَعْلَمُونَ عَظِيمٌ ﴾

[الواقعة: ٧٥، ٧٦]

“Nay, I swear by the places of the stars – And lo! that verily is a tremendous oath, if you but knew –” (56: 74-75)

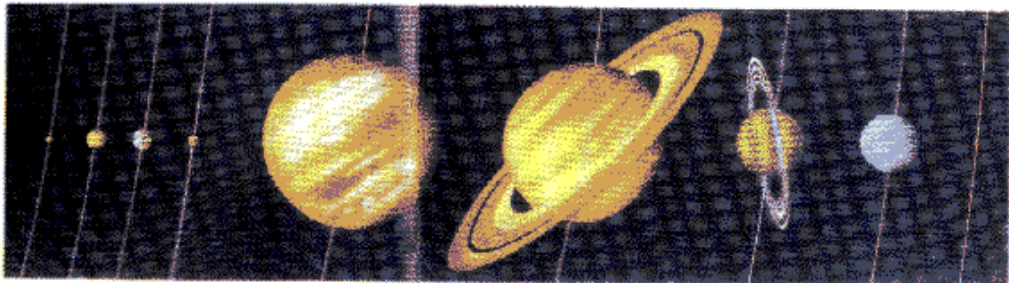
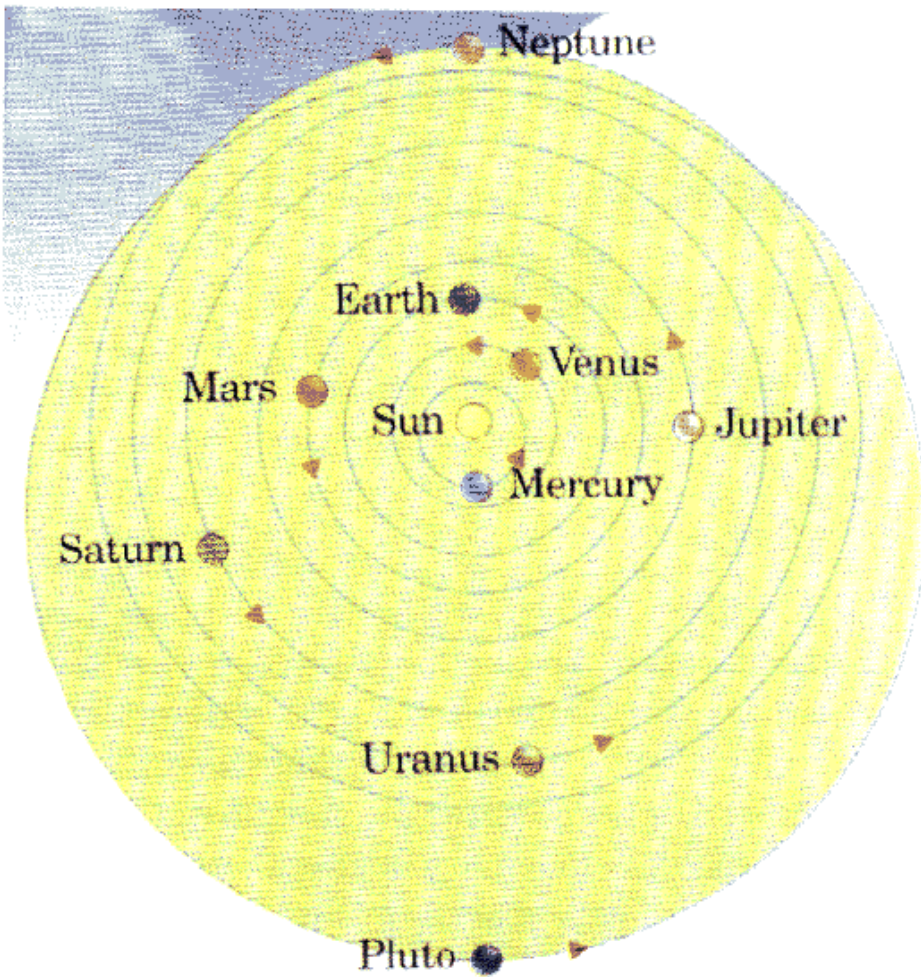


Figure '38"

The Solar System

Our Solar System consists of orbiting planets, their moons, the comets and the meteors, all rotating along elliptical (oval) orbits, all in one direction round the sun, and revolving around their axes in the same direction, from east to west. All planets are dark in themselves, but they reflect the sun's light. The planets, in the order of their closeness to the sun are: Mercury, Venus, the Earth, Mars; then there are some small planetlets; then there are the gaseous planets Jupiter, Saturn, Uranus and Neptune. Lastly, there is the planet Pluto.

The virtue of contemplating the heavens and the earth

The Lord compliments in His Book those who contemplate the creation of the heavens and the earth, while He reviles those who fail to do that. This may be seen, for instance, in the following verse:

﴿ وَجَعَلْنَا السَّمَاءَ سَقْفًا مَحْفُوظًا وَهُمْ عَنْ آيَاتِهَا مُعْرِضُونَ ﴾ [الأنبياء: ٣٢]

“And We have made the sky a roof withheld from them. Yet they turn away from its portents.” (21: 32)

Reflect then on the greatest of roofs, the heaven, and its solidity, strength and cohesiveness, despite its being mere smoke, or water vapour. The heavens are described in the Qur'an in the following verses:

﴿ وَبَنَيْنَا فَوْقَكُمْ سَبْعًا شَدِيدًا ﴾ [النبا: ١٢]

“And We have built above you seven strong heavens.” (78: 12)

﴿أَأَنْتُمْ أَشَدُّ خَلْقًا أَمْ أَلَسَّمَا بَنَيْنَاهَا ۚ رَفَعَ سَمَكَهَا فَسَوَّيْنَاهَا﴾ [النازعات: ٢٧، ٢٨]

“Are you the harder to create, or is the heaven that he built?” (79: 27)

﴿وَجَعَلْنَا السَّمَاءَ سَقْفًا مَحْفُوظًا﴾ [الأنبياء: ٣٢]

“And We have made the sky a roof withheld from them.” (21: 32)

Look, then, at that sublime structure, strong and overarching, raised by the Lord to such a lofty place, and adorned by the most spectacular adornment, and abounding with so many wonders and signs. All this was first begun from water vapour which rose like smoke. This was well expressed in a couplet:

Glory be to Him who is not duly appreciated by His creation, Who, established upon the throne, is Single and One.

He did lay down for His creatures various landmarks, and erected for them compelling signs, and made clear for them the most evident of pointers, so that those who are destined to perish should perish by clear proof of His sovereignty, and those who survive should survive by clear evidence; for Allah is the Hearer, the Knower. Look, then, afresh at the sky. See its planets in their orbiting, rising and setting; its sun and moon, and diverse rising points and setting points, their tireless unceasing progress, without slowing down their movement or deflecting from their orbits. They run along their predestined orbits exactly as was designed for them, until the day their Maker wills to call them back. Notice the great number of stars and planets, their dimensions and their colours; some reddish, some whitish, and some greyish.

Look now at the progress of the sun in its orbit during a year, and its rising and setting every day along a

route that its Lord determined for it, so that it will never exceed it or fall short of it. Had it not been for its rising and setting we would not have known day from night, nor would it be possible for us to know time. There would be permanent darkness over the world, or there would be eternal light; it would not be possible to assign a time for sleep and rest and another time for work. See how the Hearer, the Omniscient determined for the sun two long journeys, an ascending journey until it reaches its zenith, and a descending one until it reaches its lowest trough; and its orbit is a little different every trip, until it has gone a whole cycle. This movement results, by the will of the Lord, the Able, in the succession of seasons: summer, winter, autumn and spring. Once its route descends from the zenith of the sky the air cools and winter arrives; then, when it takes the zenith of the sky the heat blazes; when, on the other hand, it is between the two extremes, the weather is moderate. Much of the welfare of men, animals and plants emanates from the succession of those four seasons; they are the basis for the diversity of foods, the shapes and colours of plants, and the foods, meat and benefits of animals. And that does not exhaust their functions.

Think of the moon and its amazing wonders: how Allah exhibits it first as a narrow thread, then its light increases gradually, and it waxes night by night, until it waxes into a full moon, when it reaches its maximum phase; then it begins to decrease in size until it reaches its first phase. In all this, there are diverse benefits for humans in their living, worship and rituals; it is the basis for calculating months and years. Mankind has used it to organize things, besides many other benefits that no one but Allah can keep count of.

In general, no star or planet is created by the Lord Almighty without many good reasons: its particular

dimensions, colour and location in the heavens, its proximity or remoteness from the zenith of the sky, its proximity or remoteness to the star or planet next to it are all determined for precise purposes. To have a sense of that in general, compare the facts of the sky to the organs of your body: the diversity, the difference in structure of the adjacent organs, and the distance of the far ones; their shapes, dimensions, and variety of benefits and functions, contrasting all that with the enormity of the sky and hugeness of its stars and planets and signs! Astronomers are agreed that the sun is more than a hundred and sixty times bigger than the earth, that many of the stars that we see are at least as big as the earth, which is enough to imagine their remoteness and height.

There is in this connection a tradition reported by Al-Tirmidhee on the authority of Abu Hurairah¹,

«أَنَّ بَيْنَ الْأَرْضِ وَالسَّمَاءِ مَسِيرَةَ خَمْسِمِائَةِ عَامٍ وَبَيْنَ كُلِّ سَمَاءَيْنِ كَذَلِكَ»

“That the distance between the earth and the sky takes five hundred years to traverse, and that there is the same distance between each two skies”

You see a certain star as stationary, while from its first appearance to its full appearance it has run along its orbit a hundred times or more than the running of the earth, in that mere moment. That is because if the star were a hundred times bigger than the earth, for instance, and it traversed in a moment a certain distance, it had run in that moment a hundred times the diameter of the earth, and that is so in every moment all the time. All this happens while man is unmindful of the wondrous events

¹ Reported by Al-Tirmidhee (3298), Ahmad (2/370) and Al-Baihaqee in Al-Asmaa wa Al-Sifat, pp. 399-400; rated as ‘weak’ by Al-Albanee in his evaluation of the traditions of ‘Al-Sunnah’ of Ibn Abee Aasem (1/254).

that are taking place. It has been said that if you utter the words 'no, yes' the sun has traversed along its route in the time that elapsed between the two words a distance of five hundred years of man's movement. The Almighty holds the heavens, with their stupendous size and the size of the bodies they contain, in their places without pegs to hold them from above or supports from below.²

One may cite in support of this the following verses from the Qur'an:

﴿ خَلَقَ السَّمَوَاتِ بِغَيْرِ عَمَدٍ تَرَوْنَهَا وَالْأَرْضِ رَواسِيَ أَنْ تَمِيدَ بِكُمْ وَبَثَّ فِيهَا مِنْ كُلِّ دَابَّةٍ وَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً فَأَنْبَتْنَا فِيهَا مِنْ كُلِّ زَوْجٍ كَرِيمٍ ۝ هَذَا خَلْقُ اللَّهِ فَأَرُونِي مَاذَا خَلَقَ الَّذِينَ مِنْ دُونِهِ ۚ بَلِ الظَّالِمُونَ فِي ضَلَالٍ مُبِينٍ ﴾ [لقمان: ١٠، ١١]

"He has created the heavens without supports that you can see, and has cast into the earth firm hills, so that it quakes not with you; and He has dispersed therein all kinds of beasts. And We send down water from the sky and We cause plants of every goodly kind to grow therein. This is the Creation of Allah. Now show me that which those you worship beside Him have created. Nay, but the wrongdoers are in error manifest!" (31: 10-11)

²The Almighty says in the Qur'an:

﴿ اللَّهُ الَّذِي رَفَعَ السَّمَوَاتِ بِغَيْرِ عَمَدٍ تَرَوْنَهَا . . . ﴾ [الرعد: ٢]

"Allah it is Who raised the heavens without visible supports, then mounted the Throne." (12: 2) In this connection modern science says that every star or planet has a mass-centre inside it, that although stars and planets are in continuous movement, the distances between their mass-centres are invariable, which indicates that there is in every case an invisible gravity column that holds them so as to preserve the mass-centres of the sky's bodies at fixed distances from each other, despite the movements of all those bodies. This must remind us of the expression in the above verse:

﴿ بِغَيْرِ عَمَدٍ تَرَوْنَهَا ﴾ "without visible supports."

Two kinds of looking

In the above and similar verses looking has two senses: there is "looking" with the eye, the external organ, by which one may see for instance the blue of the sky, its stars, its height and vastness. In such vision man is equal to other species, and so it is not the vision that man is exhorted to practice. In the other sense, "looking" is to go beyond the first external vision to see with the mind's eye, so that the heaven's gates are opened to the observer; he wanders among its territories and lands, and associates with its angels. It is then that gates are opened for him, one by one, until his mind's journey carries him to the Throne of the Compassionate, where he envisions its huge and great size, its majesty, glory and elevation; he envisions the seven heavens, and the seven earths, whose mass is, compared to the Throne's, like a ring to a desert; he envisions the angels circumambulating the Throne, with their hymns of praise and glorification of the Lord rising in chorus. He sees with the mind's eye the commandments of the Lord descend from above, managing the worlds and directing the Almighty's soldiers, whose swarms no one can count but their Lord and King. He realises how directives descend to determine the reviving of multitudes of creatures and the perishing of other multitudes; the honouring of some and the suffering of others; the enthroning of someone and the dethroning of another; the transporting of a blessing from one place to another place; and the fulfilling of all sorts of needs, in all their variety and abundance: the rescue of a bankrupt, the enrichment of an indigent, the healing of an invalid, the saving of someone stricken with disaster; the forgiveness of a sin, the resolution of a crisis, the supporting of a persecuted one, the guiding of a lost one, the educating of an ignorant one, the reclamation of an escaped slave, the safety of a terrified one, the succour of a succour seeker;

the empowering of a feeble person, the support of a distressed one, the help of someone who is handicapped, the revenge on an oppressor, the stopping of aggression; all decrees towards the establishing of justice, sympathy, wisdom and mercy, covering all corners of the world. No call distracts Him from another call, the great succession of pleas and petitions do not confuse Him, no matter how numerous, diverse, or simultaneous. He does not complain at the insistence of insistent, and His bountiful bestowings do not decrease the riches of His treasure by a fraction, for there is no god but He, the Proud, the Wise.

Conceiving this, the believing heart is prostrated in the presence of the Compassionate, bending in awe of Him, subservient to His might; bound to His hegemony; it will prostrate in front of the King, the True, the Clear, a prostration that is never interrupted until the day of recompence. All this the heart does while it is still in its place, at home, and not leaving its residence which is a most marvelous wonder of the Lord's and an overwhelming occurrence. Blessed be the journey, a most rewarding trip, lifting the human and blessing his life and rewarding him amply and ensuring good consequences. It is the trip that revives souls and wins the key to happiness; fills the minds and hearts with peace, not borne with hardship like other trips.

The wonder of variation in the stars' movements

Reflect now on the variation in the movement of stars and planets, and all the amazing wonder implied in this. See how some stars never travel but in company with others, never striking a lonely path; it is always a collective progress; others rush alone, free from any ties with companion or partner. Even if they by coincidence happen to be in company with other travellers, they join them for

a night and then again separate themselves the next night – they seem to be intimate pals for one night, but then separate like utter strangers. Each star has two absolutely and vastly different movements, a general movement that the whole constellation follows, and a special movement that the single star follows along its orbit. This has been likened to an ant that moves left round a grind-stone that turns right: the ant is in this case moving in two different directions, one on its own, and one forced on it, being bound to the grind-stone that pulls it in a direction other than its own. Like the ant, a star is proceeding from interval to interval in one direction, while the whole field of its progress is proceeding in a different direction.

So ask the heretics, the deniers, what nature is that which determined that? What astrological power dictated it? Why do not all the stars follow identical routes, progressing according to one system, one plan, one movement and one route? Is it not the work of Him whose wisdom overwhelms minds; whose artifices and creations bear witness to His being the Creator, the Originator, the Shaper, like to Whom there is no one else; He Who did everything with care, who excelled in every thing He crafted; the Omniscient, the Wise Who creates then disposes; Who measures, then guides. All this is one of His signs that point to Him, a wondrous making of His that is a plain message to the thinking minds which will guide those who travel towards Him; a sign that all that is in the universe is a humble creation, firmly controlled and managed. It is as the Almighty says in the Qur'an:

﴿إِنَّ رَبَّكُمُ اللَّهُ الَّذِي خَلَقَ السَّمَوَاتِ وَالْأَرْضَ فِي سِتَّةِ أَيَّامٍ ثُمَّ اسْتَوَىٰ عَلَى الْعَرْشِ يُغْشَىٰ اللَّيْلَ النَّهَارَ يَطْلُبُهُ حَثِيثًا وَالشَّمْسَ وَالْقَمَرَ وَالنُّجُومَ مُسْحَرَاتٍ بِأَمْرِهِ ۗ أَلَا لَهُ الْخَلْقُ وَالْأَمْرُ ۗ تَبَارَكَ اللَّهُ رَبُّ الْعَالَمِينَ ﴿۵۴﴾ [الأعراف : ٥٤]

“Lo! your Lord is Allah Who created the heavens and the earth in six Days, then mounted He the Throne. He covers the night with the day, which is in haste to follow it, and has made the sun and the moon and the stars subservient by His command. His verily is all creation and commandment. Blessed be Allah, the Lord of the Worlds!” (7: 54)

As to the inquiry about the secret in some stars following invariable routes while others changing their orbits, the answer is this: If they all followed invariable routes, they would cease to reveal the evidence and wisdom that emerge from their changing of routes and the tracks they follow in their orbits. On the other hand, if they all changed their routes, they would cease to have fixed routes that enable us to recognize them, nor would they have systems that humans can use as a frame of reference. The fact is that the movement of the route-changing stars is determined by reference to the ones with fixed routes, in the same way as the movement of walking people are judged by reference to the immobile objects they pass by. If they all followed an identical plan there would be confusion in recognizing them, and the wisdom and benefits that are realized by their variety would cease to be evident; the non-believer would have some justification to cling to in his disbelief – he would say: If the designer of those bodies had volition, they would not have been following the same movement, the same system, and the same timing. As it is, the system and method they follow is a most evident proof of the existence of the Creator, His power, will, knowledge, wisdom and oneness.

The stars

Consider also the wisdom of the Almighty Lord in His creation of the stars, in their abundance and their amazing

quality, that they are the adornment of the sky, the guiding lights for people on land and sea; we can see their light and luminosity despite the great distance. Without them, we would not have anything to direct us and guide us, and we would not be able to do calculations. Consider, then, their compliance with the commandments of their Lord, the Almighty, as they follow the same system, which He judged that they should not deviate from. He set the constellations, the orbits; the immobile and the mobile stars; the large, the small, the medium, the whitish pink, the whitish red; some hiding from the observation of the spectator. Those with orbits are divided into two groups, high and low, and all are decreed to follow the same system. The sun, the moon and the mobile stars are placed in their right places in the whole group; one, the moon, completing its cycle in one month; some completing theirs in one year, and some in several years; all for deep judgment. He ordained that all those events should be attached to events on the earth, so that people can predict the events from observing the stars. By observing the rising of the Pleiades, for instance, they know what events will take place concurrently with that rising, and the same with its setting. So it is with other stars and groups and positions. Reflect, too, how the Lord deemed that the Ursa Minor and Ursa Major and their adjacent stars are a peculiar phenomenon, so that they do not set because of their proximity to the centre; a phenomenon that bears reflection to delve into the divine wisdom it implies – those constellations are like landmarks that people use to find their way in untrodden ways on land and sea; they look at that group, at the Capricorn and the two bright stars of Ursa Minor at all times, whenever they like, and refer to them for guidance.

The light of stars

Consider also the light of the moon and stars in the dark of night, and the wisdom they imply. The Almighty willed, in His judgment, to create dark for the resting of animals and for the cooling of the air that touches animals and plants, to counterbalance the heat of the sun, thus enabling plants and animals to survive. As it is so, the Lord willed to moderate the darkness of night with a little light, so that night is not stark darkness, an absolute black night without any kind of illumination; for in that case animals would not be able to do any movement or activity. An animal often needs to do some activity, like moving or walking, by night rather than by day, because of the latter's shortness, or excessive heat, or, in the case of many animals, because of fear. Therefore, He destined that there should be during the night such light from the moon and stars that allows for a lot of things to be performed, like travelling and tilling, and other occupations of land tillers and planters. Moonlight by night has been supplied to assist the animal to carry out those actions. On the other hand, the light of night is uncontinuous and not as bright as the day's is, lest the night should be like the day, which would eliminate the wisdom of the difference between them destined by the Mighty, the Knowing.

Consider, then, the deep judgment and amazing calculation that ordained what assisted the animal to deal with the hardship of darkness with help from the domain of light. The dark domain, the night, has not been left to reign absolutely, but it has been softened with some light of mercy and bounty from the Lord. So glory be to Him who took good care of everything He made and perfected everything He created.

The sun

The sun is sometimes called the 'atomic furnace'

1. It is a dazzling lamp
2. It provides man with heat, light and radioactive energy.
3. It is one million and three hundred thousand times the size of the earth.
4. It is about 150 million kilometres away from us.
5. Its light reaches us in approximately 8 minutes and forty seconds.
6. Its gravity is 28 times the gravity of the earth.
7. The sun revolves around its axis in 25 days.
8. It is one star of 100,000 million stars in our galaxy. Its size is nothing compared with that of some of the stars called 'supergiants'.
9. It is 3200 light years far from the centre of our galaxy.
10. The temperature at the surface of the sun is 5500 degrees centigrade, and the temperature increases toward the nucleus until it reaches 10 million degrees centigrade.
11. Hydrogen is the main element of which the sun consists.
12. Due to excessive temperature, the sun loses about 4 tons of its mass per second, as a result of the chemo-thermal reactions. In fact, this is the source of the energy we draw upon and benefit from.
13. The sun is not less than 5000 million years old, and the galaxy is much older than that.

So glory be to Him who swore by the sun when He said:

﴿وَالشَّمْسِ وَضُحَاهَا﴾ [الشمس: ١]

"By the sun and his brightness." (91: 1)



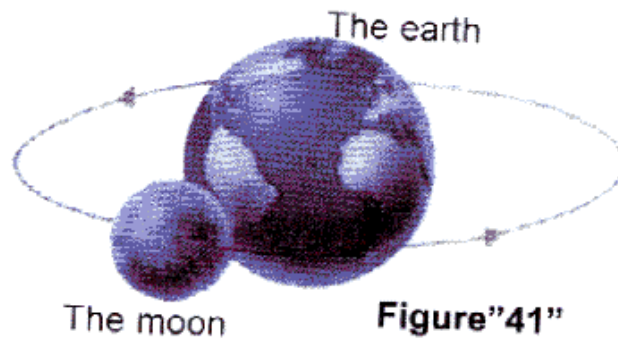
Figure "40"

Mercury

The smallest of the orbiting planets, Mercury is the closest to the sun. The temperature on its side facing the sun rises to 400 degrees centigrade, while the temperature on the dark side is 150 degrees below zero. In view of the excessive heat on its surface, and the lack of oxygen in its atmosphere, scientists exclude the possibility of life of any kind on it. The diameter of Mercury is 4088 kilometres; it revolves around the sun once in 88 days. Because of the sun's gravity, its day is 176 of the days of earth.

The earth

An observer of the earth from space would see it as blue and white. The blue is the colour of water on earth, which covers an area of 70 percent of the earth's surface. The white colour reflects the water vapour collected in the form of clouds. The earth's diameter is 12760 kilometres. It rotates around its axis (counterclockwise) once in 23 hours and 56 minutes, which is the cause of the day and night.



Venus

88 % the size of earth, it orbits the sun at a speed of 35 km/sec; it is 108 million kilometres away from the sun. Clouds of carbon dioxide engulf its atmosphere; its temperature is approximately 480 degrees centigrade. It rotates on its axis in 243 days.

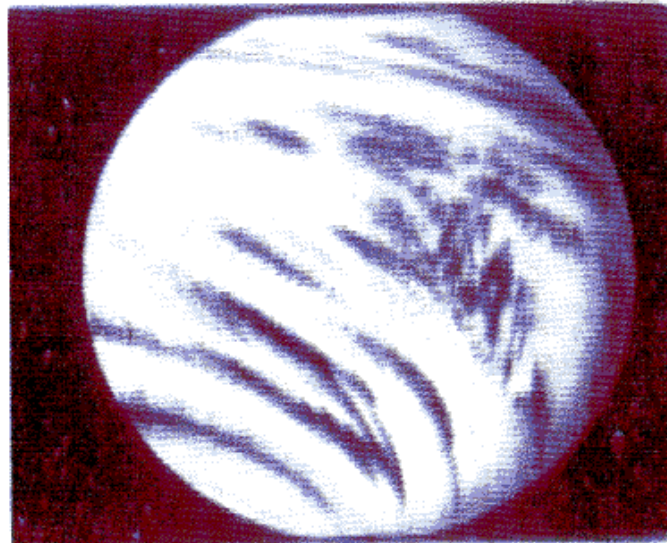


Figure "42"

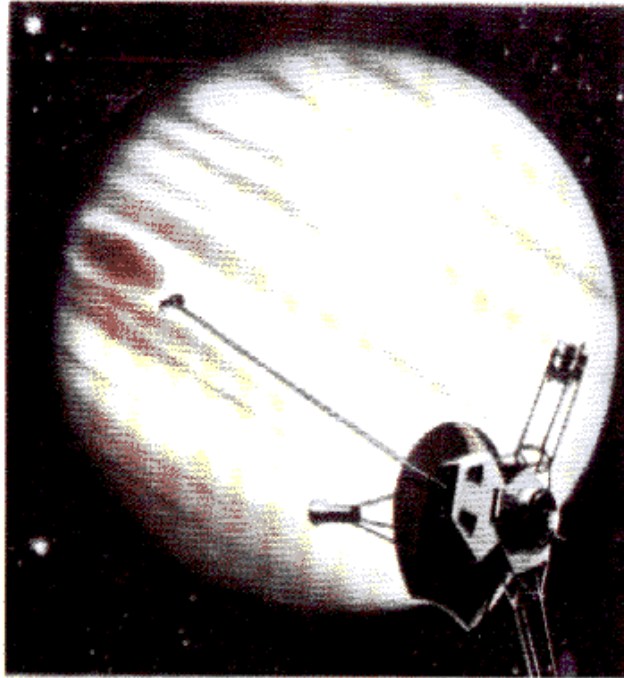


Figure "43"

Jupiter

- * It has four moons; it is 778 million km away from the sun.
- * Its diameter at the equator is 142,800 km.
- * It revolves around the sun in 11.86 years.
- * It rotates on its axis in 9 hours, 50 minutes and 30 seconds.
- * It is composed of hydrogen and helium.
- * Its size is 13 times that of the earth.
- * Its equatorial speed is 13 km/sec.



Figure "44"

Saturn

Second of the planets in terms of volume, its most remarkable feature is the rings around it, like a solid girdle, which endow it with special charm. Space voyages have asserted that those rings are in the hundreds, and that they consist of millions of bits of water ice. Its diameter is around 119, 600 km. It rotates on its axis in 10 hours and 14 minutes, and orbits the sun in 29 years and a half.

It consists of gas; therefore it is very light; it is so light that it would float on water.

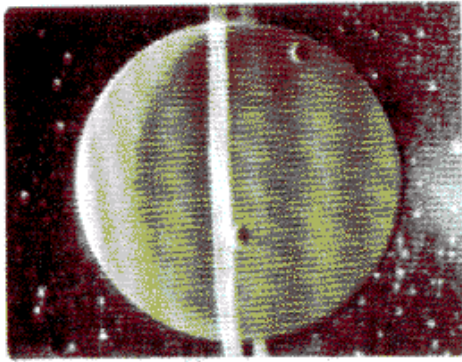


Figure "45"

Neptune

Neptune and Uranus are similar planets: both are greenish coloured, have ice mountains on them, and have similar sizes. Neptune, however, rotates around itself once in 16 hours, and around the sun once in 165 years!

Uranus

There is a thick layer of clouds that engulf Uranus; its atmosphere consists of rings of hydrogen and methane. Its diameter is approximately 51800 kilometres; it rotates on its axis in 10 hours and 48 minutes; it orbits the sun in 84 years. Since its axis is very tilted, each of its poles does not face the sun for 42 years, the longest winter in the solar system.

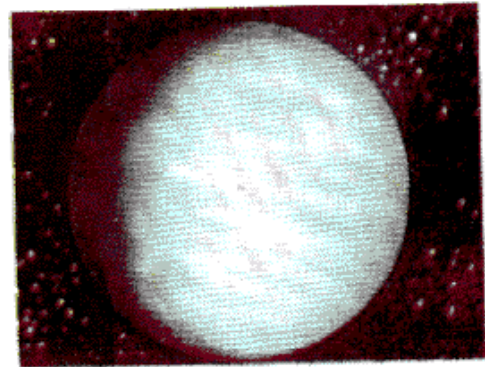


Figure "46"

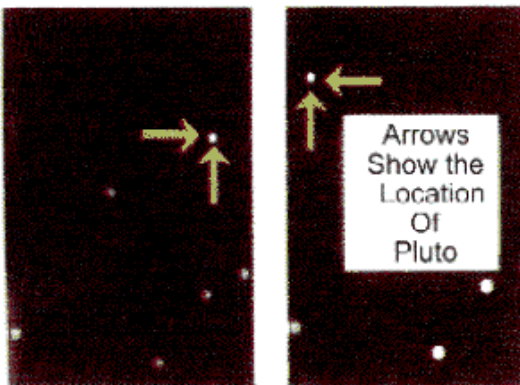


Figure "47"

Pluto

The farthest planet from the sun, Pluto is also the smallest, with a diameter of only 3000 km. In view of its great distance, scientists do not have exact information as to its mass, density and volume.

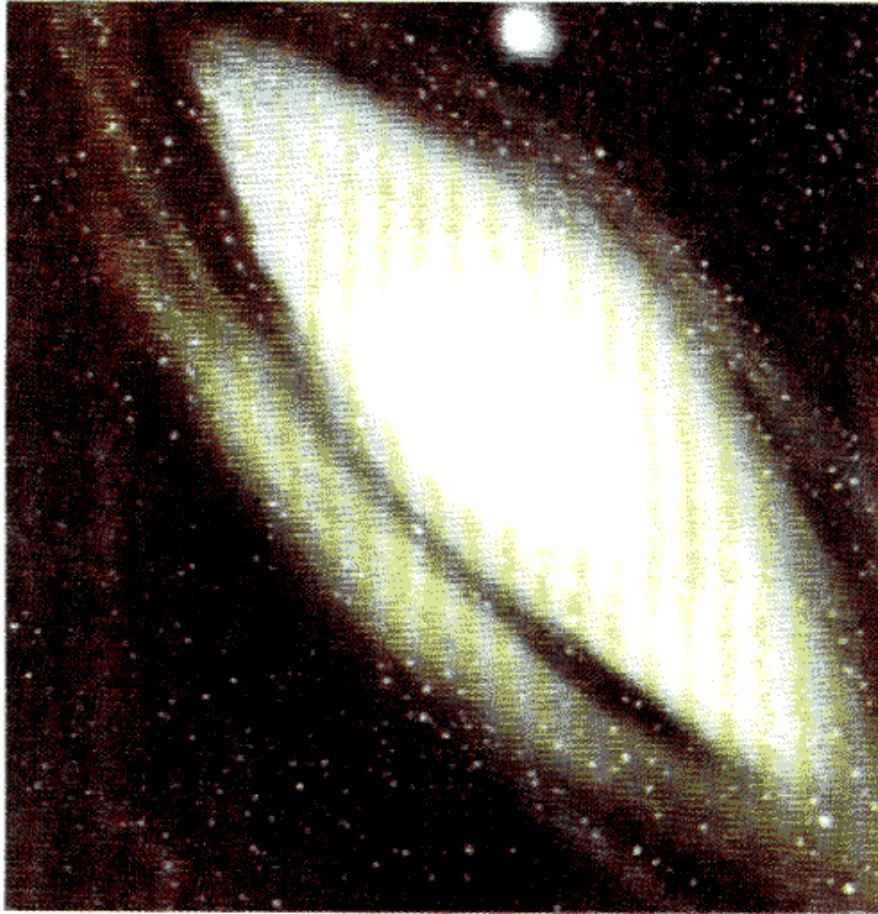


Figure "48"

The above picture shows the Andromeda Galaxy, the object farthest from the earth but still visible with the naked eye. It resembles a faint-glowing smoke cloud. It was supposed to be a nebula, a cloud of gases and dust, until the astronomer Edwin Hubble measured its distance in 1923. It is estimated to be a million light years from the earth. It resembles our own galaxy, the Milky Way, and has long spiral arms containing billions of stars.

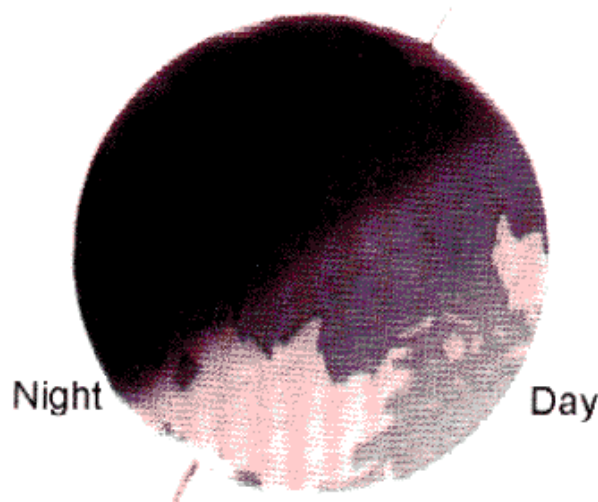


Figure "49"

The earth's tilt

The earth is tilted by an angle of 23 degrees, which is so for good reasons. Had the earth not been oblique, the two poles would have been in constant twilight, the water vapour from oceans would be moving northward and southward, causing on its way the formation of continents of ice, and may be deserts between the equator and the ice. Ice rivers would, in this case, form and pour forth along valleys to gather in salt-covered oceans, forming temporary salinas. The huge mass of ice would weigh down the poles so heavily that it would cause bulging or eruption at the equator; or at least a different equator would have formed. Besides, the drop in the level of ocean would expose great areas of land, diminish the amount of rainfall all over the world, leading to devastating consequences.

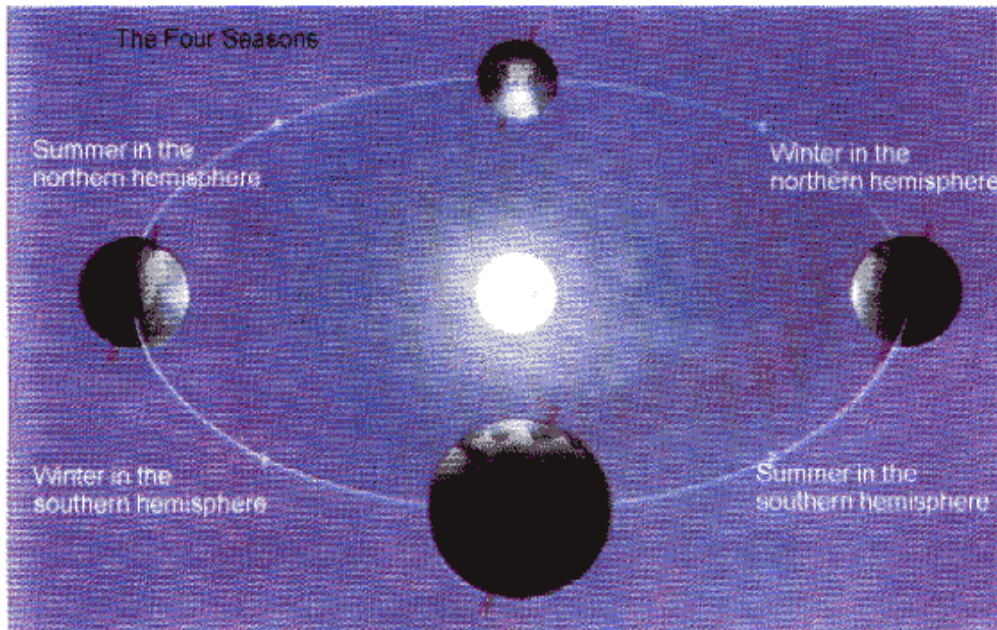


Figure "50"

The four seasons

Consider, then, the sun's movement upwards and downwards relative to the earth, a movement that results in the changing of times and seasons, which realizes various benefits and functions. If it were just one season all the time all the benefits that accrue from the other seasons would be missed – if it were invariably summer, then the benefits of winter would be missed; and if it were winter, the benefits of summer would be missed. And so it would be if it were autumn all the time or spring all the time.

In winter, heat is stored in cavities, the depths of the earth and the mountains, and this results in the sprouting of the fruitful plants and other plants. The surface is

cooled, and the air is humid, which results in the formation of clouds, rain, snow and hail, all essential for the living earth and its inhabitants; the animals' bodies are strengthened and empowered, nature's forces are enhanced and bodies recuperate after their sapping and debilitation in the summer heat.

In spring new life sprouts, and the seeds of the winter bud and blossom; new flowers sprout, trees bloom with blossoms, and animals search for chances of mating.

In summer the air is quite warm, often scorching, so fruits ripen, bodies shed their waste and the humours that had gathered during the winter; cold diminishes and withdraws to cavities, cooling springs and wells; the stomach is unable to digest heavy food that it used to digest during the winter, which it was able to digest with the heat preserved in the bellies; while in summer that heat has come out to the surface of the body and the cold has been absorbed and sunk inside.

When autumn comes, temperature moderates, air is purified and cooled, the seething heat is softened; autumn is thus destined by Allah in His wisdom to be midway between the extreme heat of summer and the biting cold of winter; in this way an animal does not have to shift all at once from extreme heat to extreme cold, a shift which would harm it and cause it a lot of suffering, while it is not so when the change is gradual: the animal adjusts to new stages of change gradually, and is more primed to receive a bigger amount of change until the extreme cold has come, with the animal well adapted to it and resigned to it, which is a compelling wisdom and a glowing sign of the Lord's mercy. The same is true of the spring which is midway between the winter and the summer; in it the animal adapts to the changes from cold to heat in small increments that come successively and according to a

careful design. Glorified be Allah, Lord of the Worlds, the best of creators.

Control of sunrise

Reflect on the wisdom implied in the rising of the sun over the world, how that is designed by the Proud, the Knowing, may His Name be glorified. If it were, after reaching a certain spot in the sky, to stay there, its rays would not reach so many regions, because the shade of the globe would block its reaching the other side; it would be an everlasting night in those regions, and it would be an everlasting daylight in regions exposed to the sun; inhabitants in both parts would have their life completely disrupted. But the Lord, in His great providence and mercy, has willed that the sun should rise to start the day in the east, shining on the opposite western horizon; then it should go on progressing along its curving route, shining on region after region, until it reaches the west, where it should shine over regions that were inaccessible at the start of the day. In this way, people in those regions will have the alternation of day and night, which is essential for them to undertake their chores.

The light of the sun and the light of the moon

Regard the sun and the moon, what they possess of light and illumination; consider how the Lord willed that they should have stages and phases, shifting from one to one, something that realizes the progressing of the year to its completion, and realizes for the creation advantages that they cannot do without for their survival. It is by this that times are calculated; the times for debts, the duration of leases, transactions, accounts and the like. If it were not for the shifting of the sun and moon from phase to phase, all that would not be possible. That is what the Almighty calls attention to in various places in His Book, such as:

﴿ هُوَ الَّذِي جَعَلَ الشَّمْسَ ضِيَاءً وَالْقَمَرَ نُورًا وَقَدَرَهُ مَنَازِلَ لِتَعْلَمُوا عَدَدَ السِّنِينَ وَالْحِسَابَ مَا خَلَقَ اللَّهُ ذَلِكَ إِلَّا بِالْحَقِّ يُفَصِّلُ الْآيَاتِ لِقَوْمٍ يَعْلَمُونَ ﴾ [يونس : ٥]

“He it is Who appointed the sun a splendour and the moon a light, and measured for her stages, that you might know the number of the years, and the reckoning. Allah created not all that save in truth. He details the revelations for people who have knowledge.” (10: 5)

﴿ وَجَعَلْنَا اللَّيْلَ وَالنَّهَارَ آيَاتٍ فَمَحَوْنَا آيَةَ اللَّيْلِ وَجَعَلْنَا آيَةَ النَّهَارِ مُبْصِرَةً لِّتَبْتَغُوا فَضْلًا مِّن رَّبِّكُمْ وَلِتَعْلَمُوا عَدَدَ السِّنِينَ وَالْحِسَابَ وَكُلَّ شَيْءٍ فَصَّلْنَاهُ تَفْصِيلًا ﴾

[الإسراء : ١٢]

“And we appoint the night and the day two portents. Then We make dark the portent of the night, and We make the portent of the day sight-giving, that you may seek bounty from your Lord, and that you may know the computation of the years, and the reckoning; and everything have We expounded with a clear expounding.” (17: 12)

The rising and setting of the sun and the moon

Reflect on the rising and setting of the sun and the moon for establishing the alternation of the day and the night. Without their rising, life would not be possible – how could people go about earning their living, looking after their interests, when the world is in darkness? How could they enjoy life without light? Consider also the wisdom implied in their setting: without that people would not be able to rest and settle with all the pressing need for sleep and for the resting of the senses, for the activation of internal forces that take control during sleep to facilitate the digestion of food and the distribution of nutrients to

organs. Without the setting of the sun, too, the earth would get too hot because of the continuity of the heat of the sun and its rays, until every living animal or plant is scorched. As it is, the sun rises the way a lantern is lighted for the residents of a house to go about their work, then it is put out, so that the residents settle down and relax. The light of day and the dark of night, with their alternating heat of the former and the cool of the latter, are coordinated and integrated, in a way that they may realize the interests of the world. These facts have been indicated in the Qur'an in the following verses:

﴿ قُلْ أَرَأَيْتُمْ إِنْ جَعَلَ اللَّهُ عَلَيْكُمُ اللَّيْلَ سَرْمَدًا إِلَى يَوْمِ الْقِيَامَةِ مَنْ إِلَهُ غَيْرُ اللَّهِ يَأْتِيكُم بِضِيَاءٍ أَفَلَا تَسْمَعُونَ ۝ قُلْ أَرَأَيْتُمْ إِنْ جَعَلَ اللَّهُ عَلَيْكُمُ النَّهَارَ سَرْمَدًا إِلَى يَوْمِ الْقِيَامَةِ مَنْ إِلَهُ غَيْرُ اللَّهِ يَأْتِيكُم بِاللَّيْلِ تَسْكُنُونَ فِيهِ أَفَلَا تُبْصِرُونَ ﴾

[القصص : ٧١، ٧٢]

“Say: have you thought, if Allah made night everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you light? Will you not then hear?

Say: Have you thought, if Allah made day everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you night wherein you rest? Will you not then see?” (28: 71-72)

In the above verses, the Almighty mentions vision in association with the day, because it is the time for vision, as seeing is dominant and operative during the day; while He mentions hearing in association with the night, as hearing is dominant at night, when animals can hear what they cannot hear by day, night being a time of quiet and inactivity, so that hearing is in control and seeing is secondary, while by day it is the other way round: vision is

in control and hearing is secondary. Therefore, when the Qur'anic verse says: ﴿أَفَلَا تَسْمَعُونَ﴾

'Will you not then hear?' it is referring to

﴿قُلْ أَرَأَيْتُمْ إِنْ جَعَلَ اللَّهُ عَلَيْكُمُ اللَّيْلَ سَرْمَدًا إِلَى يَوْمِ الْقِيَامَةِ مَنْ إِلَهُ غَيْرُ اللَّهِ يَأْتِيكُمْ بِضِيَاءٍ﴾ [القصص : ٧١]

'Say: have you thought, if Allah made night everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you light?'; and when it says: ﴿أَفَلَا تَبْصُرُونَ﴾

'Will you not then see?', it is referring to

﴿قُلْ أَرَأَيْتُمْ إِنْ جَعَلَ اللَّهُ عَلَيْكُمُ النَّهَارَ سَرْمَدًا إِلَى يَوْمِ الْقِيَامَةِ﴾

'Say: Have you thought, if Allah made day everlasting for you till the Day of Resurrection, who is a God beside Allah who could bring you night wherein you rest?'

In another chapter the Almighty says:

﴿نَبَارِكُ الَّذِي جَعَلَ فِي السَّمَاءِ بُرُوجًا وَجَعَلَ فِيهَا سِرَاجًا وَقَمَرًا مُنِيرًا ۝ وَهُوَ الَّذِي جَعَلَ اللَّيْلَ وَالنَّهَارَ خِلْفَةً لِمَنْ أَرَادَ أَنْ يَذَّكَّرَ أَوْ أَرَادَ شُكُورًا﴾

[الفرقان : ٦١ ، ٦٢]

"Blessed be He Who has placed in the heaven mansions of the stars, and has placed therein a great lamp and a moon giving light! And He it is Who has appointed night and day in succession, for him who desires to remember, or desires thankfulness." (25: 61- 62)

The Almighty mentions the day and night as alternatives, each alternating with the other, never coinciding with the other; for if they do coincide, the benefit of having them alternating and different would be missed. This is in fact the reason for having the day and

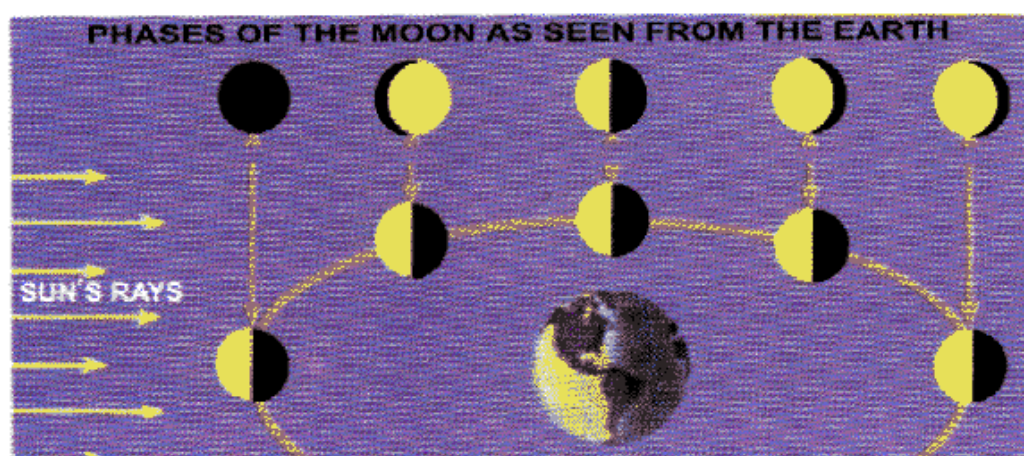


Figure "51"

The moon is a celestial body that orbits the earth; it has a diameter of 3,475 km. It revolves around the earth from west to east in 29 days, 44 minutes and two seconds. The sun shines on the side of the moon that faces it. The moon is not an axis-rotating planet, and that is the reason we see the same side of it all the time.

the night as different times, and having them alternating with each other, never intersecting or going parallel with the other: each invades the other, pushing it back persistently, until it replaces it altogether; and then the other follows the other, chasing it persistently, until it defeats it and pushes it back, dethroning it from its dominance; then the same process goes on like this, each chasing the other, and never catching up with it.

The day and the night

Two of the signs of the Almighty are the day and night; they are among the most wondrous and magnificent signs among his handicrafts. That is why He keeps citing them time and again in the Qur'an, as in the following instances:

﴿ وَمِنْ آيَاتِهِ اللَّيْلُ وَالنَّهَارُ ﴾ [فصلت: ٣٧]

“And of his portents are the night and the day” (41: 37)

﴿ وَهُوَ الَّذِي جَعَلَ لَكُمُ اللَّيْلَ لِيَأْسَوا وَالنَّوْمَ سُبَاتًا وَجَعَلَ النَّهَارَ نُشُورًا ﴾

[الفرقان: ٤٧]

“And He it is Who makes night a covering for you, and sleep a repose, and makes day a resurrection.” (25: 47)

﴿ وَهُوَ الَّذِي خَلَقَ اللَّيْلَ وَالنَّهَارَ وَالشَّمْسَ وَالْقَمَرَ كُلٌّ فِي فَلَكٍ يَسْبَحُونَ ﴾ [الأنبياء: ٣٣]

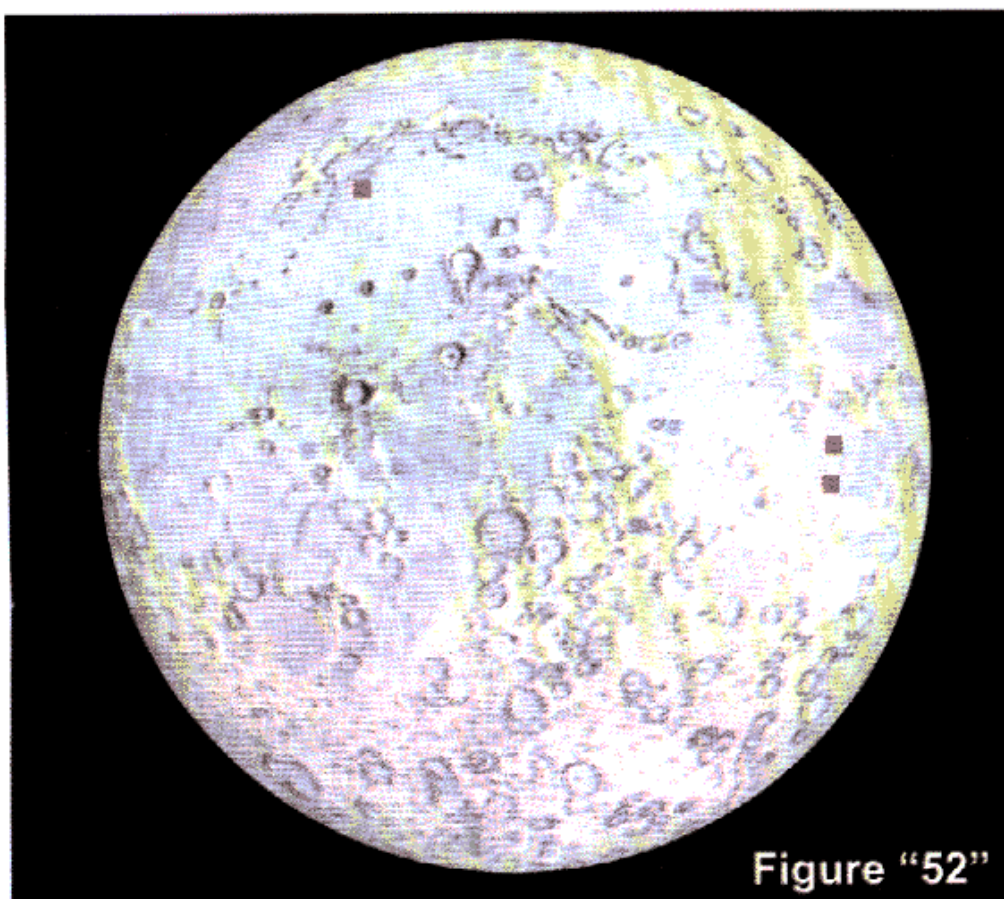
“And He it is Who created the night and day, and the sun and the moon. They float, each in an orbit.” (21: 33)

﴿ اللَّهُ الَّذِي جَعَلَ لَكُمُ اللَّيْلَ لِتَسْكُنُوا فِيهِ وَالنَّهَارَ مُبْصِرًا ﴾ [غافر: ٦١]

“Allah it is Who has appointed for you day and night that you may rest therein, and day for seeing.” (40: 61)

This is stated in many places in the Qur'an. Think, then, of those two wonders and all the implications and indications pointing to the Lordship of Allah, His mercy and wisdom, how He made the night as a repose and a mantle; covering the world so that movements slow down, and animals take shelter at their habitations, birds at their nests; creatures relax and rest from all their toil and endeavour; and then, once creatures have rested and slept, and are anxious to seek their food and interests, the Breaker of Dawn, the Almighty, ushers the day, leading its

troops, with the harbinger of dawn heralding its progress; so it defeats the dark, shattering it to shreds, sweeping it from the world; and lo! everyone can see: animals spread, milling around for forage and seeking their interests; birds leave their nests. It is a revival and recreation that point to the power of Allah, the Almighty, to resurrect creatures on the day of the great reckoning. But as this spectacle is seen by people day after day, they get accustomed to it and used to it, until they are insensible to its significance, and they fail to see in it a reminder of the other revival, when creatures are resurrected from their death. No trace of weakness in the power of the All-powerful, no indication of a lack in His Wisdom or His Knowledge implies the failure of that resurrection; but Allah guides those whom He wills and misguides those whom He wills. This also is a glaring sign of His power, that He should bar whoever He wills from among His creatures from perceiving the compelling signs, so that they are blind to them and have no sense of them at all. They are like one who is immersed in the water to his jaws, but is screaming to be saved from thirst, and he denies the existence of water. With these and similar other considerations, one is brought close to Allah, the Exalted and Glorified, so that one thanks Him, praises Him, supplicates to Him, and prays to Him.



The side of the moon facing us

The moon is 240,000 miles (400,000 km) away from us; the tide that takes place twice per day is a subtle reminder of the existence of the moon; the tide on the shores of oceans can be in some cases as high as sixty feet. Even the crust of the earth bends outward twice every day by a few inches on account of the gravity of the moon, although every thing seems to us so normal that we are not aware of the astounding force behind these phenomena. Glorified be Your Name, Lord of the Worlds! If the moon's orbit were different from what it is now, the tide would be so strong that it would fragment the solid mountains, dislodge continents from their places! So Glory be to Him Who chose for everything its proper place and the right measure, according to a calculation unknown but to Him.

The duration of the day and the night

Consider also the duration of the day and the night, and you will find that they realize the utmost benefit and good; that if the day or the night were prolonged or shortened from what they are there would be corresponding harm, and the functions they perform would be different. Their total is twenty-four hours, and each gives and takes alternately from the time allotted to the other. Not long after one has taken from the time of the other, it pays it back what it borrowed. We may refer in this connection to the Qur'anic verse:

﴿يُولِجُ اللَّيْلَ فِي النَّهَارِ وَيُولِجُ النَّهَارَ فِي اللَّيْلِ...﴾ [فاطر: ١٣]

“He makes the night to pass into the day, and He makes the day to pass into the night ...” (35: 13) which has been interpreted in two ways. Some say it means that the dark of one is made to replace the light of the other, and the light of one to replace the dark of the other, each displacing the other alternately, which means that the verse is applicable to both, the day and the night.

The other interpretation is that what is decreased from one is gained by the other, what is decreased is absorbed by the other and not lost altogether; which means in other words that the verse is referring to some hours of the day and the night, at the time of inequality; the verse according to this is particular to the time of the day and the night that is absorbed by each other. In moderate climates, the maximum that the day or the night reaches is fifteen hours, leaving nine hours to the other. Where the difference is more, the climate will be more extreme in cold or heat; and cold and heat will be more extreme in climates which are not habitable by man and no plant grows. Every place which the sun does not shine on is not inhabited by animals and no plant grows,



Figure "53"

because of the exceeding cold and dryness; which is also true of the parts that the sun shines on all the time, because of the excessive heat and dryness. Places inhabited by animals and where plants grow are those where the sun shines on at times and does not shine on at others, the most moderate being those which all four seasons come over, one after the other, and where there are the two moderate seasons, the autumn and the spring.

High places are colder than the ones at sea-level, because the air in high places is less dense, and so it does not conserve heat. This is the explanation why some high mountains, even in hot regions, remain covered with snow all the year round.

The hottest climate is the tropical regions, falling between the Tropic of Cancer and the Tropic of Capricorn on both sides of the equator. In this region, the sun falls perpendicular some time of the year.

The sun-rays are weakest in the regions of the north and the south poles, because they fall slanting on those regions, and thus cover a wider area.

The sky

Reflect on the sky, look at it time after time. You can see how it is one of the greatest signs in its highness, elevation, spaciousness and stability; it does not rise like fire, nor does it sink down like heavy bodies. It has no props to support it, nor pegs to hold it from above: it is held by the power of Allah, who holds the heavens and the earth lest they vanish. Reflect, too, on its smoothness and fineness, on its having no crack, no rift or a slit, no raggedness or curveness. Consider also the colour it is destined to have, which is one of the best and most adapted to the eye and most healthful; a person who suffers an affliction in his vision is recommended to gaze long at the green and dark green. Physicians say: One way of dealing with weakened vision is to gaze long at a green bowl filled with water. Observe how the colour of the sky is made of this colour, so that one can look long at its vast expanse, and is not exhausted after long staring at it. This is just some of the benefits of this colour, but it is just a fraction of the whole wisdom in that respect.

Name of planet	Diameter in km	Average distance from sun in millions of km	Number of moons	Time for orbiting the sun (year)	Time for rotating around axis (day)
Mercury	4900	57.8	-	88 days	59 days
Venus	12200	108	-	224.7 days	243 days
Earth	12200	149.7	1	365.3 days	23 h & 56 m
Mars	6780	227.8	2	687 days	24 h & 50.5 m
Jupiter	142900	779	13	11.9 years	9 h & 50.5 m
Saturn	120050	1430	10	29.5 years	10 h & 14 m
Uranus	49000	2868	5	84 years	10 h & 50 m
Neptune	47000	4508	2	164.8 years	15 h & 50 m
Pluto	5800	5908	-	247.7 years	6 days & 9 h

Facts and figures

Comets, 'dirty snowballs' in space

The comets appear as hurtling glowing balls in the sky with tails that can extend as long as millions of kilometers. The nucleus of a comet is a mass consisting of a conglomerate of solid particles and hard ice; the nucleus is embedded in a nebulous disk of gases. The diameter of the gaseous disk can be 80,000 km. The rays of the sun have the effect of ejecting gas from the disk, and so it recedes from the comet, forming a long luminous tail in space.

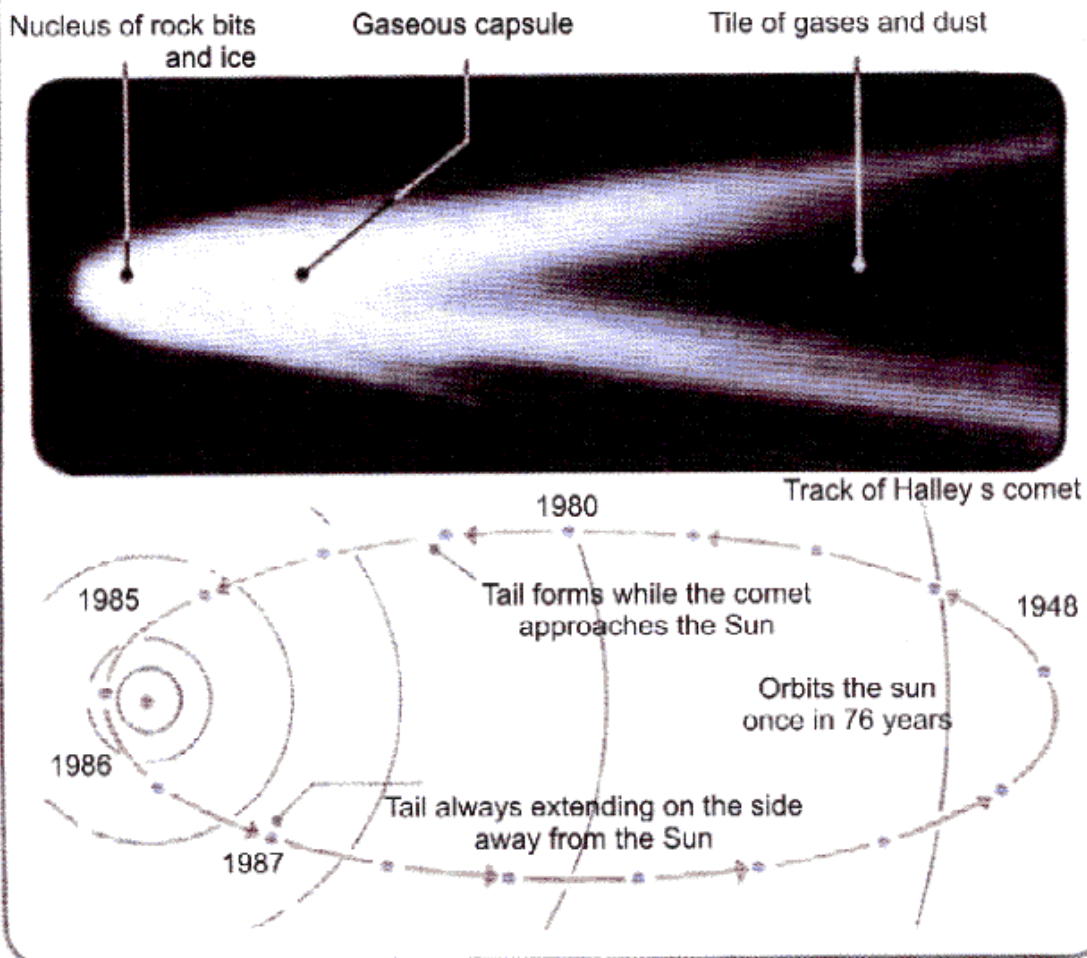
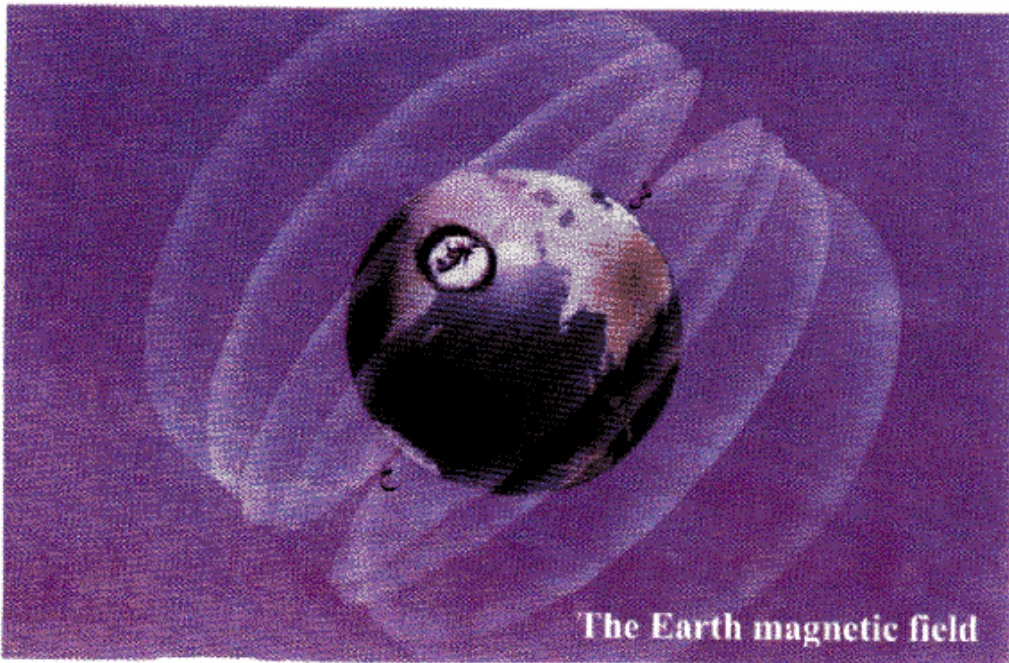


Figure "54"

Like all other bodies in the sky, the earth has a pulling force that we call the earth gravity. That gravity in attracted to the earth, and accounts for the falling of things towards the earth.



The Earth magnetic field

The earth, with its two poles, is also like a huge magnet. It causes the needle of a compass always to point towards the north magnetic north, which is not exactly the same as the geographic north.



The compass

Figure "55"