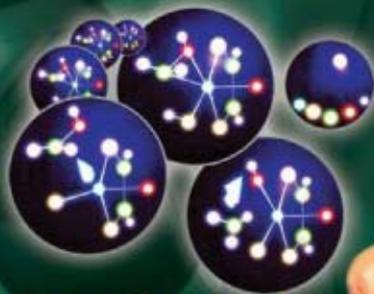
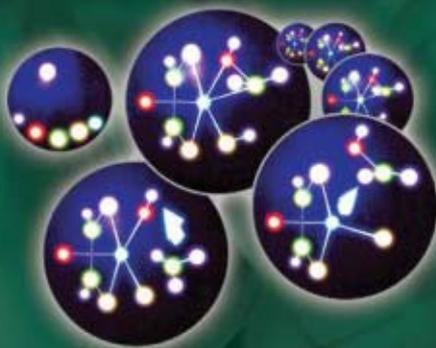


الله
رسول
محمد

HARUN YAHYA (ADNAN OKTAR)

MIRACLES WITHIN THE MOLECULE



When you hold this book in your hand, you are actually holding molecules. As you sip a cup of coffee, you are actually drinking molecules, and the coffee aroma that reaches your nose actually consists of scent molecules that you are breathing in. Your tongue that tastes the coffee and your eyes that read these lines are also nothing more than assortments of organic molecules. When you breathe, you are actually inhaling molecules from the outside atmosphere. It is thanks to these very molecules that you can see, smell and taste. And just like everything around you, your body itself is also made up of molecules.

But exactly what are these molecules that comprise you, your skin, the chair you sit in, a cat's fur—and indeed, the entire universe? In fact, those molecules are nothing more than the mutual electron bonds shared among atoms far too small to be seen with the naked eye. By sharing electrons with each other, atoms link up in long-lasting partnerships, forming molecules. The results, invisible to the naked eye, are an astonishing and infinite variety of objects animate and inanimate, from planets to human beings, from rivers to green forests, from antelopes to railways, and from daisies to apples.

In a words accessible to everyone, this book examines how Allah (God) has created molecules and their extraordinary features by the seemingly simple means of bonds between atoms. Learning how invisible molecules make up all the matter in the universe, using your reason and conscience, we can begin to see our Lord's infinite power, intellect and incomparable creations, will understand just how helpless we are before Him, and bow to Allah's great might.

About the Author



Adnan Oktar, who writes under the pen-name Harun Yahya, was born in Ankara in 1956. Since the 1980s, the author has published many books on faith-related, scientific and political issues. He is well-known as the author of important works disclosing the imposture of evolutionists, their invalid claims, and the dark liaisons between Darwinism and such bloody ideologies as fascism and communism.

All of the author's works share one single goal: to convey the Qur'an's message, encourage readers to consider basic faith-related issues such as Allah's existence and unity and the Hereafter; and to expose irreligious systems' feeble foundations and perverted ideologies. His more than 300 works, translated into 63 different languages, enjoy a wide readership across the world.

By the will of Allah, the books of Harun Yahya will be a means through which people in the twenty-first century will attain the peace, justice, and happiness promised in the Qur'an.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

اللَّهُ
رَسُولُ
مُحَمَّدٍ

TO THE READER

- A special chapter is assigned to the collapse of the theory of evolution because this theory constitutes the basis of all anti-spiritual philosophies. Since Darwinism rejects the fact of Creation—and therefore, Allah's existence—over the last 150 years it has caused many people to abandon their faith or fall into doubt. It is therefore an imperative service, a very important duty to show everyone that this theory is a deception. Since some readers may find the opportunity to read only one of our books, we think it appropriate to devote a chapter to summarize this subject.
 - All the author's books explain faith-related issues in light of Qur'anic verses, and invite readers to learn Allah's words and to live by them. All the subjects concerning Allah's verses are explained so as to leave no doubt or room for questions in the reader's mind. The books' sincere, plain, and fluent style ensures that everyone of every age and from every social group can easily understand them. As a result of their effective, lucid narrative, they can be read at one sitting. Even those who rigorously reject spirituality are influenced by the facts these books document and cannot refute the truthfulness of their contents.
 - This and all the other books by the author can be read individually, or discussed in a group. Readers eager to profit from the books will find discussion very useful, letting them relate their reflections and experiences to one another.
 - In addition, it will be a great service to Islam to contribute to the publication and reading of these books, written solely for the pleasure of Allah. The author's books are all extremely convincing. For this reason, to communicate true religion to others, one of the most effective methods is encouraging them to read these books.
 - We hope the reader will look through the reviews of his other books at the back of this book. His rich source material on faith-related issues is very useful, and a pleasure to read.
 - In these books, unlike some other books, you will not find the author's personal views, explanations based on dubious sources, styles that are unobservant of the respect and reverence due to sacred subjects, nor hopeless, pessimistic arguments that create doubts in the mind and deviations in the heart.
-

MIRACLES WITHIN THE MOLECULE

**This is Allah's creation.
Show me then what those besides
Him have created! The wrongdoers
are clearly misguided.
(Surah Luqman: 11)**

**HARUN YAHYA
(ADNAN OKTAR)**

ABOUT THE AUTHOR

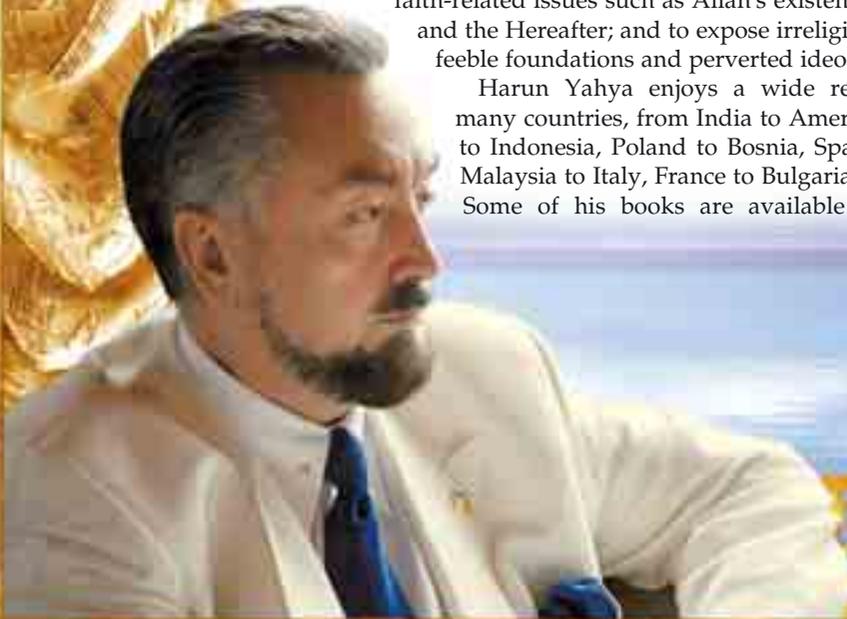
Now writing under the pen-name of HARUN YAHYA, Adnan Oktar was born in Ankara in 1956. Having completed his primary and secondary education in Ankara, he studied fine arts at Istanbul's Mimar Sinan University and philosophy at Istanbul University. Since the 1980s, he has published many books on political, scientific, and faith-related issues. Harun Yahya is well-known as the author of important works disclosing the imposture of evolutionists, their invalid claims, and the dark liaisons between Darwinism and such bloody ideologies as fascism and communism.

Harun Yahya's works, translated into 63 different languages, constitute a collection for a total of more than 55,000 pages with 40,000 illustrations.

His pen-name is a composite of the names Harun (*Aaron*) and Yahya (*John*), in memory of the two esteemed Prophets who fought against their peoples' lack of faith. The Prophet's seal on his books' covers is symbolic and is linked to their contents. It represents the Qur'an (the Final Scripture) and the Prophet Muhammad (pbuh), last of the prophets. Under the guidance of the Qur'an and the Sunnah (teachings of the Prophet [saas]), the author makes it his purpose to disprove each fundamental tenet of irreligious ideologies and to have the "last word," so as to completely silence the objections raised against religion. He uses the seal of the final Prophet (saas), who attained ultimate wisdom and moral perfection, as a sign of his intention to offer the last word.

All of Harun Yahya's works share one single goal: to convey the Qur'an's message, encourage readers to consider basic faith-related issues such as Allah's existence and unity and the Hereafter; and to expose irreligious systems' feeble foundations and perverted ideologies.

Harun Yahya enjoys a wide readership in many countries, from India to America, England to Indonesia, Poland to Bosnia, Spain to Brazil, Malaysia to Italy, France to Bulgaria and Russia. Some of his books are available in English,



French, German, Spanish, Italian, Portuguese, Urdu, Arabic, Albanian, Chinese, Swahili, Hausa, Dhivehi (spoken in Maldives), Russian, Serbo-Croat (Bosnian), Polish, Malay, Uygur Turkish, Indonesian, Bengali, Danish and Swedish.

Greatly appreciated all around the world, these works have been instrumental in many people recovering faith in Allah and gaining deeper insights into their faith. His books' wisdom and sincerity, together with a distinct style that's easy to understand, directly affect anyone who reads them. Those who seriously consider these books, can no longer advocate atheism or any other perverted ideology or materialistic philosophy, since these books are characterized by rapid effectiveness, definite results, and irrefutability. Even if they continue to do so, it will be only a sentimental insistence, since these books refute such ideologies from their very foundations. All contemporary movements of denial are now ideologically defeated, by means of the books written by Harun Yahya.

This is no doubt a result of the Qur'an's wisdom and lucidity. The author modestly intends to serve as a means in humanity's search for Allah's right path. No material gain is sought in the publication of these works.

Those who encourage others to read these books, to open their minds and hearts and guide them to become more devoted servants of Allah, render an invaluable service.

Meanwhile, it would only be a waste of time and energy to propagate other books that create confusion in people's minds, lead them into ideological confusion, and that clearly have no strong and precise effects in removing the doubts in people's hearts, as also verified from previous experience. It is impossible for books devised to emphasize the author's literary power rather than the noble goal of saving people from loss of faith, to have such a great effect. Those who doubt this can readily see that the sole aim of Harun Yahya's books is to overcome disbelief and to disseminate the Qur'an's moral values. The success and impact of this service are manifested in the readers' conviction.

One point should be kept in mind: The main reason for the continuing cruelty, conflict, and other ordeals endured by the vast majority of people is the ideological prevalence of disbelief. This can be ended only with the ideological defeat of disbelief and by conveying the wonders of Creation and Qur'anic morality so that people can live by it. Considering the state of the world today, leading into a downward spiral of violence, corruption and conflict, clearly this service must be provided speedily and effectively, or it may be too late.

In this effort, the books of Harun Yahya assume a leading role. By the will of Allah, these books will be a means through which people in the twenty-first century will attain the peace, justice, and happiness promised in the Qur'an.



**MIRACLES
WITHIN
THE MOLECULE**

**HARUN YAHYA
(ADNAN OKTAR)**





CONTENTS

INTRODUCTION10

I. THE MIRACLE IN THE ATOM12

The Forces That Hold Atoms Together15

Electrons: The Atom's Outermost Shell24

*II. THE FLAWLESS CREATION
IN THE MOLECULE*28

The Chemical Bonds That Make Up Molecules32

Molecules' Unceasing Movement41

III. MOLECULES IN OUR LIVES48

The Great Miracle of Water50

Carbon, the Basic Building Block of Life65

The Molecules That Build the Cell72

Molecules Coming To Life, Confirming Creation98

Sugar Molecules: A Common Form of Carbohydrates ..100

Keratin: The Intelligent Molecule in Your Body107

Cellulose: The Major Architect of the Vegetable
Kingdom111



Adhesive Molecules116
How You Taste Molecules117
The Aroma of Molecules121
The Molecules That Let You See124
Molecules Are the Source of Colors126

***IV. CRYSTALS: THE WONDROUS
ORDER IN MOLECULES136***

The Three States of Matter, In Which Molecules
Change Their Nature137
The Flawless Creation in Crystals138
A Few Examples of Crystals' Flawless Creation142

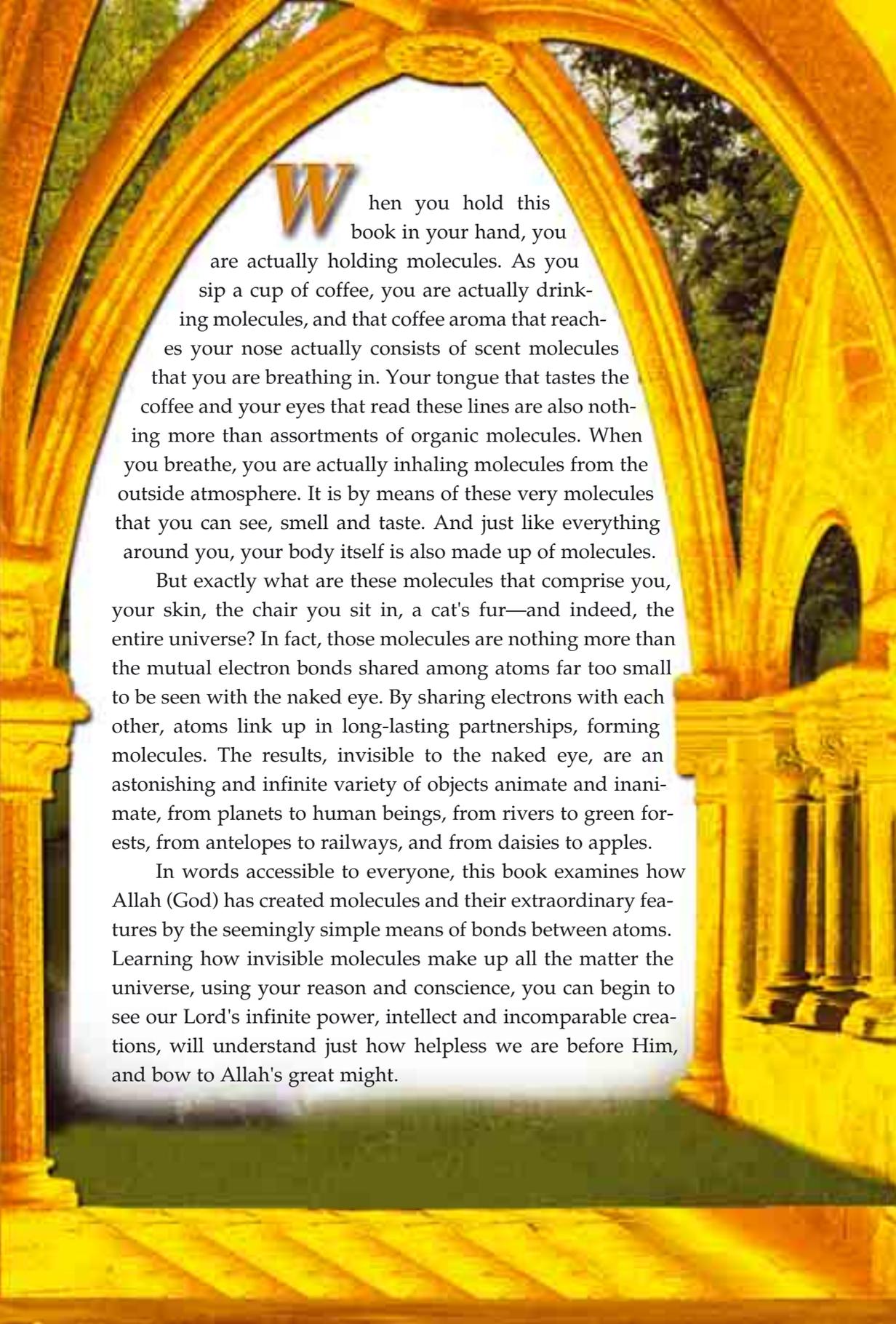
***V. NO ROOM FOR CHANCE AT
THE MOLECULAR LEVEL148***

The Invalidity of Claims of Coincidence151
Basic Principles Cause Darwinism's Collapse154

THE DECEPTION OF EVOLUTION160



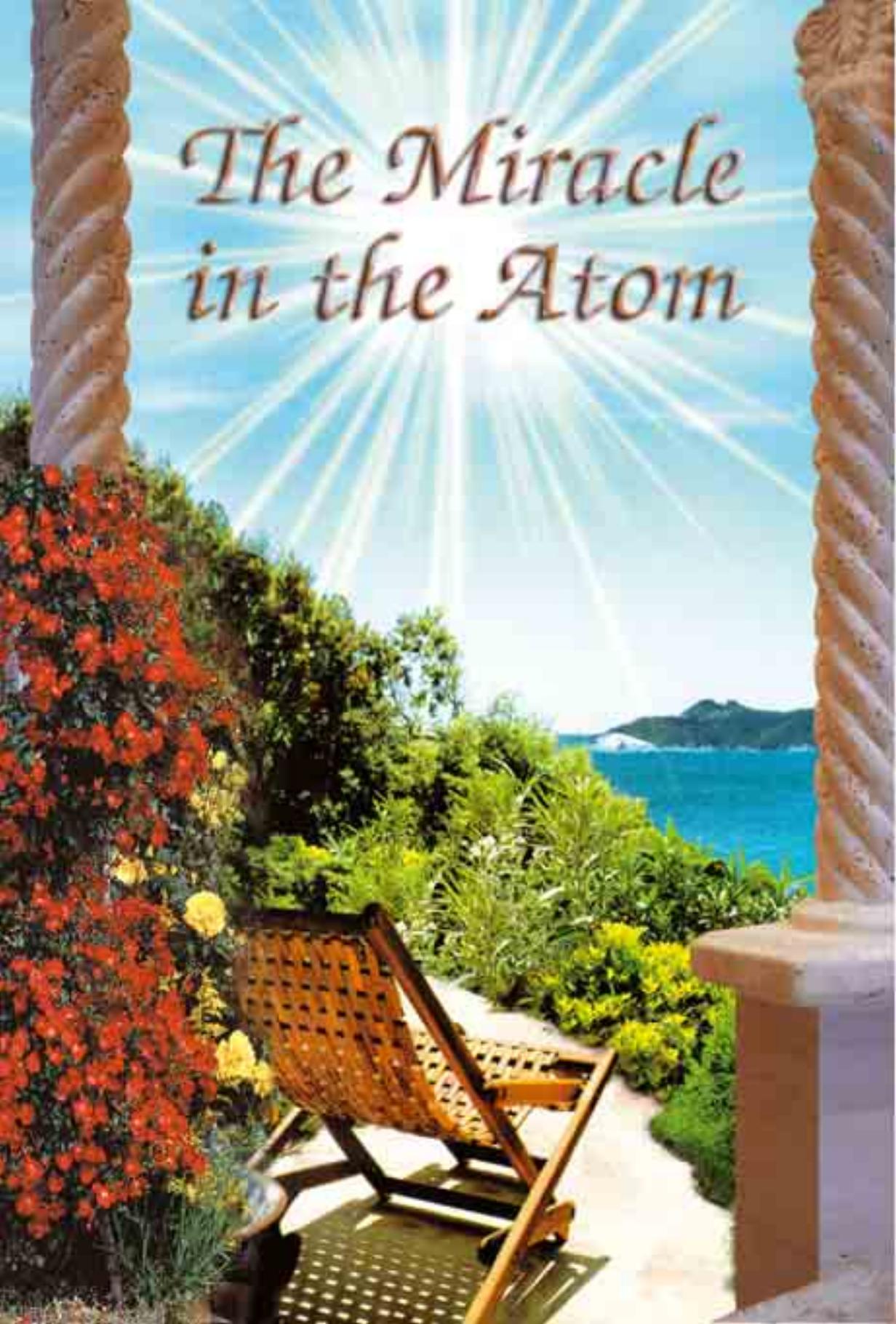
INTRODUCTION



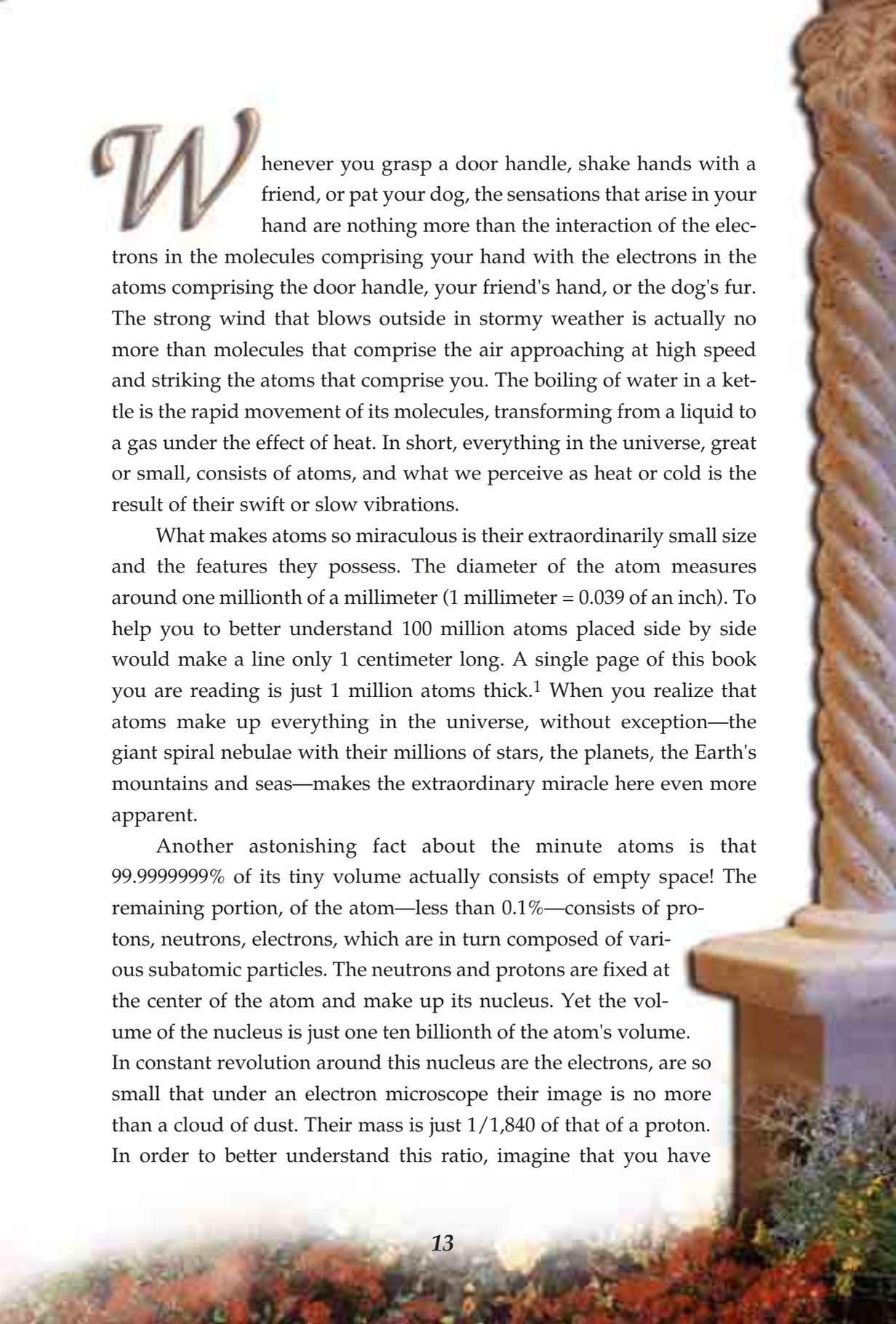
When you hold this book in your hand, you are actually holding molecules. As you sip a cup of coffee, you are actually drinking molecules, and that coffee aroma that reaches your nose actually consists of scent molecules that you are breathing in. Your tongue that tastes the coffee and your eyes that read these lines are also nothing more than assortments of organic molecules. When you breathe, you are actually inhaling molecules from the outside atmosphere. It is by means of these very molecules that you can see, smell and taste. And just like everything around you, your body itself is also made up of molecules.

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In words accessible to everyone, this book examines how Allah (God) has created molecules and their extraordinary features by the seemingly simple means of bonds between atoms. Learning how invisible molecules make up all the matter the universe, using your reason and conscience, you can begin to see our Lord's infinite power, intellect and incomparable creations, will understand just how helpless we are before Him, and bow to Allah's great might.



*The Miracle
in the Atom*



Whenever you grasp a door handle, shake hands with a friend, or pat your dog, the sensations that arise in your hand are nothing more than the interaction of the electrons in the molecules comprising your hand with the electrons in the atoms comprising the door handle, your friend's hand, or the dog's fur. The strong wind that blows outside in stormy weather is actually no more than molecules that comprise the air approaching at high speed and striking the atoms that comprise you. The boiling of water in a kettle is the rapid movement of its molecules, transforming from a liquid to a gas under the effect of heat. In short, everything in the universe, great or small, consists of atoms, and what we perceive as heat or cold is the result of their swift or slow vibrations.

What makes atoms so miraculous is their extraordinarily small size and the features they possess. The diameter of the atom measures around one millionth of a millimeter (1 millimeter = 0.039 of an inch). To help you to better understand 100 million atoms placed side by side would make a line only 1 centimeter long. A single page of this book you are reading is just 1 million atoms thick.¹ When you realize that atoms make up everything in the universe, without exception—the giant spiral nebulae with their millions of stars, the planets, the Earth's mountains and seas—makes the extraordinary miracle here even more apparent.

Another astonishing fact about the minute atoms is that 99.9999999% of its tiny volume actually consists of empty space! The remaining portion, of the atom—less than 0.1%—consists of protons, neutrons, electrons, which are in turn composed of various subatomic particles. The neutrons and protons are fixed at the center of the atom and make up its nucleus. Yet the volume of the nucleus is just one ten billionth of the atom's volume. In constant revolution around this nucleus are the electrons, are so small that under an electron microscope their image is no more than a cloud of dust. Their mass is just 1/1,840 of that of a proton. In order to better understand this ratio, imagine that you have

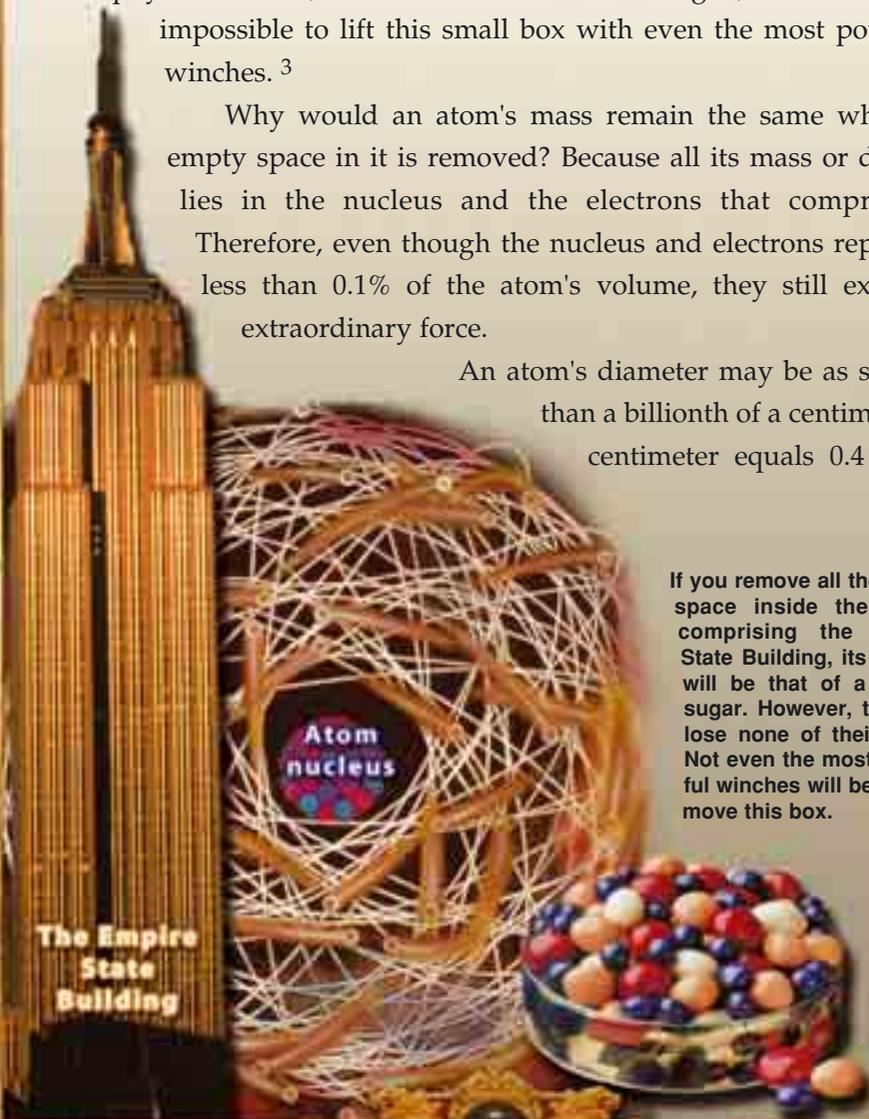
divided a tiny pinpoint into 1,840 parts. The electron is vastly smaller than any of these, because the larger proton possesses a mass many millions of times smaller than anything we can see. This example illustrates just how small this micro world really is. ²

That part of the atom described as being "full" consists of these tiny particles. If it were possible to remove all the empty space in all the atoms in New York City's Empire State Building, the matter remaining would be smaller in volume than a box of sugar. Yet its weight—or as physicists call it, mass—would remain unchanged, and it would be impossible to lift this small box with even the most powerful winches. ³

Why would an atom's mass remain the same when all empty space in it is removed? Because all its mass or density lies in the nucleus and the electrons that comprise it. Therefore, even though the nucleus and electrons represent less than 0.1% of the atom's volume, they still exert an extraordinary force.

An atom's diameter may be as smaller than a billionth of a centimeter (1 centimeter equals 0.4 of an

If you remove all the empty space inside the atoms comprising the Empire State Building, its volume will be that of a box of sugar. However, they will lose none of their mass. Not even the most powerful winches will be able to move this box.



inch). But the subatomic particles are hundreds of thousands of times smaller than the atom itself. Almost all the atom is empty. If an atom's nucleus were enlarged to the size of a grain of rice, the size of the whole atom would be that of a football stadium, with the electrons as minute specks of dust flying around the outer stands. At the beginning of the 20th century, British physicist Sir Arthur Eddington dramatized this fact:

I am sitting at a table, writing this paper. However, when I describe this "real" table in the language of science as I understand it, it is "a ghost"; in fact it is made of atoms that are themselves mostly empty space.⁴

The physicist and psychologist Peter Russell states that in fact, the 0.0000001% in question does not represent matter as we know it:

With the development of quantum theory, physicists have found that even subatomic particles are far from solid. In fact, they are not much like matter at all—at least, nothing like matter as we know it. They can't be pinned down and measured precisely. Much of the time they seem more like waves than particles. They are like fuzzy clouds of potential existence, with no definite location. Whatever matter is, it has little, if any, substance.⁵

Hans-Peter Durr, a professor of physics and head of the Max-Planck Physics Institute, clearly expresses the fact that "matter was not made from matter."⁶

Therefore, even though you perceive that the matter we touch is hard in the structure of matter, there is actually nothing to give rise to this solid hardness. The atoms that comprise that matter consist of no more than empty spaces and energy waves.

THE FORCES THAT HOLD THE ATOM TOGETHER

How can particles too small to be seen with the naked eye be arranged in empty space to form an atom? These particles give rise to the atom with a very special creation. One of the most important fea-

tures of this special creation is the basic forces that cause particles to both attract and repel each other. These basic atomic forces act on the particles comprising the atom, in the same way that larger forces control all the more observable balances in the universe, from atmospheric pressures to the Earth's orbit. These fundamental atomic forces are known as the Strong Nuclear Force, the Weak Nuclear Force, the Force of Gravity and Electromagnetic Force.

These forces are calculated at such fine levels that the slightest change in them would lead to the extinction of life, to planets eventually colliding with one another, and the collapse of the universe itself. For example, if the force of gravity were slightly stronger or weaker, the fixed orbits of the stars would be affected: They would either move ever closer to one another and eventually collapse into massive black holes, or move apart, eventually to drift haphazardly through the voids of space. These fundamental forces have been created at precise levels in



The four basic forces controlling all the balances in the universe are so delicate that even the slightest alteration in their levels might lead to the extinction of life. A small impairment in a sensitive balance might lead the planets to fall into one another and turn into clouds of fragments and for the universe itself to cease to exist.

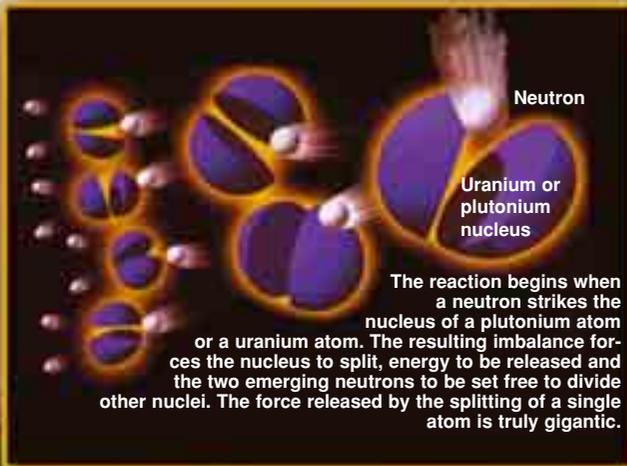
such a way as to ensure a flawless balance in both the tiny micro world as well as across the most enormous interstellar dimensions. Each force is the product of a Divine creation, planned to fulfill its own special purpose in the universe. This belongs to Allah, Who has created everything flawlessly, from the greatest to the smallest. In a verse, Allah reveals that He possesses the knowledge of all things in the heavens and Earth, from the largest to the smallest:

. . . He is the Knower of the Unseen, Whom not even the weight of the smallest particle eludes, either in the heavens or in the Earth; nor is there anything smaller or larger than that which is not in a Clear Book. (Surah Saba': 3)

Of these forces, Strong Nuclear Force provides a most important equilibrium within the atom. All things being equal, under ordinary circumstances, the protons in the nucleus should repel one another and move as far apart as possible. That is because all protons are positively

charged, and identical charges always repel each other—as you can demonstrate by bringing together the north poles of two separate magnets. As a result of Strong Nuclear Force, however, protons are clamped against one another, along with neutrons that bear no charge, at the center of the atom inside the atom's nucleus. In other words, Strong Nuclear Force allows the atom's nucleus to exist by holding its protons together. To better comprehend the power of this force, consider the effect of an atomic bomb. A nuclear explosion results of when a particle—generally a neutron—is hurled to "split" the nucleus of a uranium or plutonium atom. As the nucleus comes apart, the strong force is released that formerly held the protons and neutrons. The release of

incomparable energy vaporizes everything nearby, and the radioactive after-effects linger on for hundreds of years. This force concealed within an atom is imper-



ceptible, but its power leaves any creature exposed to it utterly helpless and defenseless. The Strong Nuclear Force operating in the nucleus is finely balanced to possess the ideal values for the formation of matter, and has maintained the existence of the universe ever since it came into being. If this force were even slightly more powerful, protons and neutrons would combine with one another. Were it slightly less powerful, these particles would separate from each other, dissolving the atom and creating a subatomic "soup" of particles that would prevent the formation of any animate or inanimate entities, the Earth, the Sun or even the universe itself.

Another force that serves to maintain atoms' balanced structure is the Weak Nuclear Force, which is of particular importance in atoms with large numbers of protons and neutrons. This force prevents any neutron in the nucleus from acquiring a positive charge and turning into a proton in the atom, and thus stops the atom splitting. This is a most important precaution because, as will be remembered, the splitting of the atom gives rise to a force that leads to the atom bomb. This situation, which may arise uncontrolled in certain atoms, represents a grave danger, but it is eliminated by the effect of Weak Nuclear Force.

The Strong and Weak Nuclear Forces do not affect the atom's electron as they do its protons and neutrons: Electrons are not affected in the same way as the other particles because they are so much smaller, are in constant motion and possess little mass. Electrons revolve without departing from their orbits around the nucleus because of the Electromagnetic Force's effect on them. Due to its negative electrical charge, an electron revolves constantly around the positively charged nucleus. The centrifugal force that arises during the rotation of the electron on its orbit is exactly balanced by Electromagnetic Force, and the electron thus remains in its orbit. The delicate level of the Electromagnetic Force keeps electrons from being drawn into to the nucleus or totally departing from it. That is how the structure of the atom arises.

Before moving on to electrons, of great importance in the formation of molecules, let us briefly recall on the details of the atom's structure. So far, the information you have read in summary form is the same as what you can find in any physics text. However, textbooks of that kind are not likely to emphasize the miraculously perfect structure of the atom and its thought-provoking aspects. Inanimate particles only a millionth of a millimeter (1 millimeter equals 0.04 of an inch) in size come together flawlessly to form life and non-living substances, just as they form the billions of stars, rivers, the sky, mountains, flowers, human beings and the seas. How atoms impart an order to all this creation is little discussed.

Another fact is generally seldom mentioned: The strengths of the universe's four fundamental forces are very different from one another, which differences are very delicately balanced. For example, the Strong Nuclear Force is around a *billion, billion, billion, billion, billion* times stronger than the force of gravity. The difference between the Strong and Electromagnetic Forces is greater than a million times million.

If these values were different, what would happen?

The weak and strong nuclear forces, electromagnetic forces and gravitational force must all be in their exact critical values in proportion to each other, in order for the galaxies, stars and for all the living things to exist at all.

If not, protons would not stay together in the atomic nucleus. Electrons would disperse, and a single atom could not exist. The entire universe would consist of radiation and random particles, with no stars, planets or human beings.

If the gravitational forces were any more powerful, entire galaxies would become collapsed into black holes instead of maintaining themselves by centrifugal force. Were it less powerful, stars would not be able to form the heavier elements necessary for life on planets. For instance, if the Strong Nuclear Force of the atoms constituting your body at this moment were to weaken a little—a deviation from the actual value by only thousandth—, your body would be obliterated instantly.

An ordinary substance consists of atoms that combine through electromagnetism to give rise to the molecules that constitute solids, gasses and liquids.

Atoms consist of a dense nucleus surrounded by a cloud of electrons. Electromagnetic forces keep the electrons in orbit around the nucleus.

Nucleus

Neutron Proton

The nucleus consists of protons and neutrons, which are bound together by the Strong Nuclear Force.

Atom

Nucleus

Electrons

Proton

Quarks

Protons and neutrons each consist of three quarks. These are held together with the Strong Nuclear Force.

Yet by means of the sensitive balance of the four fundamental forces, the atoms that constitute your body and the entire universe remain stable. This sensitivity has astonished scientists. As the famous astrophysicist Paul Davies, comments,

[with] a slightly different set of numbers, the world would be a very different place. Probably we would not be here to see it. . . . And when one goes on to study cosmology incredulity mounts. Recent discoveries about the primeval cosmos oblige us to accept that the expanding universe has been set up in its motion with a cooperation of astonishing precision.⁷

That the universe is arranged with an astonishing sensitivity means that it was created.

As you already saw, scientists refer to the physical forces in the universe as the "four basic forces," yet their definitions fail to account for why such forces exist and why they are so exquisitely balanced. If we reach beyond these definitions, we soon realize that Almighty Lord keeps the universe regulated at every moment.

The discovery made by modern physics is in fact nothing more than a secret revealed by Allah in the Qur'an 1,400 years ago:

Allah keeps a firm hold on the heavens and Earth, preventing them from vanishing away. And if they vanished no one could then keep hold of them. Certainly He is Most Forbearing, Ever-Forgiving. (Surah Fatir: 41)

For anyone who employs reason and conscience, that an atom consisting of more than 99.9999999% empty space possesses such vitally important properties is yet another miracle of Allah's creation. Our Lord reveals that there are proofs for believers in His creations:

In the alternation of night and day and what Allah has created in the heavens and the Earth. There are Signs for people who guard against evil. (Surah Yunus: 6)

The most important of the flawless atoms' many attributes is that they combine to create molecules. In the formation of molecules, elec-



Under the effect of the forces that affect their intense energy, electrons constantly spin around themselves and in an orbit around the nucleus. The spin electrons perform as a result of the energy they possess is one of the main causes of the equilibrium in the universe.

trons play the crucial role. Before moving on to this subject let us examine electrons.

Electrons: The Atom's Outermost Shell

Without taking into account even smaller particles only recently discovered, electrons are the smallest of the atom's basic building blocks—about $1/2,000^{\text{th}}$ the size of protons and neutrons.⁸ With their intense energy, electrons follow a specific orbit around the nucleus. As a result of the intense energy they possess and the forces that are exerted on them, they remain in the same orbit around the nucleus and also spin on their own axes.

The energy possessed by electrons displays an impeccable equilibrium that can be dramatized by the following example. Under normal conditions, it is impossible for you to balance a plate of wide diameter on top of a long rod. Yet if you give the plate a specific rate of spin of so many rotations per second, it will remain spinning on the end of that rod. The plate will inevitably fall and break when it loses speed. Therefore, all that's necessary to attain such equilibrium is an appropriate level of energy. This is the secret underlying the fundamental balances in the universe. Momentum is what keeps the planets rotating around the Sun and the electrons around the nucleus of the atom. As a result of this angular momentum, which is regulated with the greatest sensitivity, electrons orbit around the nucleus constantly, and the rotation they perform prevents them spinning away from the nucleus.

Electrons orbit the nucleus at the truly extraordinary speed of 1,000 kilometers (621 miles) per second.⁹ Yet despite this high velocity, they never collide with one another because electrons all bear a negative electrical charge and therefore repel one another. However, that fact does not answer the question of why all electrons are negatively charged. Why do identical charges repel one another? How did these particles that repel one another come to be in orbit? All these questions once again reveal the sensitive balance and creation in the atom. In fact, we are dealing with a great miracle. In some atoms, more than 100 electrons



orbit the nucleus. The way that electrons are divided into up to seven orbits, revolving in levels at high speed, with no confusion ever arising and never colliding with one another, is the product of an impeccable creation.

There are up to seven different energy levels around the nucleus, which creates seven different orbits for electrons. Each electron adheres to one of these paths, depending on the energy level it possesses. The reason why electrons, which always possess the same mass and velocity, have different energy levels is a point to consider. In the system in the universe, bodies with different masses and velocities wind up in different orbits. The most familiar example of this is the planets in our own Solar System. All planets have different masses and different speeds, following different orbits. However, this arrangement does not apply to electrons. There is actually no reason for these particles—whose masses and velocities are always the same—to possess different energy levels. This is a most special state of affairs created by Allah, because it is essential that these different orbits exist in order for molecules to form. The different orbits within the atom gives rise to the molecules and com-

pounds that make up ourselves and the entire universe. At the same time, they also give rise to colors, because one of the causes of different colors is how electrons in one orbit jump across to another' level.

Electrons which are present inside the atom move too quickly that they constitute a cloud. With the flawless order they establish to form molecules, these minute units, invisible to the naked eye, constitute the basis of all matter, animate and inanimate. As you shall see in detail in the following pages, their order is so specially created that not one single component of it could possibly have come into being by chance.

The Lord of this flawless and most superior artistry is Allah, Who reveals in one verse:

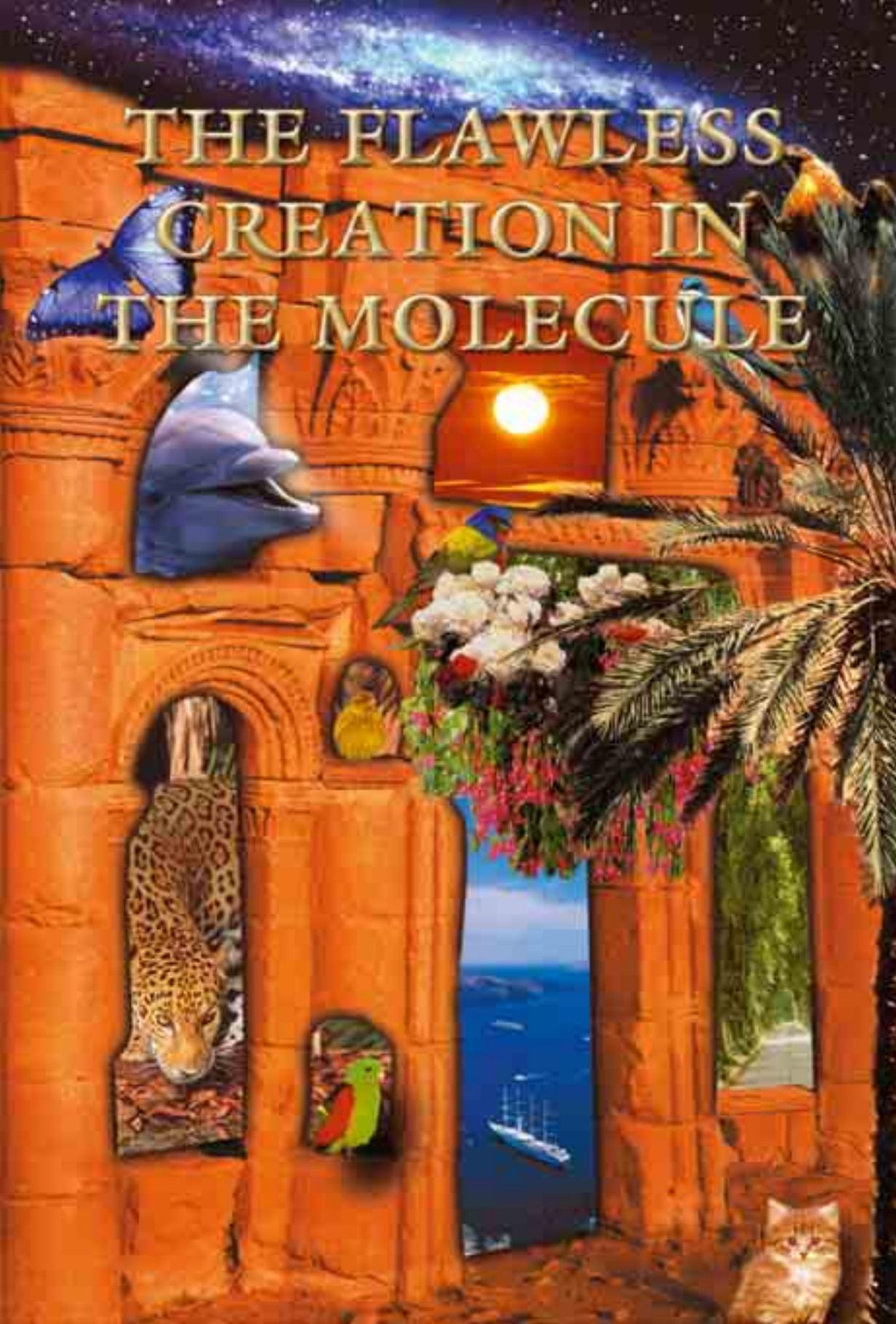
He to Whom the kingdom of the heavens and the Earth belongs. He does not have a son and He has no partner in the Kingdom. He created everything and determined it most exactly. (Surat al-Furqan: 2)

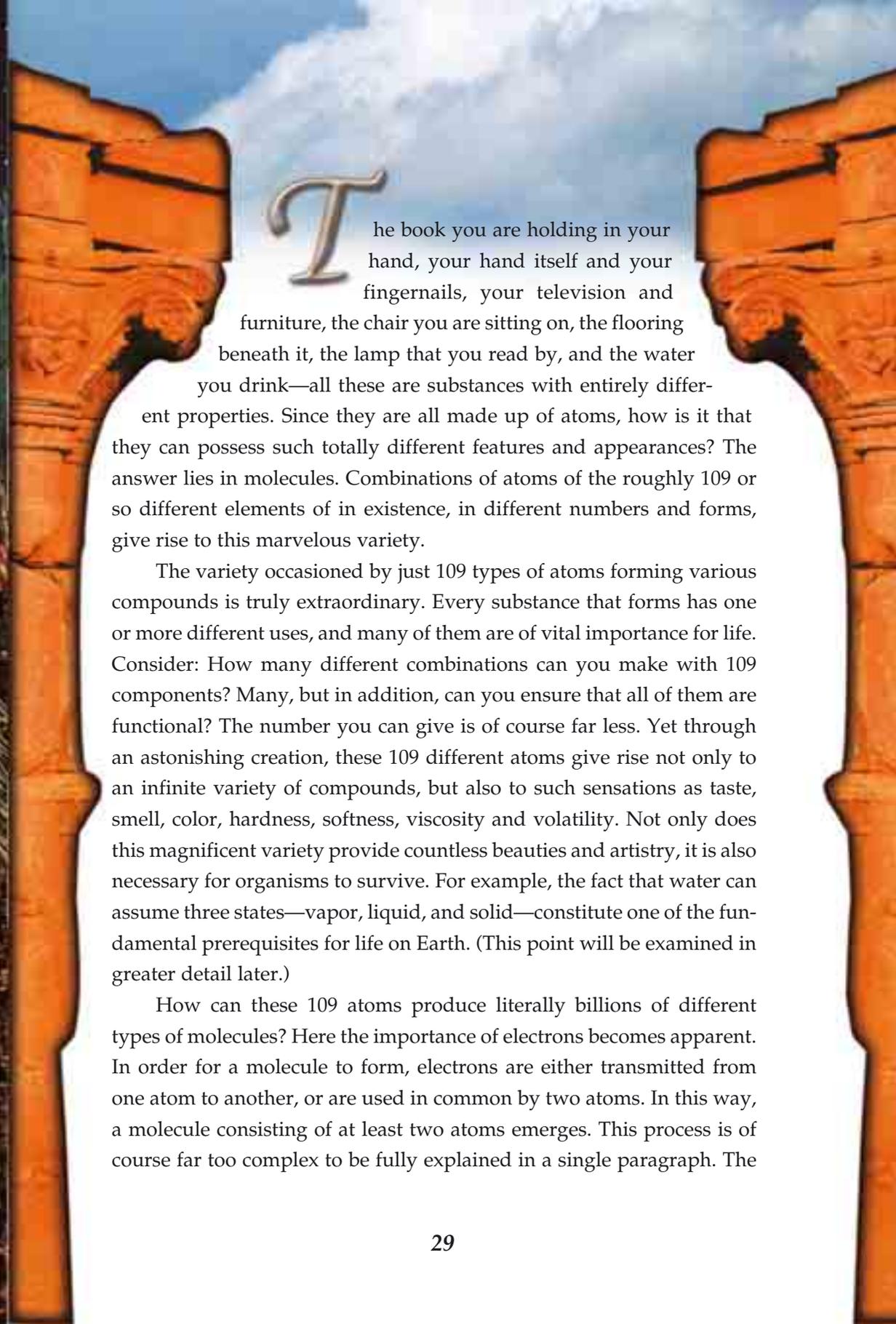
Electrons revolve only in specific orbits. Each orbit has a specific energy level. That energy level varies according to the distance of the orbit from the nucleus. The closer an orbit is to the nucleus, the higher the energy.

There are also 'sub-orbits' below each electron's orbits. Electrons jump from the sub-orbit they are in to one with higher energy. When there is an empty space in one upper energy level the electron suddenly disappears and then reappears in an astonishing manner in that upper energy level. However, in doing this the electron receives significant support from outside; energy. In jumping from one orbit to a higher energy sub-orbit it has to receive an equivalent amount of energy to that between the two energy levels from the outside. The electron cannot leap to this orbit until it achieves the energy level required by the upper energy level. The energy the electron receives from the outside is the "photon."

The color of a body is a combination of the light rays (photons) reaching the eye by being reflected from that object. If a body illuminated with white light appears "red," that means it absorbs a great part of the solar light and only reflects the red light. The electron absorbs the photon, the light particle that possesses the level of energy between the two sub-orbits. The part that is not absorbed is reflected as colors.

THE FLAWLESS CREATION IN THE MOLECULE





The book you are holding in your hand, your hand itself and your fingernails, your television and furniture, the chair you are sitting on, the flooring beneath it, the lamp that you read by, and the water you drink—all these are substances with entirely different properties. Since they are all made up of atoms, how is it that they can possess such totally different features and appearances? The answer lies in molecules. Combinations of atoms of the roughly 109 or so different elements of existence, in different numbers and forms, give rise to this marvelous variety.

The variety occasioned by just 109 types of atoms forming various compounds is truly extraordinary. Every substance that forms has one or more different uses, and many of them are of vital importance for life. Consider: How many different combinations can you make with 109 components? Many, but in addition, can you ensure that all of them are functional? The number you can give is of course far less. Yet through an astonishing creation, these 109 different atoms give rise not only to an infinite variety of compounds, but also to such sensations as taste, smell, color, hardness, softness, viscosity and volatility. Not only does this magnificent variety provide countless beauties and artistry, it is also necessary for organisms to survive. For example, the fact that water can assume three states—vapor, liquid, and solid—constitute one of the fundamental prerequisites for life on Earth. (This point will be examined in greater detail later.)

How can these 109 atoms produce literally billions of different types of molecules? Here the importance of electrons becomes apparent. In order for a molecule to form, electrons are either transmitted from one atom to another, or are used in common by two atoms. In this way, a molecule consisting of at least two atoms emerges. This process is of course far too complex to be fully explained in a single paragraph. The

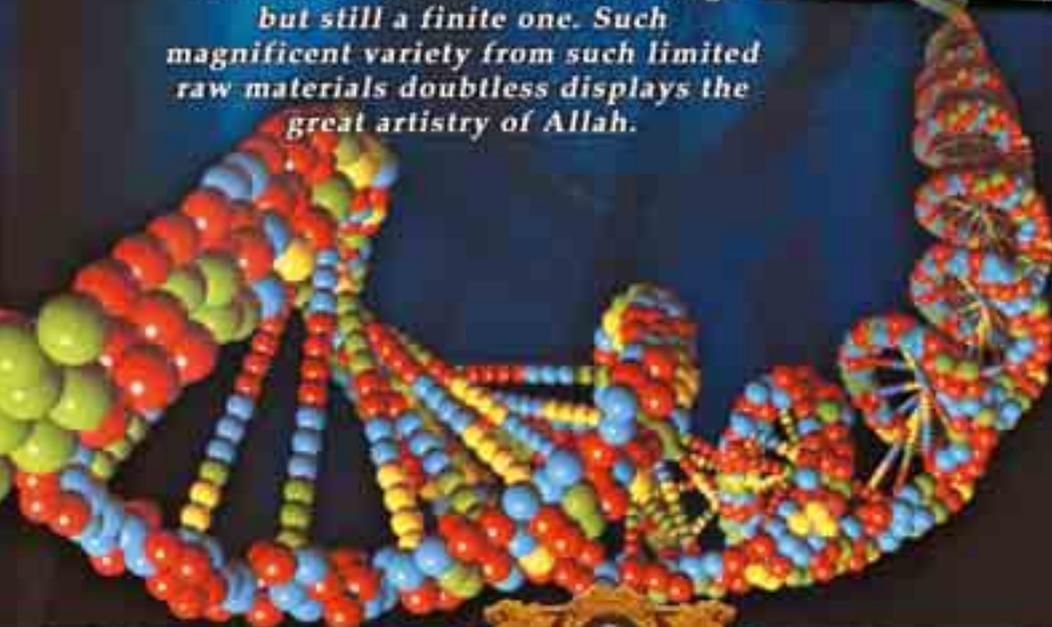
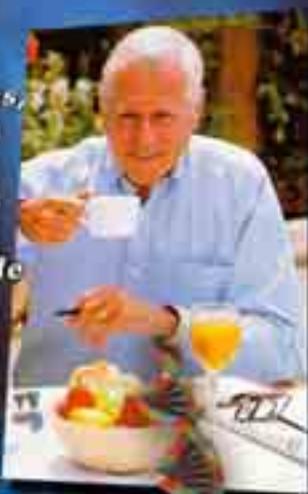


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91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120			

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121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140



The skyscrapers in large cities, your home, the table in your kitchen, the fruit you eat, the water you drink—these are all different materials with different properties. In various amounts and configurations, the combination of the 109 elements found in nature gives rise to the astonishing variety on Earth. Just as these 109 elements give rise to different substances, they also provide such details as smell, taste, color, hardness, softness, viscosity and lightness. How many different substances can you make by combining 109 separate elements? The number will of course, be large but still a finite one. Such magnificent variety from such limited raw materials doubtless displays the great artistry of Allah.



two atoms' exchange of electrons is known as a *chemical bond*. Yet there is actually no "bond" at all, just one electron passing back and forth between two atoms. What binds the atoms together is the journey that electron makes from one atom to the other. The form of these chemical bonds—essentially, electron sharing—and the nature and the numbers of the atoms that combine together, determines the structure and nature of the molecule. In order to clarify the subject, let's first examine the chemical bonds that permit molecules to form.

THE CHEMICAL BONDS THAT MAKE UP MOLECULES

A freely moving atom is attracted or repulsed by other atoms around it. Under this effect, two atoms may approach and attach to one another, become re-arranged to achieve a stable structure. This results in the atoms surrendering their own distinctive properties and coming into possession of new features together, and forming a new substance with entirely different characteristics. For example, two hydrogen atoms and an oxygen atom that join together give rise to a new structure—a stable water molecule.

If the newly emerged compound were not stable, it would soon dissolve. By analogy, a new organ transplanted into a patient's body during a transplant operation will impair the stable structure of that body unless it can adapt itself. In a similar way, atoms that combine together must produce a stable compound by adapting to one another.

Electrons have vitally important ways of bonding in order for the resulting molecules to remain stable, and every atom employs the bonding form appropriate to it. Let us now examine these bonds.

ATOMS ENGAGED IN ELECTRON EXCHANGES CONSTRUCT IONIC BONDS

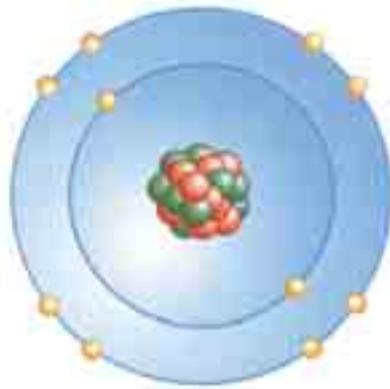
The electron exchange among atoms is analogous to partners pooling their capital to start a new business. If one of the parties lacks sufficient funds to open a new plant, that person will declare himself a part-

ner and borrow the needed amount of capital from another partner. Thus a lasting business agreement is arrived at. When the available capital grows, the number of eventual partners may rise.

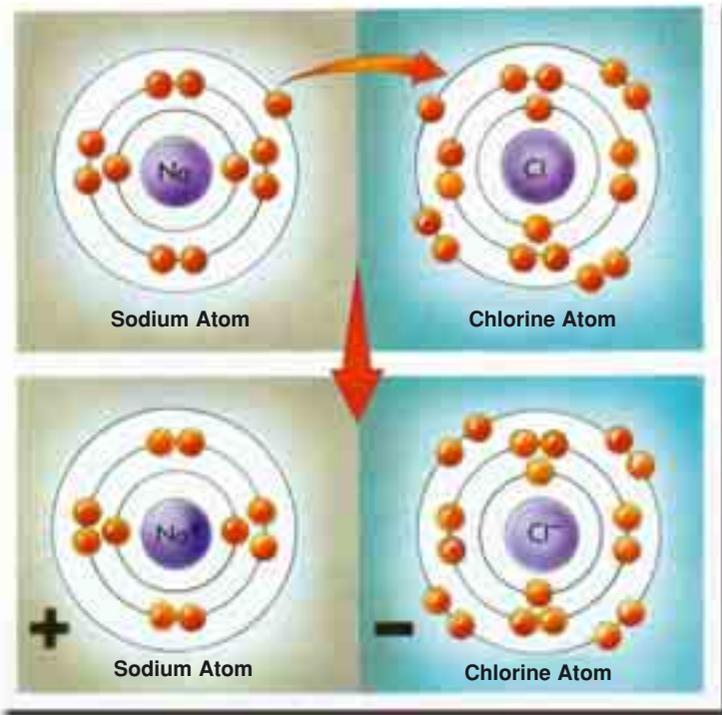
The exchange among atoms may be compared to this. We have already mentioned electrons' orbits. The number of electrons in an atom's outermost orbit always is eight. If atoms have fewer electrons than eight, they need to establish partnerships in which they share electrons, and in this

way, molecules can possess a stable structure. To form compounds (i.e., partnerships), atoms must either donate electrons from their outermost orbit around the nucleus to another atom, or else borrow one or more electrons from that atom. Following this exchange, the electron-donating atom will have a positive charge and the receiving atom a negative one. Since opposites attract, these two atoms will not split apart from one another. In this way is formed what's known as an *ionic bond*, and a molecule results.

For the transfer of a large number of electrons in exchanges between atoms, a considerable amount of energy is necessary. For that reason, the most economical partnership is determined. For example, a chlorine atom has seven electrons in its outer orbit. Instead of lending seven electrons to another atom, it will be enough to receive one electron from another atom in order to complete its "capital." The most appropriate atom to donate an electron is sodium, because of the single extra electron it possesses in its outer shell. When sodium lending its one spare electron to the chlorine atom, the sodium chloride molecule is



Atoms achieve a stable structure only when the number of electrons in their outer shell reaches 8. The neon is a very stable atom with eight electrons in its outermost orbit.



The sodium atom donates its single outermost electron to the chlorine atom with its seven outermost electrons in order for both to attain a stable state. The molecule formed by these two atoms, bound together with an ionic bond, is sodium chloride, the table salt you use in everyday life. But by itself, sodium is explosive and chlorine is poisonous.

formed—and the result of this partnership is the salt you use in cooking and eating. Ordinary table salt is nothing more than a single electron exchanged between these two atoms. One important point to remember is that pure sodium is actually explosive, and that pure chlorine, a gas, is poisonous. Yet as a result of flawless planning, the mixture of explosive and poisonous atoms emerges as a substance that meets our culinary needs.

The business partnership we used as an analogy is a conscious agreement between two rational human beings, performed after certain analyses, with profit and loss being taken into account. A human partnership may give rise to various problems, and today's analyses may no longer be valid tomorrow. Yet the exchange that takes place between molecules is sound and trouble-free. Every atom behaves as if it knows that it should have eight electrons in its outermost orbit. So far, no molecular partnership has ever taken place with seven electrons, or with nine. In addition to calculating the number of electrons in their respective outer orbits, atoms must also determine whether it will be more profitable to donate or receive electrons.

Can this consciousness belong to the atom itself? Does the atom plan its bonding or become aware of it? Such an idea is of course impossible. That conscious planning belongs to Allah, Who creates atoms and inspires in them their systematic, inerrant behavior.

The outer electron shell that enables atoms to construct bonds with one another and which permits chemical reactions is a miracle by itself. If atoms had no tendency to limit the number of electrons in their outermost orbits, then no molecules or compounds could form anywhere in the universe, and life would therefore not be possible. So why *do* atoms have such a tendency? Scientists have no answer to that question!

The only explanation for the way that atoms are structured to form compounds ideally suited to life, is creation. The atomic structure has been determined in such a way as to make possible the formation of chemical bonds, and Allah has created the laws of nature that will permit this perfect order. This again reminds us that He has created the entire universe, and of the purpose and great wisdom behind His creation. In one verse, Allah states:

This is Allah's creation. Show me then what those besides Him have created! The wrongdoers are clearly misguided. (Surah Luqman: 11)

ATOMS SHARE THEIR ELECTRONS AND ESTABLISH COVALENT BONDS

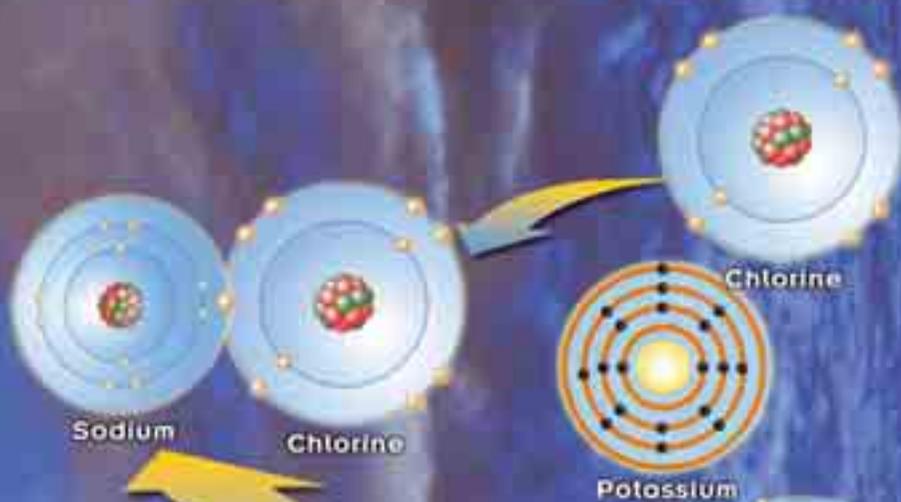
Atoms may sometimes lack enough electrons to donate to one another. Or instead of giving each other electrons, atoms may prefer another form of bonding. At such times they share the requisite electrons between them, literally like two islands joined together by a bridge. In this analogy, electrons constitute this connective bridge, which is known as a *covalent bond* between atoms. Many important molecules on Earth are the result of such bonds.

To help you understand these atomic bonds more clearly, take the example of the hydrogen atom, which possesses only a single electron. This exceedingly simple atom tries to double its single electron in order to achieve greater stability. As you have already seen, there needs to be a specific number of electrons—eight—to be circling in an atom's outermost orbit. The only exception to this rule is in an atom's first orbit, where the ideal number of electrons is two. Therefore, it is sufficient for a hydrogen atom, with its single electron in a single orbit, to obtain only one more electron to attain stability. To do so, hydrogen establishes bonds with various atoms. The hydrogen gas present in the atmosphere is nothing else than two hydrogen atoms joined by a covalent bond.

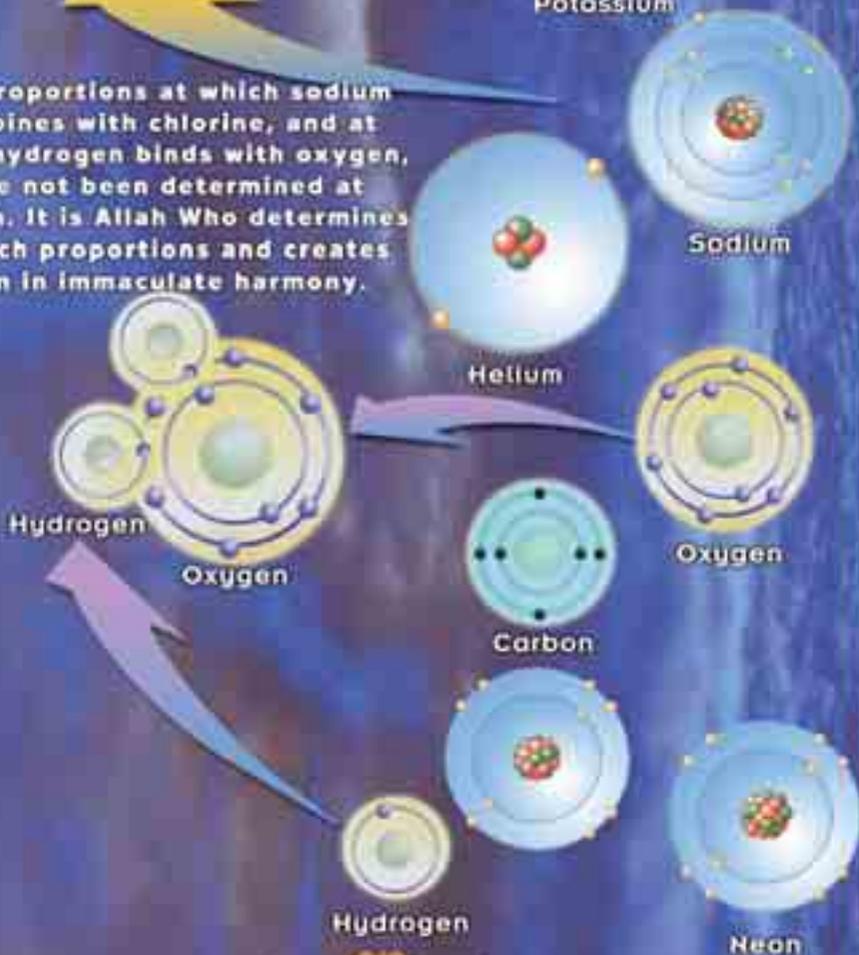
Similarly, an oxygen atom has six electrons in its outer orbit. In order to become stable, it needs to raise that number to eight. It therefore seeks two hydrogen atoms—each of which possesses a single electron—with which it can establish a covalent bond. .

These calculations for oxygen and hydrogen are not randomly determined. It's no coincidence that oxygen has six electrons and two hydrogen atoms can make up this deficit. By means of the atoms' mutual harmony, water—the most essential substance for life—is created. Allah determines these proportions and creates stable, harmonious atoms and water. This is openly revealed in the following verse:

**We send forth the pollinating winds and send down water from the sky and give it to you to drink. And it is not you who keep its stores.
(Surat al-Hijr: 22)**



The proportions at which sodium combines with chlorine, and at which hydrogen binds with oxygen, have not been determined at random. It is Allah Who determines all such proportions and creates them in immaculate harmony.



SOME ATOMS ARE ATTACHED BY HYDROGEN BONDS

If a hydrogen atom is used in common by two atoms, this bond is known as a hydrogen bond. The two atoms in question have to be negatively charged for this to happen. Oxygen and nitrogen atoms are the best example of this. A *hydrogen bond* occurs when two electronegative atoms, such as nitrogen and oxygen, interact with the same hydrogen atom. Hydrogen can attach to oxygen and nitrogen atoms by means of a covalent bond. The electrons in these atoms are closer to the oxygen and nitrogen atoms compared to the hydrogen atom. The reason for this is that these other atoms have more neutrons and protons and therefore, a greater atomic weight and exert a more powerful gravitational attraction. Therefore, the electrons of the hydrogen atom and the other atom to which it will bind move away from the hydrogen atom. With negatively charged electrons moving away, the hydrogen atom's charge becomes positive, keeping it stable between the two larger, negatively charged atoms. In this way the hydrogen atom moving between the two atoms becomes such a bond, and a hydrogen bond between the two atoms is established.

Hydrogen bonds are weak, meaning that a low level of energy is sufficient to break the bond. Weak bonds play a most important role in the formation of larger organic molecules, because these bonds are *elastic*. They impart flexibility to the substances they give rise to. During this elasticity, however, no rupture takes place between any of the bonds forming the molecule.

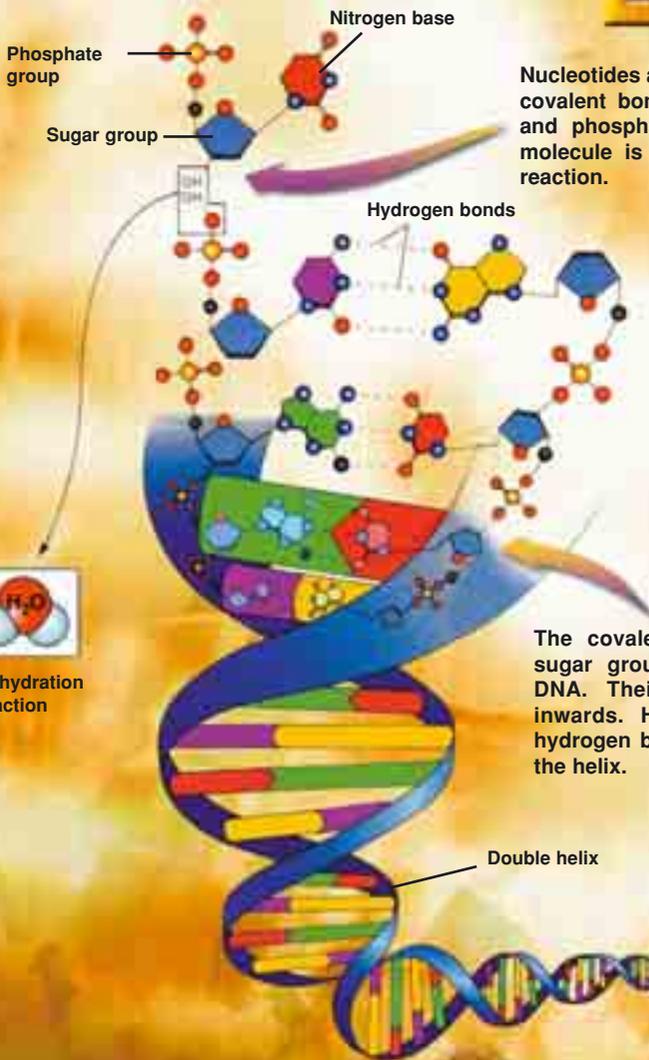
This distinguishing feature of hydrogen bonds is of great importance for many molecules on Earth. The clearest example is the DNA molecule: The many miraculous processes it performs in the body are to a large extent results of the hydrogen bonds the molecule possesses. In due course, you shall see this in greater detail, as well as other molecules that acquire distinguishing features by means of their hydrogen bonds.

In order for life to emerge, there are more combinations of atoms than anyone can possibly guess. There are more atoms in a visible peri-

(Side) Image of DNA double helix taken with a colored micrograph (STM)



The molecules comprising DNA are attached with a hydrogen bond. The miraculous functions that the DNA molecule performs result to a large extent from the flexibility of these hydrogen bonds.



Nucleotides attach to polymers via covalent bonds by way of sugar and phosphate groups. A water molecule is released during this reaction.

DNA STRUCTURE

The covalently bonded polymer and sugar groups form the backbone of DNA. Their nitrogen bases extend inwards. Here, a great many weak hydrogen bonds link the two halves of the helix.



*He encompasses what is
in their hands and has counted
the exact number of everything.*

(Surat al-Jinn: 28)

od on this page than there are stars in our galaxy.¹⁰ The apple you hold, the home you live in, your own body, and even the planet you live on are all composed of atoms. Yet the bonds described above are nothing more than the movements of absolutely minute electrons. It is their movements that give rise to the air you breathe, the home you live in, cats and dogs, the scents of flowers, the taste of apples, the water you drink, the enzymes in your body—in short, to everything that exists.

Can you imagine how many electrons are traveling among the millions of atoms in a single punctuation mark? The emergence of such a broad, wide-ranging universe from such a microscopic sphere, which even a powerful electron microscope shows as a blurred cloud of dust, is quite extraordinary. The emergence of something out of nothing—of weight and substance from emptiness, color from colorless, and scent from no odor are all proofs of the superior nature of Allah's creation.

It is Allah, Lord of infinite intellect, might and knowledge, sovereign over the earth and sky, Who creates all things, from subatomic particles to mountains, stars and human beings. This is revealed in this verse:

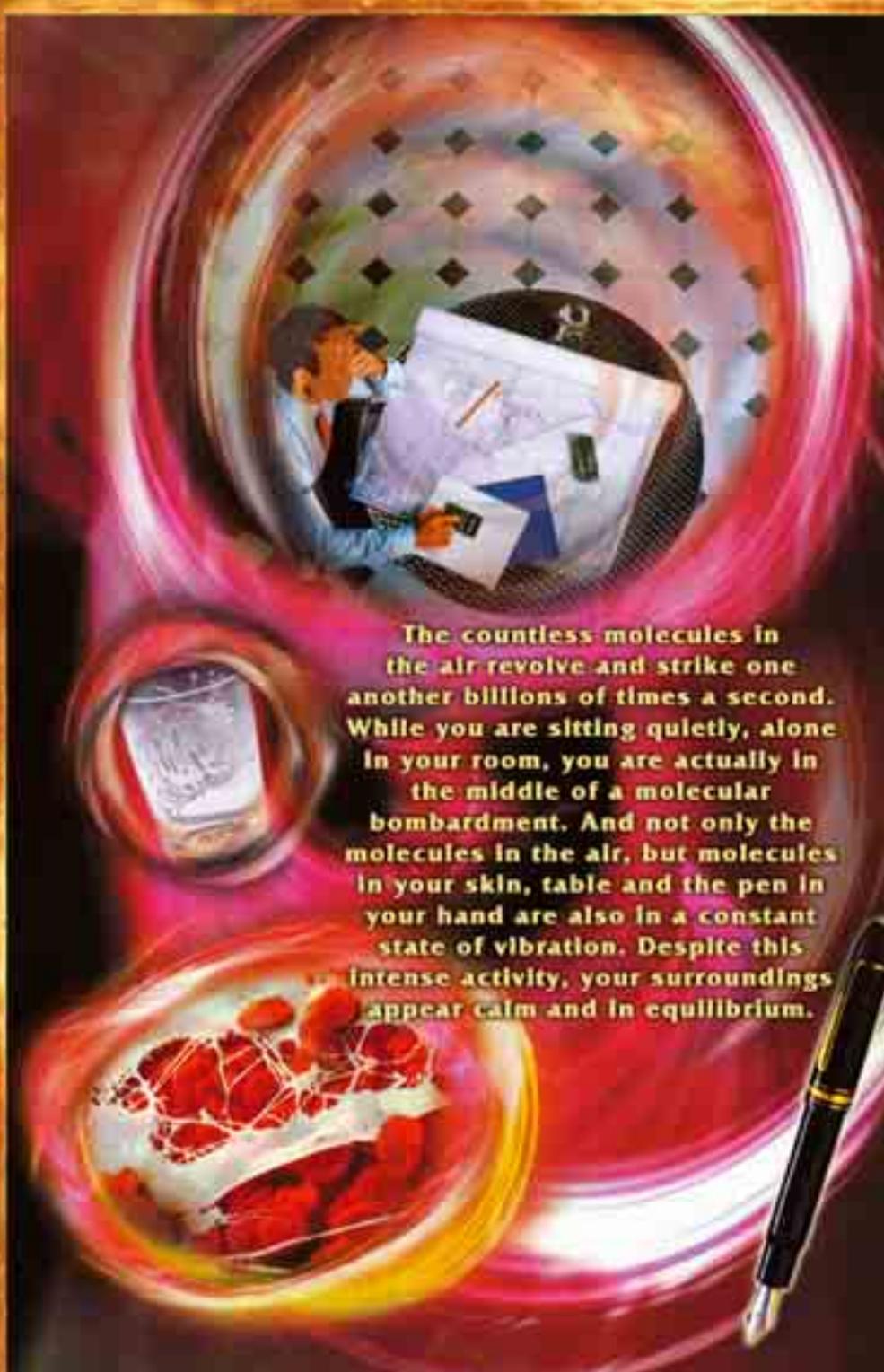
Allah, there is no god but Him, the Living, the Self-Sustaining. He is not subject to drowsiness or sleep. Everything in the heavens and the Earth belongs to Him. Who can intercede with Him except by His permission? He knows what is before them and what is behind them but they cannot grasp any of His knowledge save what He wills. His Footstool encompasses the heavens and the Earth and their preservation does not tire Him. He is the Most High, the Magnificent. (Surat al-Baqara: 255)

Molecules' Ceaseless Motion

When you sit quietly in a room, with no noises around you, you imagine that nothing is moving. Yet in fact, everything around you—not just the air—is in a constant state of motion. How can that be?

Electrons, the smallest particles in the molecules that compose you and this book you are reading, constantly revolve at a velocity of 1000 kilometers (621 miles) per second. In addition, these molecules are also in constant motion. The velocity of the molecules traveling in empty space is roughly equivalent to that of a bullet leaving the muzzle of a gun—greater than 1 kilometer (0.621 miles) per second.¹¹

The trillions of molecules in the air collide with each other billions of times every second and continue on until they strike one another again. Thus when you imagine you are sitting all alone, perfectly still,



The countless molecules in the air revolve and strike one another billions of times a second. While you are sitting quietly, alone in your room, you are actually in the middle of a molecular bombardment. And not only the molecules in the air, but molecules in your skin, table and the pen in your hand are also in a constant state of vibration. Despite this intense activity, your surroundings appear calm and in equilibrium.

you are actually in the midst of a molecular bombardment. This bombardment can sometimes assume the state of a violent wind, powerful enough to uproot trees and tear down buildings.

It's not only the molecules in the air that move. The molecules in your skin and the book you are holding are also in a constant state of motion. You may well wonder: How can a stone wall, one that even the most powerful winch would have difficulty lifting, be in a state of motion? But a wall really does move—but this is merely in microscopic vibration, since the molecules comprising it are compressed much closer together. Despite matter all around us being comprised of particles in a constant vibration, it always appears solid and sound. Despite its inner vibration, it never suddenly breaks up or falls apart.

The motion of this kind among molecules also must be balanced. The *vibration* referred to here is a form of motion that ensures equilibrium in solid bodies. Furthermore, except in a wind or river, molecules never move in one fixed direction alone. Were such a possibility to take place, with all molecules moving in the same direction, we would be astonished to see the dining table traveling a certain distance.¹² Yet we never actually encounter such a possibility because, as a blessing from Allah, the molecules comprising a solid body cancel each other out. Thus no such irregularity of their moving in a single, fixed direction ever arises.

Molecules' ability to assume different forms under the effect of thermal energy is also the result of their motion and energy. For example, water freezes into a solid state when its molecules are staying together. When the ice warms up and becomes liquid again, the molecules slide over one another as a result of their being in more rapid motion. That is why we can stir the liquid. The final stage, steam, is when water heats up even further and its molecules move well away from each other. These molecules distance themselves from each other and can easily spread out since they are no longer restrained by surface tension. That is why you can smell meals being cooked even in another room.

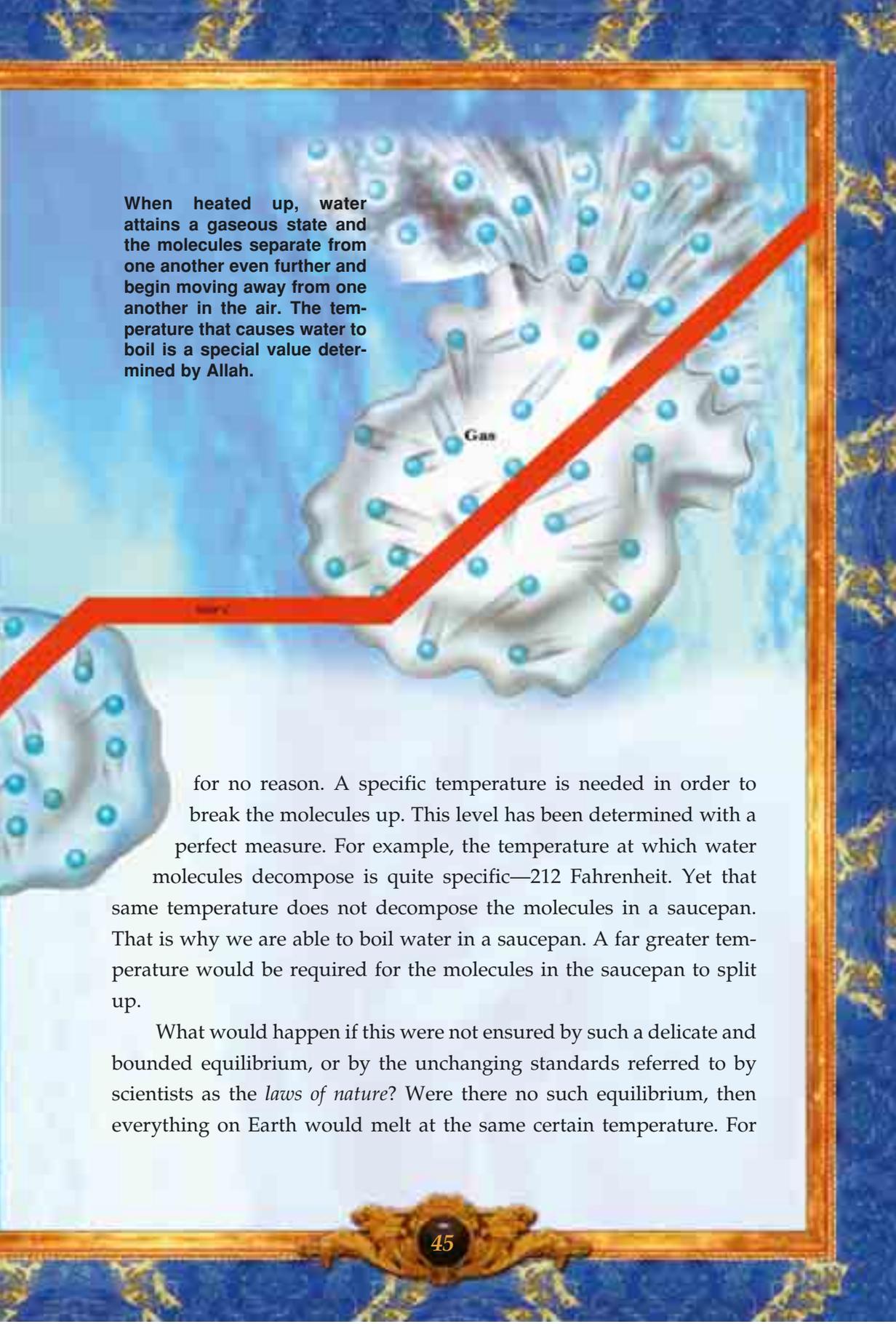
Why do your hands become warmer when you rub them together? Why do two sticks smolder when you rub them swiftly together? The molecules begin moving faster. The feeling of heat in your hands is the result of the energy produced by that movement.

Though molecules are in a constant motion, generally we never perceive this. The molecules in the patterns on your tablecloth are also in motion, but you never see those patterns become impaired or deformed. Your face also consists of molecules, also in motion, but this never leads to any defects arising. Every object on Earth, even the most microscopic, is in constant motion. Yet there is no sign of this to be seen around you.

But molecules' movements are by no means haphazard. The molecules sliding over one another in liquids, moving away from one another in gasses and huddled close up against one another in solids never depart from this order. The molecules that comprise a glass never split away from one another



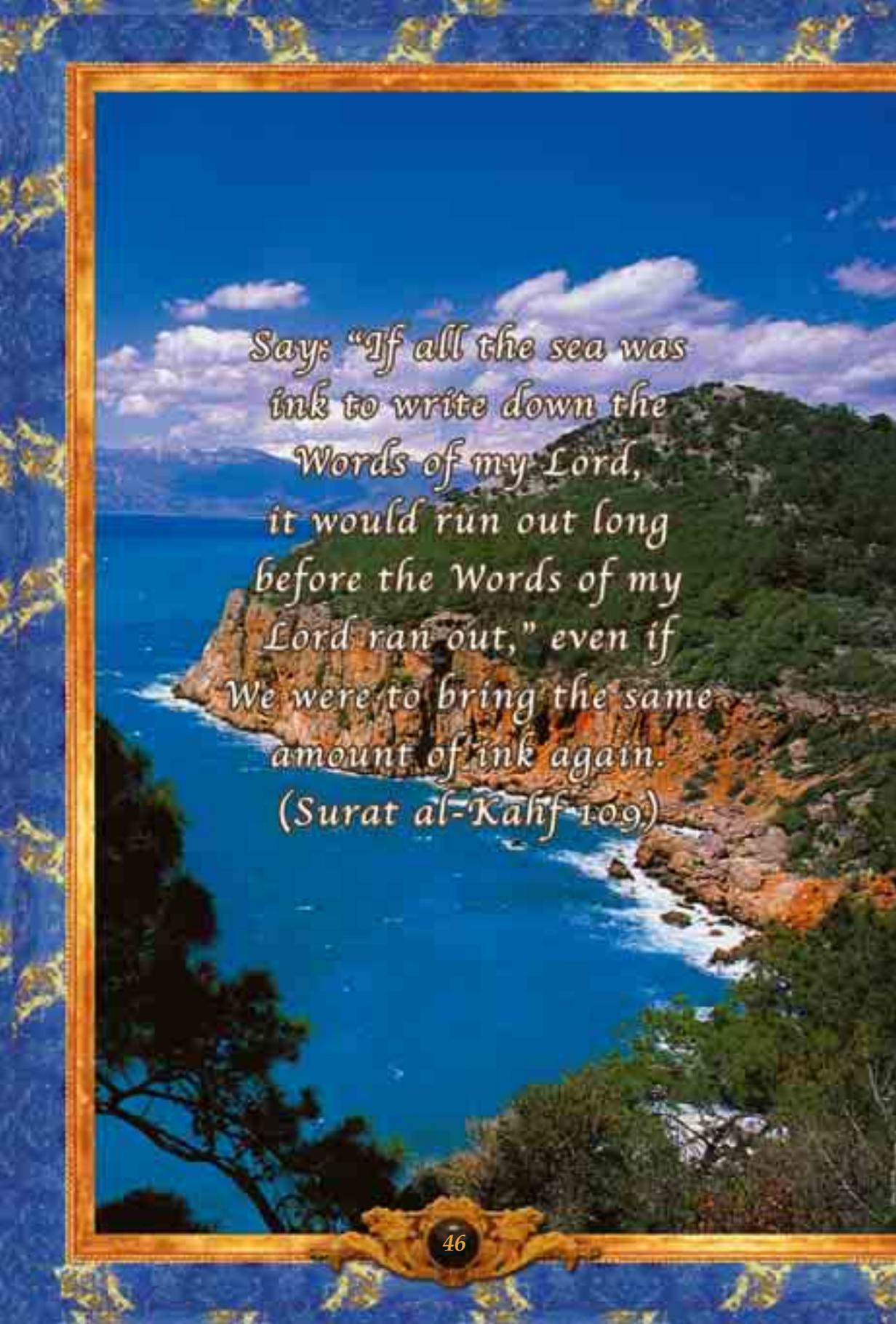
Water assumes a solid form when its molecules are closest to one another. When heated, it turns into a liquid and the molecules slip over one another due to their increased motion.



When heated up, water attains a gaseous state and the molecules separate from one another even further and begin moving away from one another in the air. The temperature that causes water to boil is a special value determined by Allah.

for no reason. A specific temperature is needed in order to break the molecules up. This level has been determined with a perfect measure. For example, the temperature at which water molecules decompose is quite specific—212 Fahrenheit. Yet that same temperature does not decompose the molecules in a saucepan. That is why we are able to boil water in a saucepan. A far greater temperature would be required for the molecules in the saucepan to split up.

What would happen if this were not ensured by such a delicate and bounded equilibrium, or by the unchanging standards referred to by scientists as the *laws of nature*? Were there no such equilibrium, then everything on Earth would melt at the same certain temperature. For



Say: "If all the sea was
ink to write down the
Words of my Lord,
it would run out long
before the Words of my
Lord ran out," even if
We were to bring the same
amount of ink again.
(Surat al-Kāhif 109)

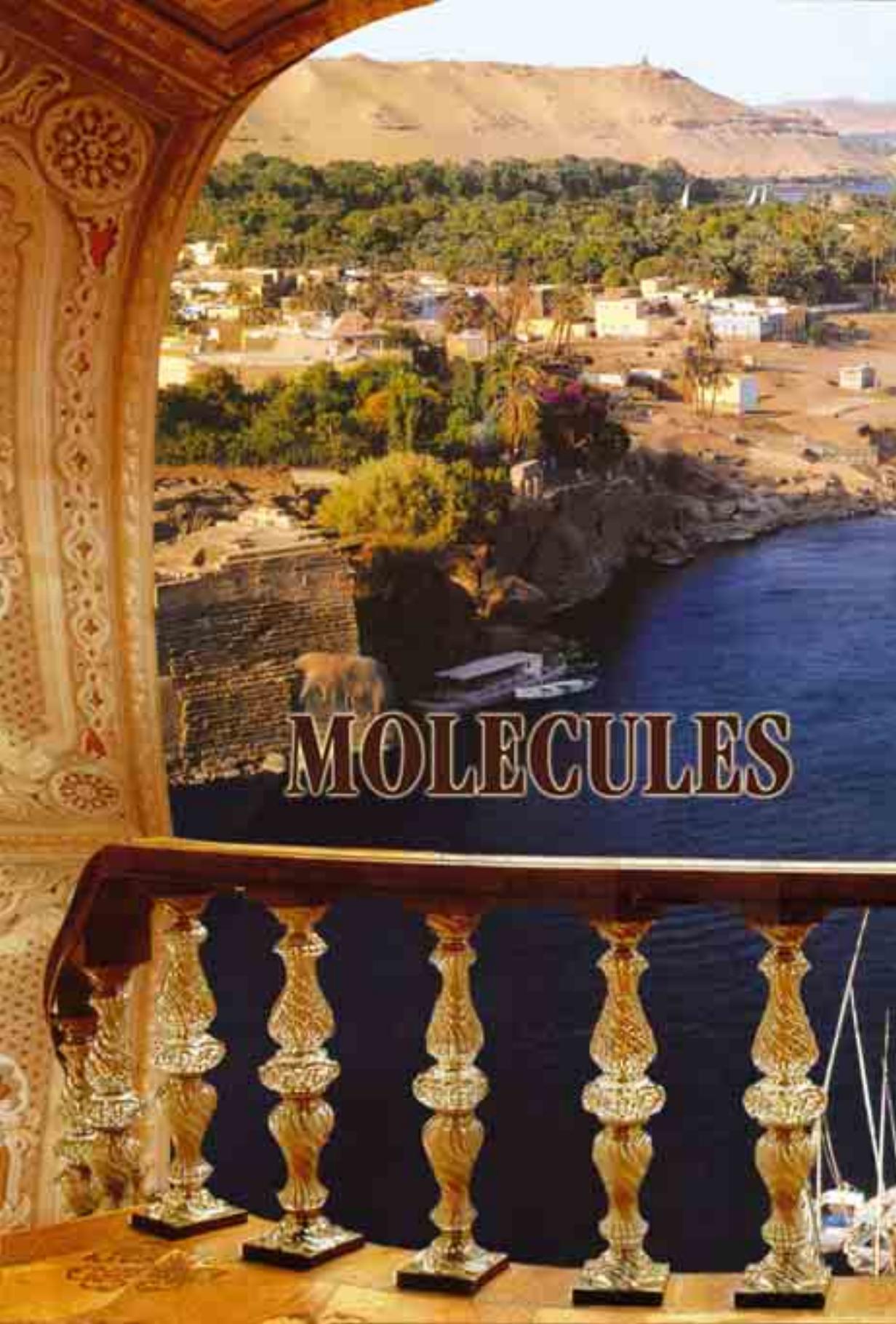


The molecules comprising a substance never separate from one another for no reason. A specific temperature is required to separate molecules. The temperature for the evaporation of water helps maintain the water cycle that permits the amount of fresh water in the world to remain stable. This recycling of water is created by Allah to maintain life on Earth.

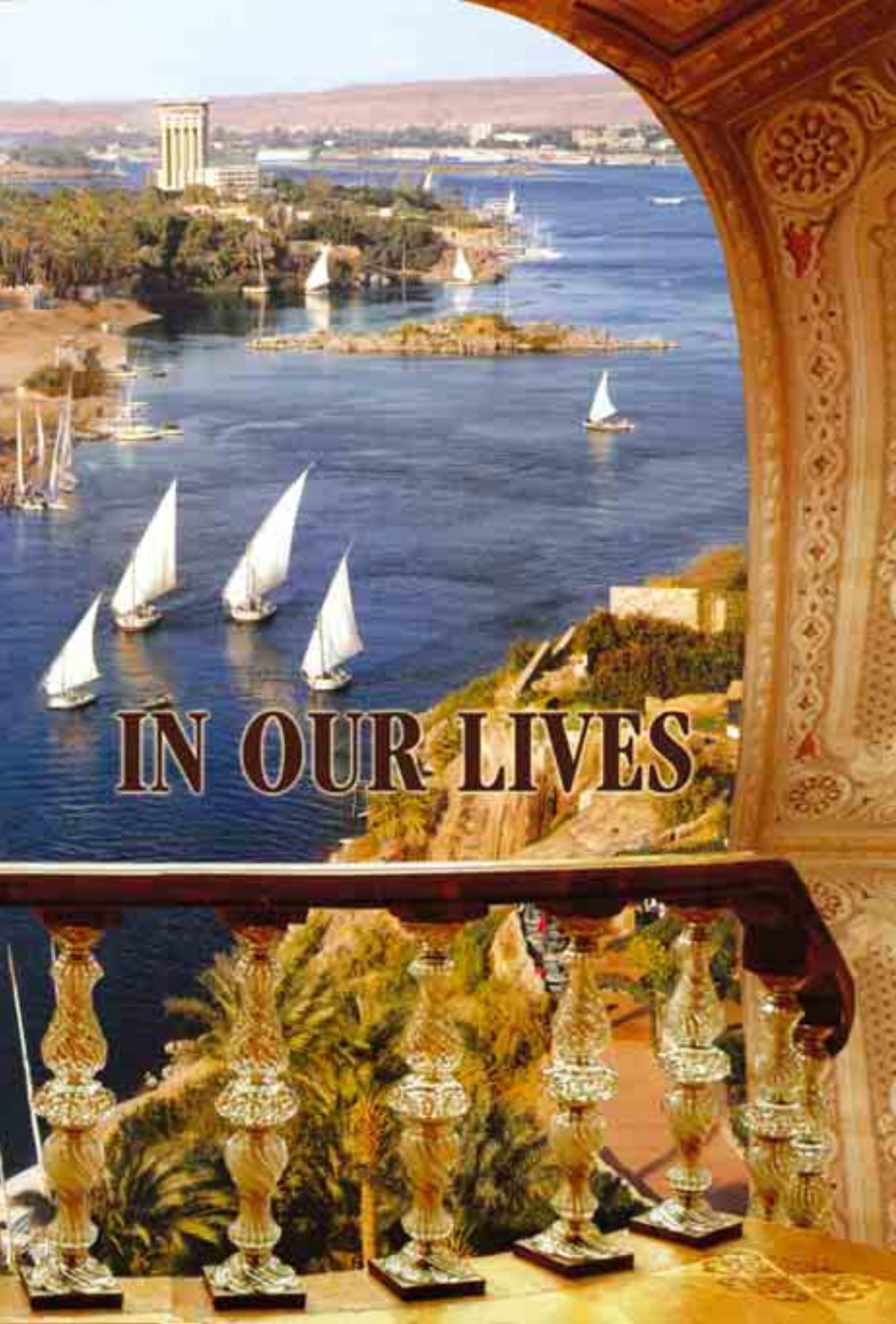
example, if everything were affected at the same temperature at which water boils, then nothing, the proteins and cells in our bodies included, could remain stable. Yet we never encounter such a danger, because everything in the universe has a determined balance and measure. The fact that water evaporates when it reaches a specific temperature makes this molecule vitally important. The water cycle on Earth is the result of this specially created system of evaporation and condensation.

Every molecule possesses a feature establishing its state at this very moment. This, of course, is a sign of the might of Allah, Who has determined a measure for all things and Who has created every measure in harmony with all others. In one verse, He reveals:

... He encompasses what is in their hands and has counted the exact number of everything. (Surat al-Jinn: 28)



MOLECULES

A scenic view of a river, likely the Nile, seen through an ornate, golden archway. The river is filled with several white-sailed sailboats. In the background, a cityscape is visible, including a prominent building with four columns. The foreground shows a balcony with ornate, golden balustrades. The text "IN OUR LIVES" is overlaid on the image in a stylized, serif font.

IN OUR LIVES

W

e live in a universe consisting of combinations of molecules. Some, such as methane or hydrogen, are smaller and simpler. Others, like the so-called organic molecules, have exceedingly large and complex structures. Some are responsible for smell and taste. Some drift in the air, while still others give rise to our bodies or the magnificent beauty in the heavens and the depths of the seas.

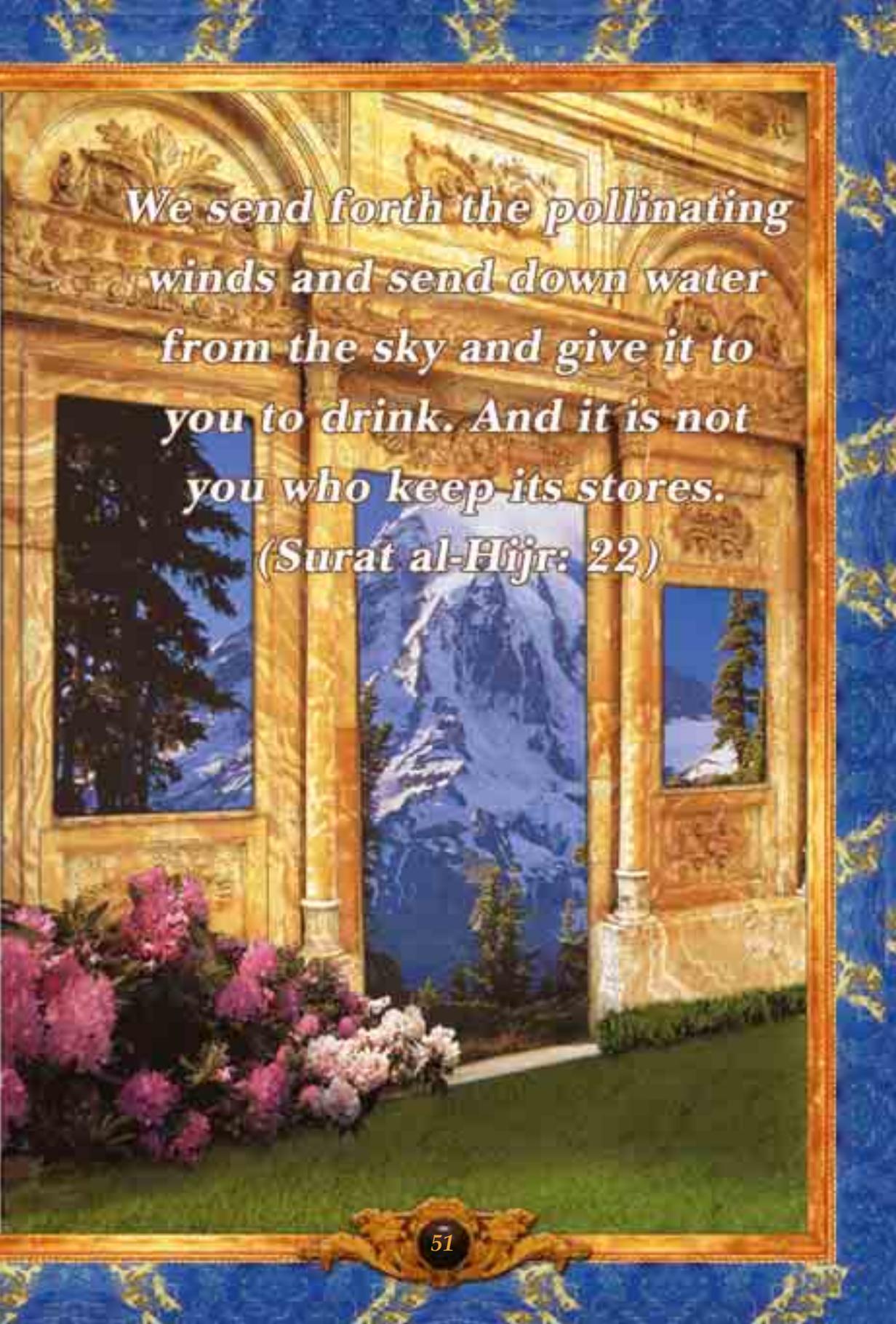
In short, the atoms of the 109 different chemical elements combine in various forms to constitute *everything* around us. The special features of these creations allow very different material properties to emerge. Sometimes a single atom added to a molecule may turn it into a toxic substance. A single atom added or removed can turn an inedible molecule into a nourishing one, or a sharp and sour smell into the delightful fragrance of a rose. The same atoms, if bonded to one another in different arrangements, can change the molecule's color, or solidify a fluid substance. The universe is an arena where this matchless artistry, whose secrets scientists haven't yet totally unraveled, is displayed. The miracles created by Allah in an infinitesimal, invisible world exhibit His infinite knowledge and sublime artistry.

In order to see this artistry up close, we need to examine the features that molecules possess, and how they have been specially created for life to exist.

The Great Miracle of Water

Every molecule in the universe is created with exceptionally delicate balances. Perhaps one of the most important molecules that Allah has created, whose superior characteristics are most essential for our lives, is the water molecule, specially brought into being to ensure the survival of all life on Earth. Let us have a closer look at the water molecule to better grasp this marvel of Allah's superior creation.

The large amounts of water on the Earth are present in three different states: liquid, gas and solid. Of that, 97 percent is too salty, and 75



*We send forth the pollinating
winds and send down water
from the sky and give it to
you to drink. And it is not
you who keep its stores.*

(Surat al-Hijr: 22)



The two seas are not the same: the one is sweet, refreshing, delicious to drink, the other salty, bitter to the taste. Yet from both of them you eat fresh flesh and extract ornaments for yourselves to wear; and you see ships on them, cleaving through the waves so that you can seek His bounty and so that hopefully you will be thankful.

(Surah Fatir: 12)

percent of the fresh water is solidified at the poles. The remaining 1 percent of the total water is drinkable, but most of that is inaccessibly deep groundwater. Thus, only 0.05 percent of the water running through lakes and streams is readily available. Yet even this small quantity is sufficient for living things on Earth to survive.¹³

Significantly, the salt water of all the seas and oceans that comprises 97% of the Earth's water actually serves human beings and other land-dwelling life. As a result of the accumulation in the clouds of water evaporated from the oceans, and that later descends to earth in the form of rain, that fresh water reaches the dry land. The seas and oceans covering more than 70% of the planet's surface are at the ideal levels for this evaporation. Were the amount of dry land any greater, then arid lands and deserts would increase enormously. Were it any less, then the areas remaining would become unproductive for agriculture due to the excessive rain that they would receive.

Allah has created the Earth's land-water ratio at the ideal level to support human life and gives us clean water that we could not acquire unless He so wished. This fact is revealed in a verse:

Have you thought about the water that you drink? Is it you who sent it down from the clouds or are We the Sender? (Surat al-Waqi'a: 68-69)

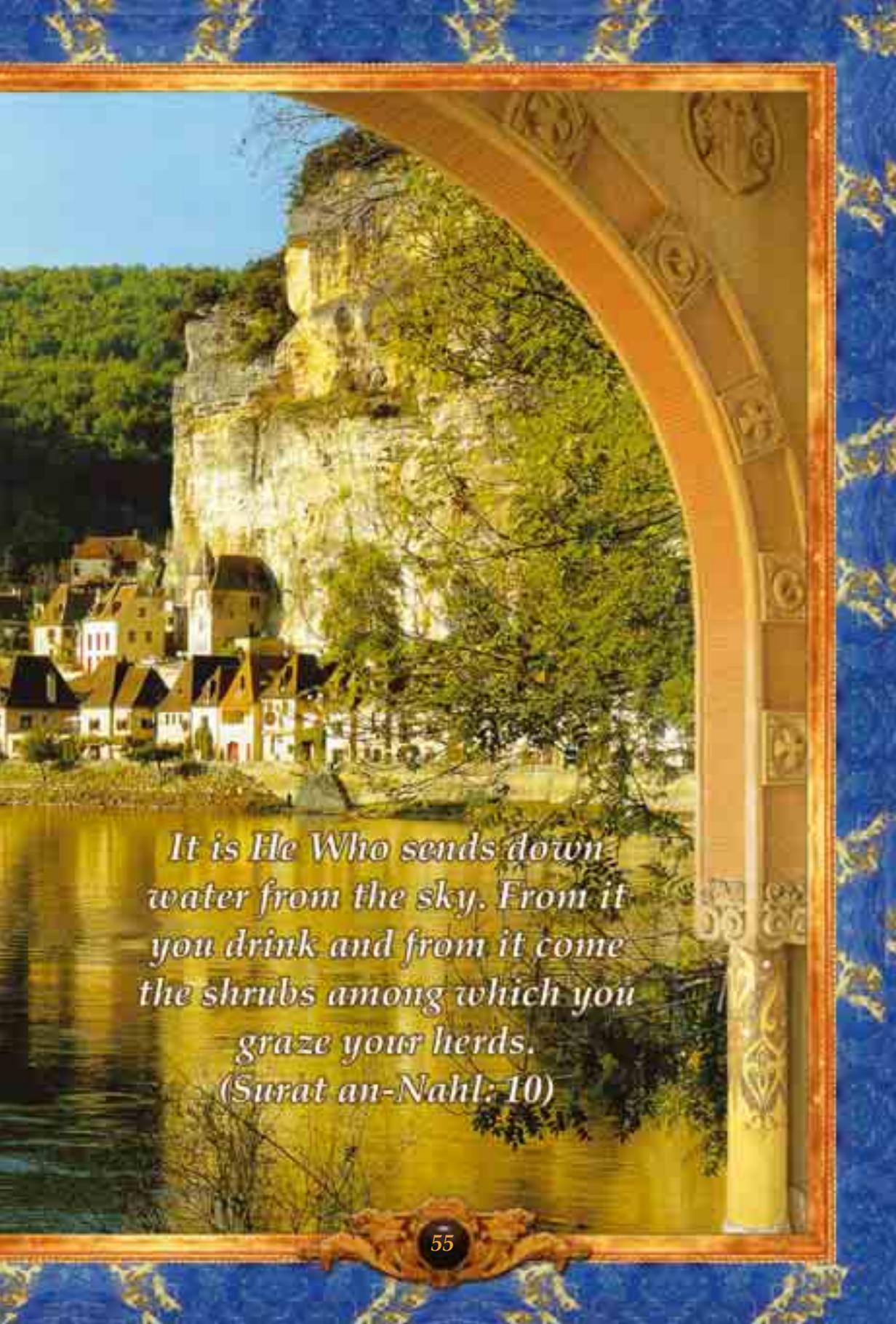
Inside itself and around it, water shelters a great many living species. Even the smallest drop of water may contain hundreds of microorganisms. Water is also found inside living organism, and comprises between 50% and 95% of all the bodies of all living things.

The way that water is formed—by the coming together of two hydrogen atoms and one oxygen atom—is just as thought-provoking as its features and uses. It is actually rather difficult for these two atoms to come together in such a way as to form water. When you bring hydrogen and oxygen atoms together in a controlled environment like a test tube, you cannot see them suddenly combine into water molecules. You could not achieve such an outcome even if you waited for hundreds of

years. Water would appear in the tube only after thousands of years, and then in only very small quantities. And that is still a remote possibility.

So how can we obtain such a vital necessity for life? As you know, a high level of energy—therefore, a high temperature—is necessary for certain molecules to come into being or undergo changes. The same applies to water. In order for two molecules of hydrogen (H) and one of oxygen (O), to combine together and form water, they need to contact one another. During that process, the chemical bonds that form the hydrogen and oxygen molecules weaken, and the atoms link up in such a way as to create a new molecule: water. At present, the temperatures on Earth are too low to permit any possibility of new water formation. The water currently on Earth is at a level formed as a result of the high temperatures during the birth of the planet.¹⁴ That amount can never change. Under the effect of differing temperatures, water can be found in three different states. Solid-state water appears in the form of giant polar icecaps, where it seems to have been especially reserved. The water we use eventually evaporates and rises into the air in its gaseous state, and returns to Earth in a liquid form—rain. Thus the water you drink, use and absorb with the food you eat regularly returns to us in a more purified form. In short, by means of its specially imparted features, we can use the same water over and over again. At Allah's behest, water is constantly bestowed on us in a purified state:

... We send down from heaven pure water so that by it We can bring a dead land to life and give drink to many of the animals and people We created. (Surat al-Furqan: 48-49)



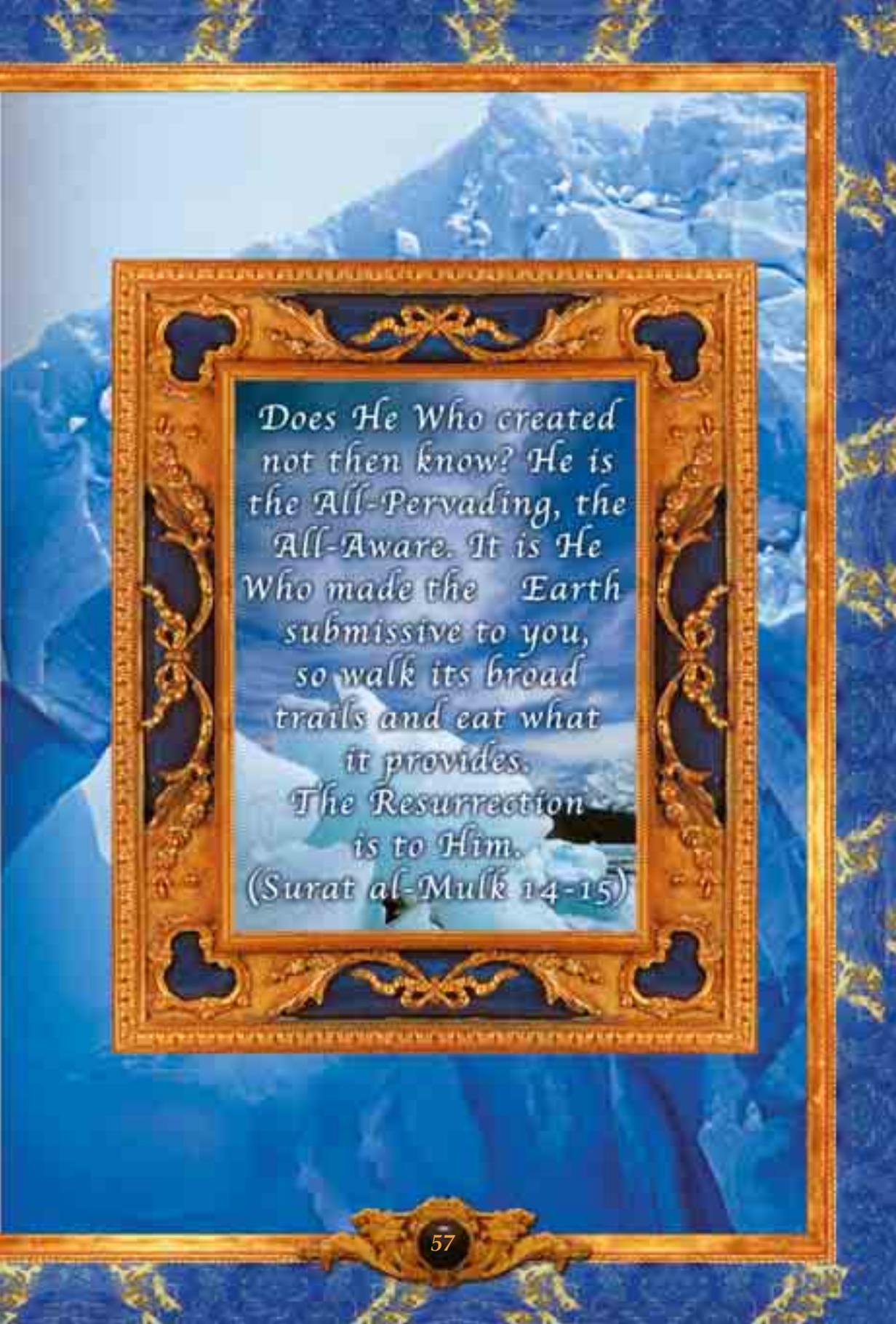
*It is He Who sends down
water from the sky. From it
you drink and from it come
the shrubs among which you
graze your herds.
(Surat an-Nahl: 10)*

THE SOURCE OF THE MIRACLE OF WATER: HYDROGEN BONDS

At room temperature, water is a familiar liquid. But this is most interesting, because under normal conditions, we would expect water to be in a gaseous state, like other small molecules such as ammonia and methane. Water's liquid nature stems from the small hydrogen atoms, and the hydrogen bonds between water molecules. As you know, covalent bonds hold a water molecule together, but one water molecule attaches to another via a hydrogen bond. As already stated, hydrogen bonds are exceedingly weak, and the duration of a hydrogen bond is approximately one hundred billionth of a second. However, the breaking of the bond does not destroy the assembly of water molecules, because when one bond is broken, another new one immediately forms. As a result of this constant renewal, water molecules cannot adhere to one another, but are viscous. As a final result, instead of forming a gas in which molecules move independently, water molecules group together as a moving liquid. This property of water, so different from that of similar molecules, is one of the basic necessities of life.

The weak hydrogen bonds between water molecules also results in the different densities of liquid water and ice. Almost all known substances are denser as a solid than in their liquid form in. For example, under normal conditions when you drop lumps of iron into molten iron, the solid lumps will sink to the bottom. Yet with water, this does not happen because ice, water's solid state, is less dense than liquid water. When water freezes, every molecule grips tightly onto its neighbor because of the hydrogen bonds, but the distance between these molecules remains quite large. Therefore, gaps remain between the bonds, and the structure of water in its solid form contains more empty space than its liquid counterpart, making it less dense.¹⁵ As a result, when you drop ice cubes into a glass of water, the ice inevitably rises to the surface—as do icebergs in the ocean.

This characteristic of water is of the greatest importance for life. Due to this effect of the hydrogen bonds, bodies of water always start to freeze from their surface down. In winter, ice forms on the upper layers



Does He Who created
not then know? He is
the All-Pervading, the
All-Aware. It is He
Who made the Earth
submissive to you,
so walk its broad
trails and eat what
it provides.
The Resurrection
is to Him.
(Surat al-Mulk 14-15)

of lakes and seas, and the mass of water beneath the ice remains in a liquid state. As a result of this, thousands of water-dwelling organisms are able to survive. At the same time, the ice at the surface also acts as a protective layer that insulates the underlying water and keeps it from growing too cold. The mass of water below chills to no colder than 4°C (39°F), which temperature lets marine organisms survive. This is another special creation brought into being for living things. If ice were denser than water, lakes and oceans would begin to freeze from the bottom, and with no insulation, would freeze right up to the surface. A large part of Earth's northern seas would consist entirely of ice, and aquatic life would come to an end.

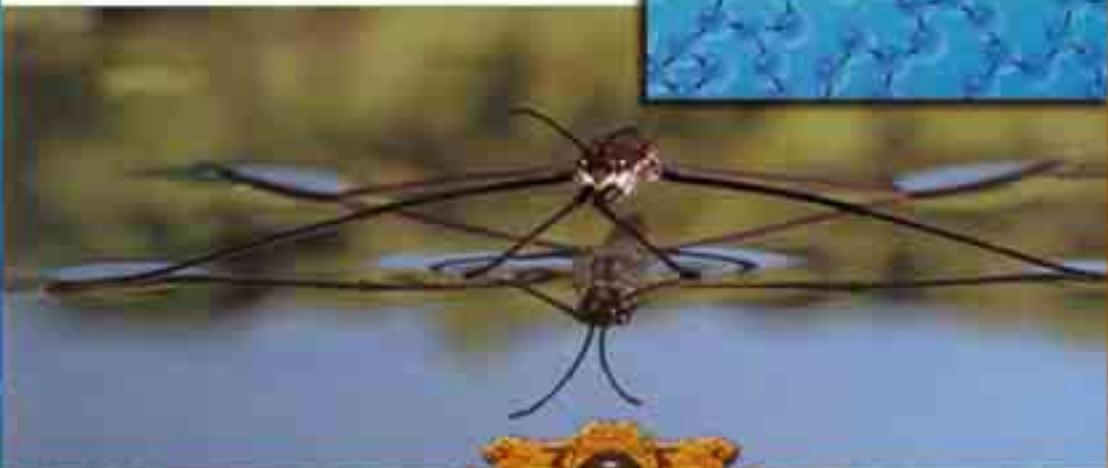
Under the effect of hydrogen bonds, bodies of water always begin to freeze from the surface. This means that all living things under the ice have a shelter in the winter. Water in the lower levels chills to no less than 4 degrees Celsius (39.2 degrees Fahrenheit). By means of this special balance created by Allah, living things in the water underneath can survive the winter.



Water has other important properties. For example, when you gently place a very light shaving of metal on still water, you'll see that it remains on the surface, rather than sinking to the bottom. Also, certain insects are also able to walk across water without difficulty. Metal is heavier than water, as are many insects,¹⁶ so how can they remain on the surface in this way? The reason, once again, points to water's being deliberately created. The hydrogen bonds that hold water molecules together give rise to surface tension, which arises when molecules on the water's surface establish bonds amongst themselves and also with molecules beneath.¹⁷ For an insect's legs to sink down into the water, some of these hydrogen bonds must be broken. If water lacked these properties, then fish would require a large amount of energy in order to be able to swim, and there might not be the same variety of species living in water than there is now.

These properties of water, which are so familiar but seldom reflected on, are a great blessing from Allah. Water acquires such characteristics, and living things are able to survive on it and in it because Allah so wishes. Allah has set out this fact in a verse:

The molecules on the water surface establish hydrogen bonds with one another and also with those beneath, giving rise to *surface tension*. Some of these hydrogen bonds need to break in order for a light insect to sink beneath the water's surface.

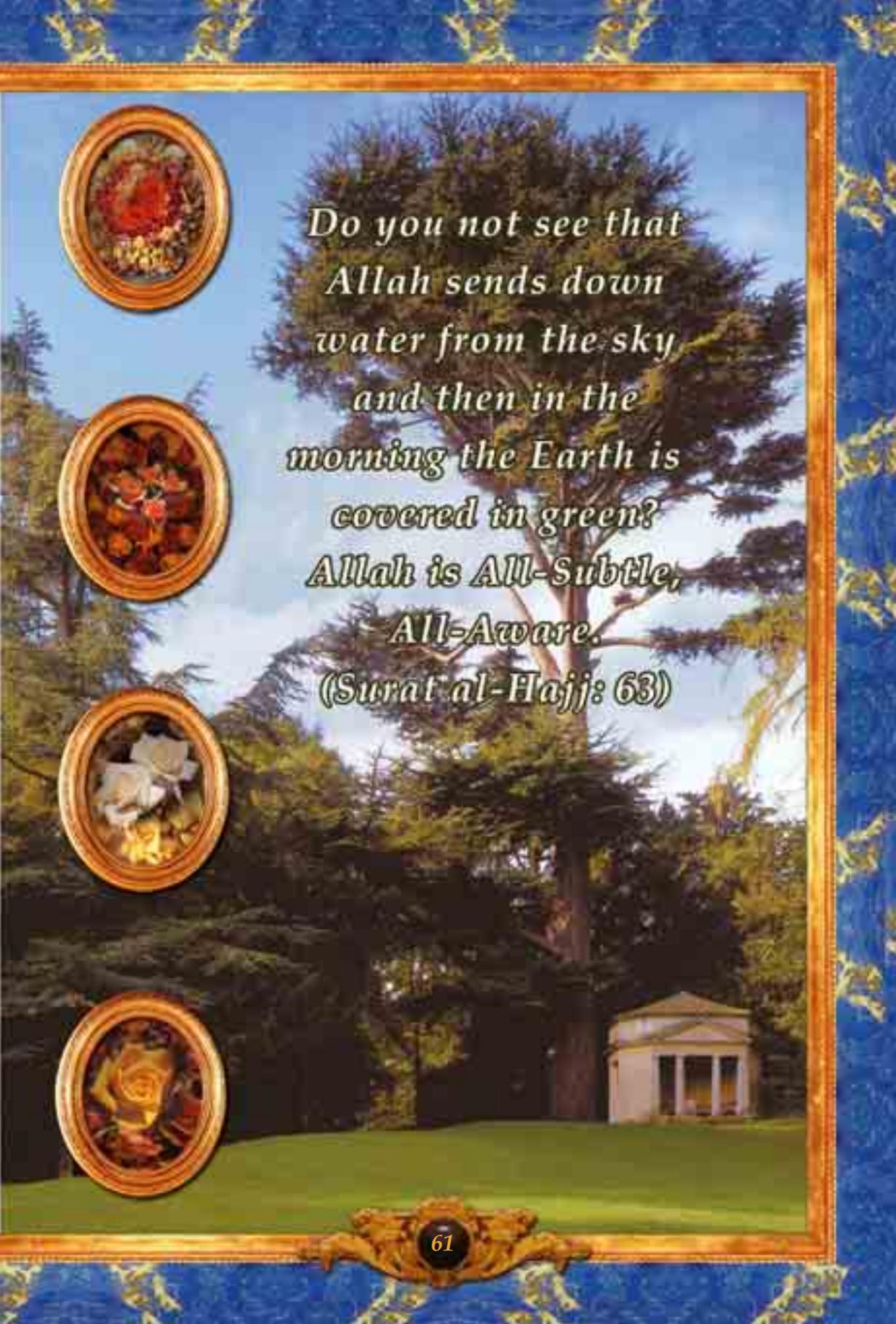


Allah is He, Who created the heavens and the Earth and sends down water from the sky and by it brings forth fruits as provision for you. He has made the ships subservient to you to run upon the sea by His command, and He has made the rivers subservient to you. (Surah Ibrahim: 32)

The force that helps a tiny green grass seed emerge from the soil, and lets giant trees grow several hundred meters (or several hundred feet) tall, is again closely related to the miraculous properties of water. Due to its molecular property and method of bonding, water enters a plant's roots and extends upward along very narrow tubes inside. The water's ascent may sometimes be tens of meters (hundreds of feet), may divide into dozens of branches and twigs. This property of water, which other liquids could not accomplish so easily, is known as capillary movement. At the same time, water is capable of being absorbed. As soon as it comes into contact with substances like wood or gelatin, it is able to penetrate them.¹⁸ The way that seeds begin sprouting swell up by absorbing water also stems from this property of water's being absorbable. If not, even though there were water and seeds under the ground, then there would be no trace of the plant kingdom and all life on Earth would disappear.

Because of the weak hydrogen bonds that bring water into existence, this miraculous molecule is able to exhibit heat resistance. If the air temperature suddenly rises, water's temperature increases more slowly. In the event of any sudden drop in air temperature, water temperature falls slowly, and does not cool down as much as the air does.¹⁹ This physical behavior is actually a marvel of creation. If water did not possess such an "insulating" property, then water-dwelling organisms could not withstand sudden violent temperature changes, and would soon die off. Moreover, we would also be affected. Since water constitutes around 70% of our bodies, we would be immediately affected by the temperature, and become swiftly chilled or overheated.

Water is also an ideal perfect solvent. A great many substances (sugar in particular) dissolve easily in water because they can build



*Do you not see that
Allah sends down
water from the sky
and then in the
morning the Earth is
covered in green?
Allah is All-Subtle,
All-Aware.
(Surat al-Hajj: 63)*

hydrogen bonds with it. Molecules such as salt or minerals, joined with ionic bonds, can also dissolve easily in water. Its solvent property is also very important to our own bodies; it creates a perfect vehicle to transport nutrients to our cells. At the same time, water at body temperature is an ideal liquid for the movement of molecules inside the cell. Despite its solvent properties, however, water cannot dissolve calcium phosphate, so that your own body fluids do not dissolve the bones of your skeletons.²⁰ This special molecular structure that constitutes your bones is made up in a particular way to withstand the solvent property of water.

Different molecules assume different forms inside your body, itself the result of the multiplication of a single cell, to bestow different features on you. While all these anatomical changes were taking place, how could molecules themselves have decided that those to be transported inside the cell should be soluble in water but that your bones should be resistant? How can cells know that nutrients need to dissolve in water? It is of course illogical to expect any cells to be familiar with molecules, know their appropriate levels of solvency, and take precautions beforehand to ensure the ideal metabolism.

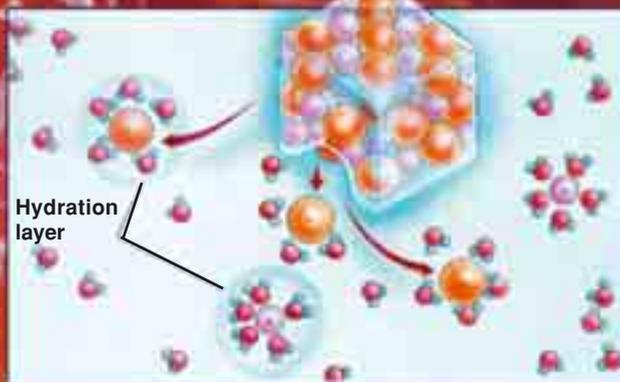
These are Allah's sublime creation. Allah has created all these properties possessed by a human fetus, who begins to grow inside his mother's womb, and all the molecules in that body. This is revealed in another verse:

Allah – Him from Whom nothing is hidden, either on Earth or in heaven. It is He Who forms you in the womb however He wills. There is no god but Him, the Almighty, the All-Wise. (Surah Al 'Imran: 5-6)

Only since the 20th century we humans have been able to investigate the substances that comprise the universe at the molecular level. Water, however, was set out in perfect quantities when this Earth was coming into being and intelligently created with all the ideal attributes for the formation of life. It's a miracle whose detailed properties scientists have only recently discovered. However, Allah created water and



Water is a special liquid in which molecules are able to move with ease. Despite being a solvent, water does not dissolve the skeleton. Allah has combined the calcium and phosphate molecules that comprise our bones in a special way so as to protect them against the dissolving properties of water. As a result of this perfect creation, the moisture in your body does your bones no harm.



The hydration layer that forms with hydrogen bonds prevents sodium and chloride ions combining together, so that these two molecules are unable to form salt.

Bone tissue

equipped it with the ideal properties for living things long before the first living organism came into existence. The fact that all of water's properties arise from what is inherent in two atoms of hydrogen and one of oxygen shows the flawless depth of detail in His sublime creation. Allah reveals in one verse:

In the creation of the heavens and Earth, and the alternation of the night and day, and the ships which sail the seas to people's benefit, and the water which Allah sends down from the sky—by which He brings the Earth to life when it was dead and scatters about in it creatures of every kind—and the varying direction of the winds, and the clouds subservient between heaven and Earth, there are Signs for people who use their intellect. (Surat al-Baqara: 164)

THE ADDITION OF ONE EXTRA OXYGEN ATOM CAN TURN WATER POISONOUS

At specific heat and energy levels, the three atoms that make up a water molecule can combine with a second oxygen atom, transforming the formula H_2O into H_2O_2 . This seemingly minor alteration changes all the molecule's chemical properties. When it takes on another oxygen atom, the beneficial liquid we were formerly able to drink easily turns into hydrogen peroxide, a substance with entirely toxic properties.

Hydrogen peroxide is a powerful oxidant that destroys or severely damages any organic compounds that come into contact with it. Because of its toxic effect, it plays a role in forming fog and pollution in the air. Due to its powerful chemical effects, it is also effective bleach, oxidizing and eliminating pigments such as melanin, which are responsible for black, brown and sandy colors. In dilute solution, this substance is used to turn dark hair blonde.²¹

By itself, the way that atoms produce molecules with a wide variety of features shows a most sublime artistry. However, for a single atom to turn a molecule from entirely useful to entirely harmful, and into a toxic product from one necessary for life, is astounding. What this marvel means is that when Allah so wishes, He can create new properties

by means of a single atom, invisible to the naked eye. The enormous chemical difference that develops from the tiny atomic difference between water and hydrogen peroxide shows evidence of a superior creation, the likes of which cannot be imitated in any way. Chance can never account for the formation of this immaculate structure, in which a single atom added to a molecule changes all its properties. Such fine-tuning can only exist under the control of a superior Will that belongs to Allah, Lord of the Worlds.

Carbon, the Basic Building Block of Life

When you look around, you realize that everything on Earth has been specially created for life. On the molecular level, this fact manifests itself even more clearly. In a realm in which atoms invisible to the naked eye combine together, everything is without flaw. Take the element carbon for example. In many ways, carbon's being different from the other elements has made it indispensable to life. Carbon is the sixth element in the periodic table and constitutes the basis of a great many things, from car tires to the natural gas we use, and from the meat we eat to the DNA in our cells.

The atoms comprising water combine with another oxygen atom at specific energy and temperature levels, to form a molecule with the formula of H_2O . This might appear to be only a small change. Yet this newly added atom turns water, which we can use for drinking, into hydrogen peroxide, a toxic and harmful liquid.



Hydrogen peroxide

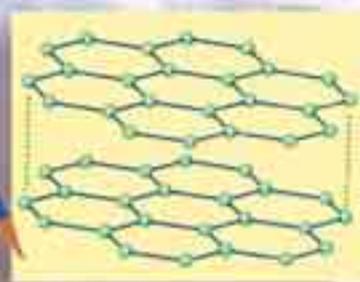


It is presently calculated that in the world, there are several million different compounds, brought together in different ways. They may consist of only two atoms combining together, or else of chains and structures of millions. Interestingly, however, each element has the property of giving rise to its own *unique* compound. Some elements never combine with others; others give rise to only one or two compounds. Yet the element carbon is totally different, in that all by itself, it is able to combine in more than a million different kinds of compounds. Bearing in mind that the total number of compounds on Earth is 2 million, you can see that the other elements apart from carbon give rise to a total of only 300,000 compounds.

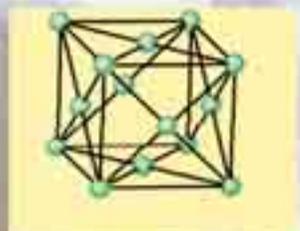
When you mix another color with white, the result is always a completely new shade. When you add a third color, the variety of possible colors rises still further. Some colors, however, produce new colors only when added to specific ones. And black swallows up whatever color you mix with it. Apart from a few exceptional cases, you cannot obtain a new color from black. In chemical terms, carbon rather resembles the status of white. It can form compounds with just about every other atom or molecule in nature and give rise to new substances of the greatest importance to life. This means that carbon is a great marvel of creation.

Particularly interesting is the fact that this vitally important element exists in relatively small quantities. By weight, carbon comprises only 9 to 10 percent of the composition of all living things, and only 0.017 percent of the composition of the Earth.²² Despite its small quantities, however, carbon is present in every part of your life, including in your own body, and cannot be replaced by any other element.

The way that carbon can easily combine with other elements stems from the bonds it establishes with them. By means of its molecular properties, carbon can add the same kinds of atoms to one another and also combining different types of atoms as well. Most atoms generally can establish bonds only with particular other elements and not others. But carbon also establishes very strong covalent bonds with other carbon atoms. Since these bonds are so very sound and strong, they afford the



*The carbon molecule
in pencil lead*

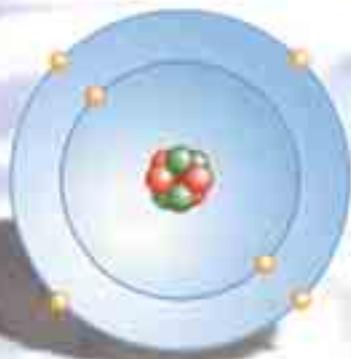


*Configuration of the carbon
atoms in diamond*



COAL

*Both coal and
diamond consist of
forms of carbon.*

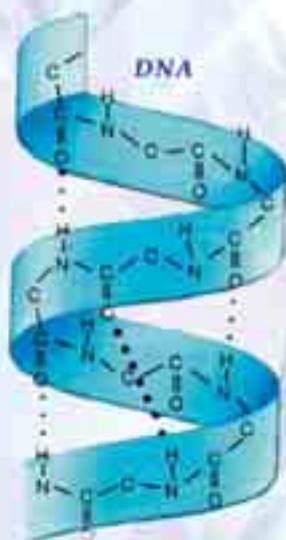


CARBON ATOM



FIZZY DRINKS

*Fizzy drinks contain
carbon dioxide, a gas
that dissolves in the
liquid under pressure.
When the pressure is
released, CO₂ -comes out
of solution and bubbles
are given off.*



DNA

*Carbon is a very special
element created for life.
A great many structures
in the body, including
DNA, are based on
carbon.*



Carbonated foodstuffs

possibility of forming very large molecules. The carbohydrates, proteins and nucleic acids in the human body are sizable molecules resulting from carbon bonds of this kind.

Scientists spent years researching whether there exists any other element that might replace carbon. The element with features most similar to carbon's is silicon, and they therefore assumed that silicon should build the kind of bonds that carbon does. Yet all their experiments were failures: Silicon does not form compounds with other elements in the same way that carbon does, chiefly because of the powerful bonds that carbon establishes with its own atoms. The very powerful bond that forms between two carbon atoms allows the possibility of longer, more stable molecules. Silicon, on the other hand, despite being a very close relative to carbon on the periodic table, was unable to form strong bonds with its own atoms, and the weak bonds it does establish are not appropriate for long chains. In short, no other element in nature is able to replace carbon, once again emphasizing this element's importance.²³

Scientists are still carrying out research of this kind. The discovery of carbon on other planets will enlighten scientists as to whether there once was life on Mars. Despite all the speculation, however, life forms that are not carbon-based are clearly impossible, for a great many reasons.

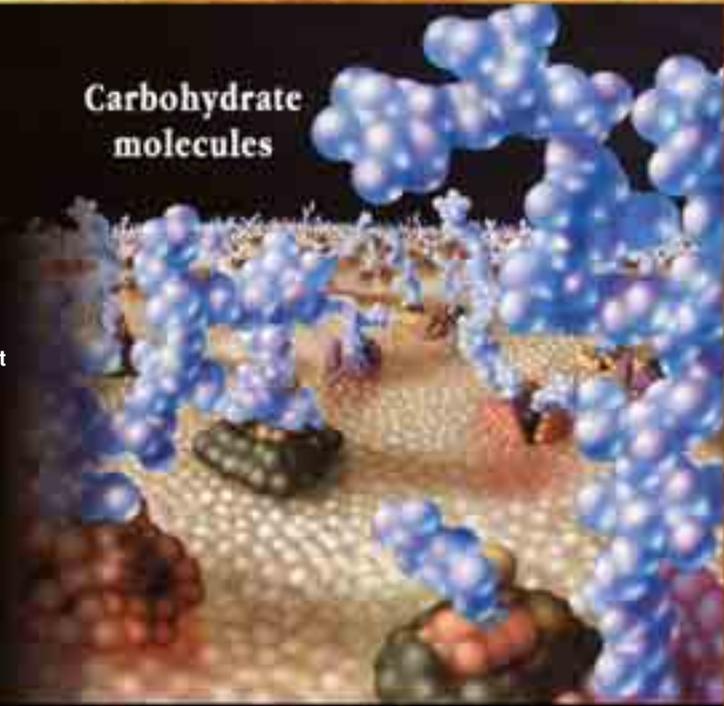
A number of conditions must be met for carbon to form its special organic compounds. That's the main reason why carbon-based life survives on Earth, since ours is the only planet known to possess the right conditions for carbon to give rise to compounds.

For example, the temperature range necessary for carbon to form compounds is between -2° and 120°C (between 28°F and 248°F). Carbon compounds begin to freeze at -20°C (-4°F) and to split apart at 120°C (248°F). In a forest fire, for instance, excessive heat totally alters the structure of tree trunks, and the carbon molecules lose their original structure as these compounds are broken down. The carbonized tree now exhibits a different blackened appearance.

As you have seen, carbon compounds begin to break down outside

Carbohydrate molecules

Carbon can establish strong covalent bonds with other carbon atoms. Since these bonds are very strong and sound, they permit very large and long molecules to form. Carbohydrates are some of the most vital of these molecules.

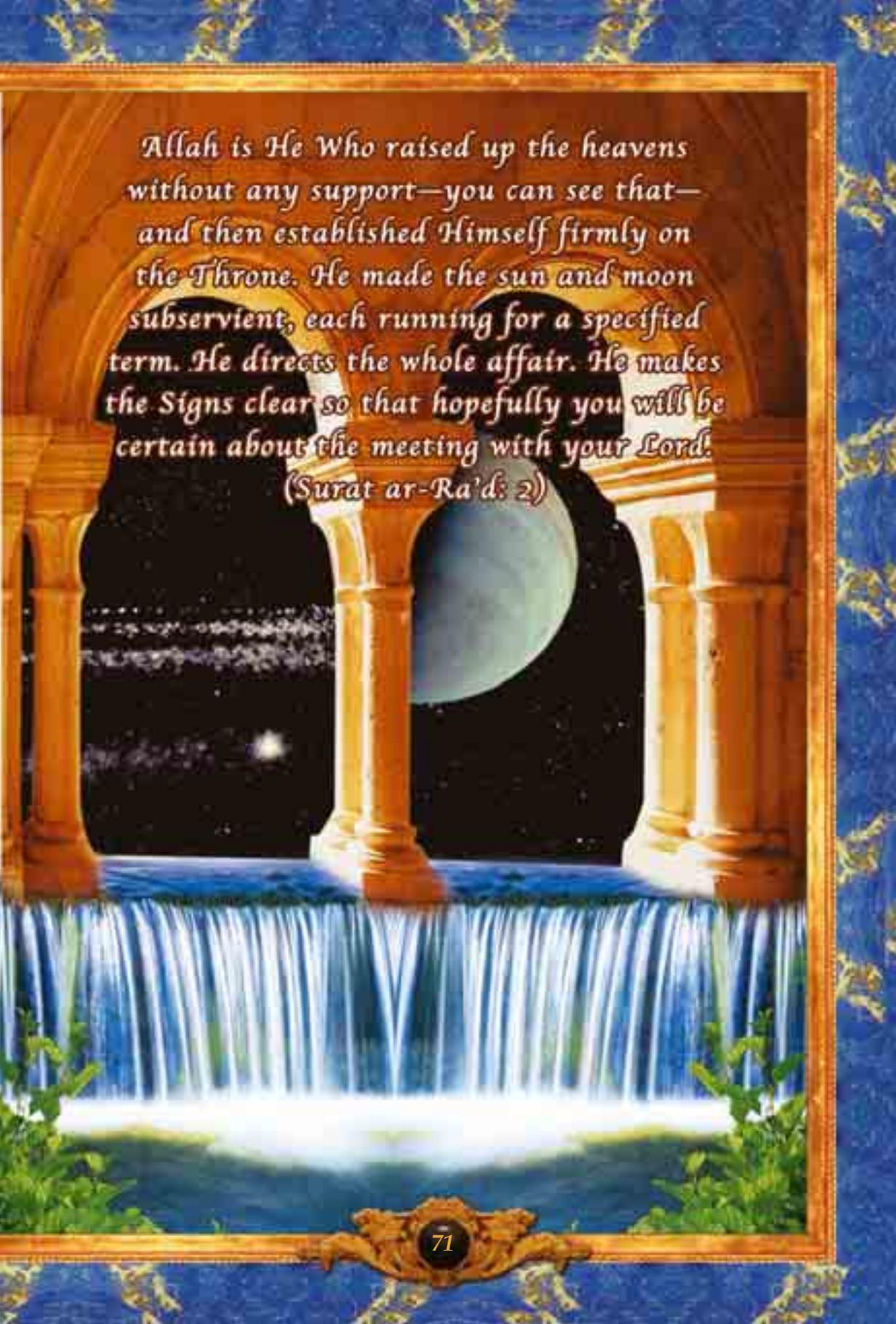


of even a small temperature range. Therefore, if such a change were to prevail over the whole world life would disappear. This is one of the most important proofs that a special creation exists in the world. The temperature range that permits organic carbon compounds to form exists only on Earth. And this is a most narrow temperature range. In comparison, the temperature on Venus—the next planet closest to the Sun in the Solar System, is 450°C (842°F). And on Mars, the next planet after Earth, the temperature is -53°C (-63°F). In such burning heat and freezing cold, carbon cannot form organic compounds. And in space, stars have temperatures of millions of degrees Centigrade (or Fahrenheit), and the temperature in open space itself is -273.15°C (-460°F), or absolute zero.

Within such a stunning temperature variation, only Earth lies within the temperature range suited to carbon-based life forms—a great blessing and evidence of a special creation. The important thing is to comprehend one's need of Allah and to appreciate His greatness by seeing His matchless artistry. Allah reveals this truth in the Qur'an, in the following terms:

Have you thought about what you cultivate? Is it you who make it germinate or are We the Germinator? If We wished, We could have made it broken stubble. You would then be left devoid of crops, distraught: "We are ruined, in fact we are destitute!" Have you thought about the water that you drink? Is it you who sent it down from the clouds or are We the Sender? If We wished, We could have made it bitter, so will you not give thanks? Have you thought about the fire that you light? Is it you who make the trees that fuel it grow or are We the Grower? (Surat al-Waqi'a: 63-72)





Allah is He Who raised up the heavens without any support—you can see that—and then established Himself firmly on the Throne. He made the sun and moon subservient, each running for a specified term. He directs the whole affair. He makes the Signs clear so that hopefully you will be certain about the meeting with your Lord.

(Surat ar-Ra'd: 2)

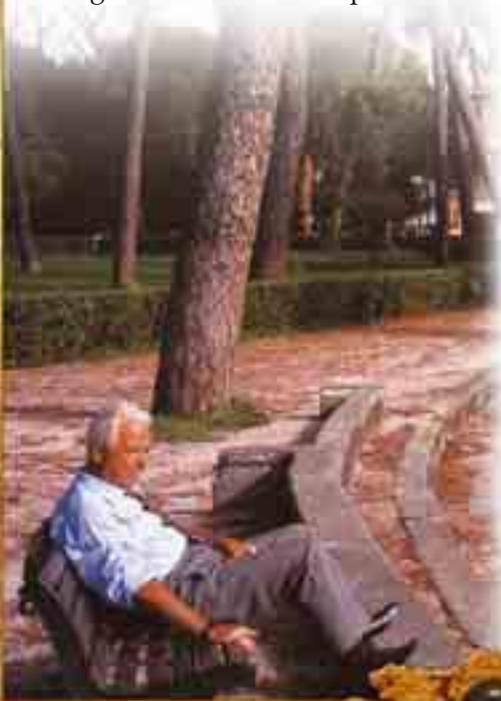
The Molecules That Build the Cell

Your body consists entirely of molecules. Your eyes, hands, brain, muscles, the genes that determine all the physical characteristics, your cells and the proteins that permit those cells to live are all assemblages of molecules. Similar collections of molecules are also present in nature—in the soil, for instance, in stones, rocks and metals. But unlike you, these are not alive. Your body consists of atoms, as does the soil you walk on. So what makes you different from that soil?

A materialist will reply, "The atoms that comprise a human being are better organized. That is the only difference." He will suggest that this organization was carried out by nature itself, during the process he refers to as *evolution*.

In fact, however, such a claim goes against all the observations and experiments performed on this subject, and also flies in the face of logic. Because:

1) In terms of properties, there is no difference between the atoms that make up inanimate objects and those that comprise your body or other living things. Therefore, the fact that one set is better organized does not impart to them any new qualities. As an analogy, think of the subatomic particles such as protons, neutrons and



Your body and the ground you walk on both consist of atoms. This does not mean, however, that the atoms that comprise inanimate substances organize and come to life on their own. Therefore, the origin of living things does not lie in atoms combining together. There is a most sublime intervention, creation and power at the origin of living things—the creation of Almighty Allah.

electrons as individual stones. You can arrange these stones in different patterns—side by side, top one another, or in a line. You can put them all together or separate them, but whatever organization you impose on them will not impart any new qualities to these stones. Even when you come up with a perfect sequence, these stones will not begin to think, speak, or sing. In the same way, the different organization of atoms and the particles that comprise them will not give them any feature that they did not already possess. It cannot bring them to life. It cannot turn them into thinking, speaking living human beings.

Despite the materialists' claims to the contrary, they cannot provide any experimental evidence. In other words, to constitute a basis for their claim, they need to be able to take inanimate matter, organize it, and produce a living entity from it—as they assert took place in the past, when life on Earth first began to appear. In fact, scientists have never managed to do such a thing. And its impossibility is so plain that they have abandoned any attempt to create life from inanimate substances.

In short, the idea that life can emerge through the mere organization of atoms flies in the face of both logic and the scientific facts. All observations and experiments confirm what Allah tells us in the Qur'an:

... Those whom you call upon besides Allah are not even able to create a single fly, even if they were to join together to do it. And if a fly steals something from them, they cannot get it back. How feeble are both the seeker and the sought! (Surat al-Hajj: 73)

2) Additionally, no force or mechanism in nature could organize atoms. The process materialists refer to as evolution has never been observed, and not the slightest evidence for it has ever been found. It is simply a myth. No chemical process, nuclear reaction or physical event has been seen to organize atoms into establishing the complex systems present in living things. Certain chemical phenomena that Darwinists misleadingly refer to as "*self-organization*" (such as crystallization, entropy decrease in open systems, etc.) are in fact merely examples of simple ordering. It is perfectly obvious that these can never account for the origins of the complex systems essential for life. (See Harun Yahya's *Darwinism Refuted*.)

These facts lead to a most important conclusion: It's impossible for the atoms that constitute inanimate substances to come to life, either by evolving or through human intervention. The origin of living things cannot, therefore, lie in these atoms combining. There is a sublime intervention, creation and power in the origin of living things.

This is Almighty Allah's creation. Indeed, in the Qur'an, He draws our attention to the fact that He gives life to inanimate things:

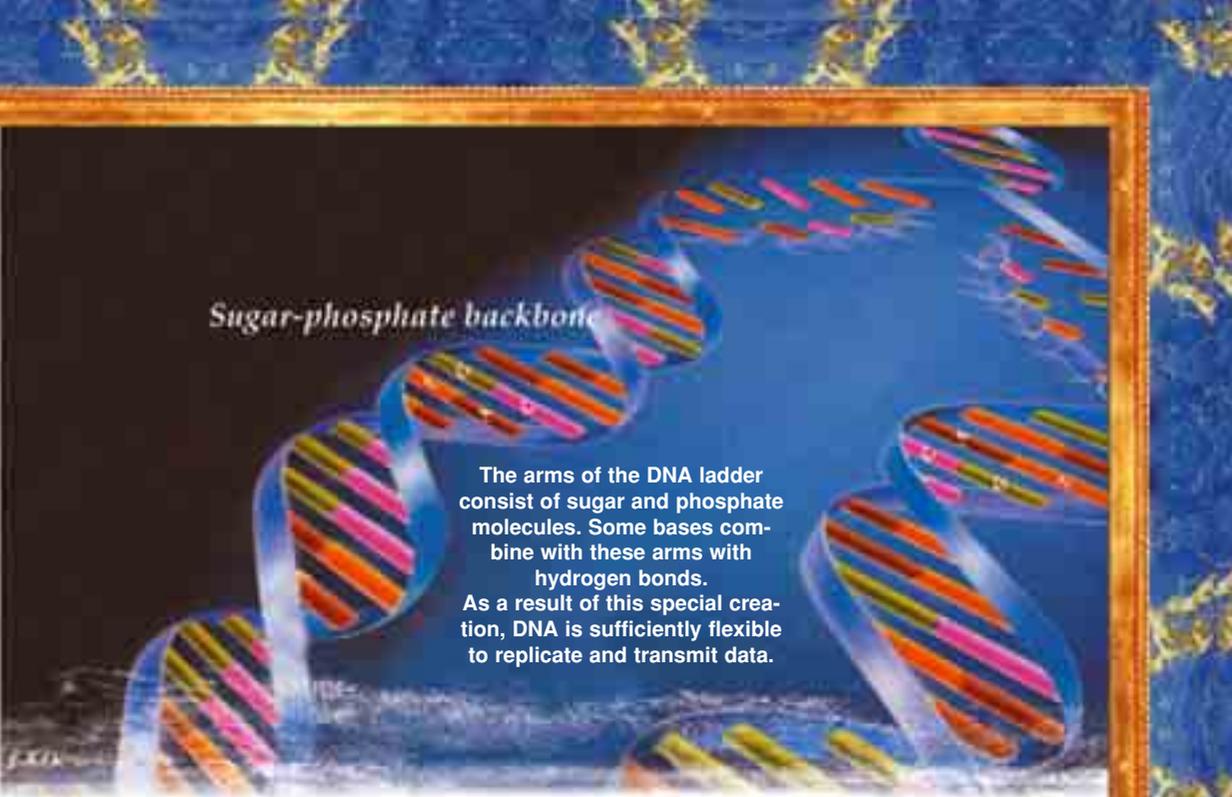
. . . He brings forth the living from the dead, and produces the dead out of the living. That is Allah, so how are you perverted? (Surat al-An'am: 95)

Giving life to inanimate matter is a supernatural event—in other words a miracle, and belongs to Allah alone. Another miracle that belongs to Him alone is the way that one of these living things is given a soul with a high level of special consciousness, in contrast to all the others. That human soul is a blessing from Allah. As is revealed in Surat as-Sajda verse 9, Allah first created the human body and then breathed His Own soul into it.

Therefore, two separate elements make humans human: their bodies composed of atoms, and the souls breathed into them by Allah. Materialists, who imagine that human beings are merely matter consisting of atoms, are put in a terrible impasse by of this belief to which they adhere so blindly.

CAN A MOLECULE CONTAIN INFORMATION?

In order for molecules to have come to life spontaneously, as materialists claim, they would need to combine in a flawless organization, agree to a division of labor among themselves, contain information within themselves, never make any mistakes, know how to perform such functions as digestion and respiration, both flawlessly and constantly, and most important of all, be able to plan and actually *think*. That is because we are dealing with a single molecule, a sublime creation that exhibits a greater intelligence than all the human beings who have ever lived, and possesses information that surpasses human comprehension.



Sugar-phosphate backbone

The arms of the DNA ladder consist of sugar and phosphate molecules. Some bases combine with these arms with hydrogen bonds. As a result of this special creation, DNA is sufficiently flexible to replicate and transmit data.

In every single cell in your body, you have one of these molecules, far more intelligent than you. That molecule is DNA.

The DNA molecule resembles the sides of two spiral staircases revolving around each other in a helix. The "steps" are formed of sugar and phosphate molecules, attached to one another with a rather strong special bond known as the *ester bond*. This bond is a rather strong one. There is no haphazard sequence in the steps, or rungs between the two arms of DNA. The rungs are joined together with a special locking system and have four separate elements: adenine, guanine, cytosine and thiamine. Of these four nucleotides, Adenine and Guanine are large molecules and Cytosine and Thiamine are small. In order for rungs to form in a regular manner, guanine always appears opposite cytosine and adenine opposite thiamine. In this way—since small bases are always opposite larger ones—the distance remains stable at all points, the result being a regular double helix.

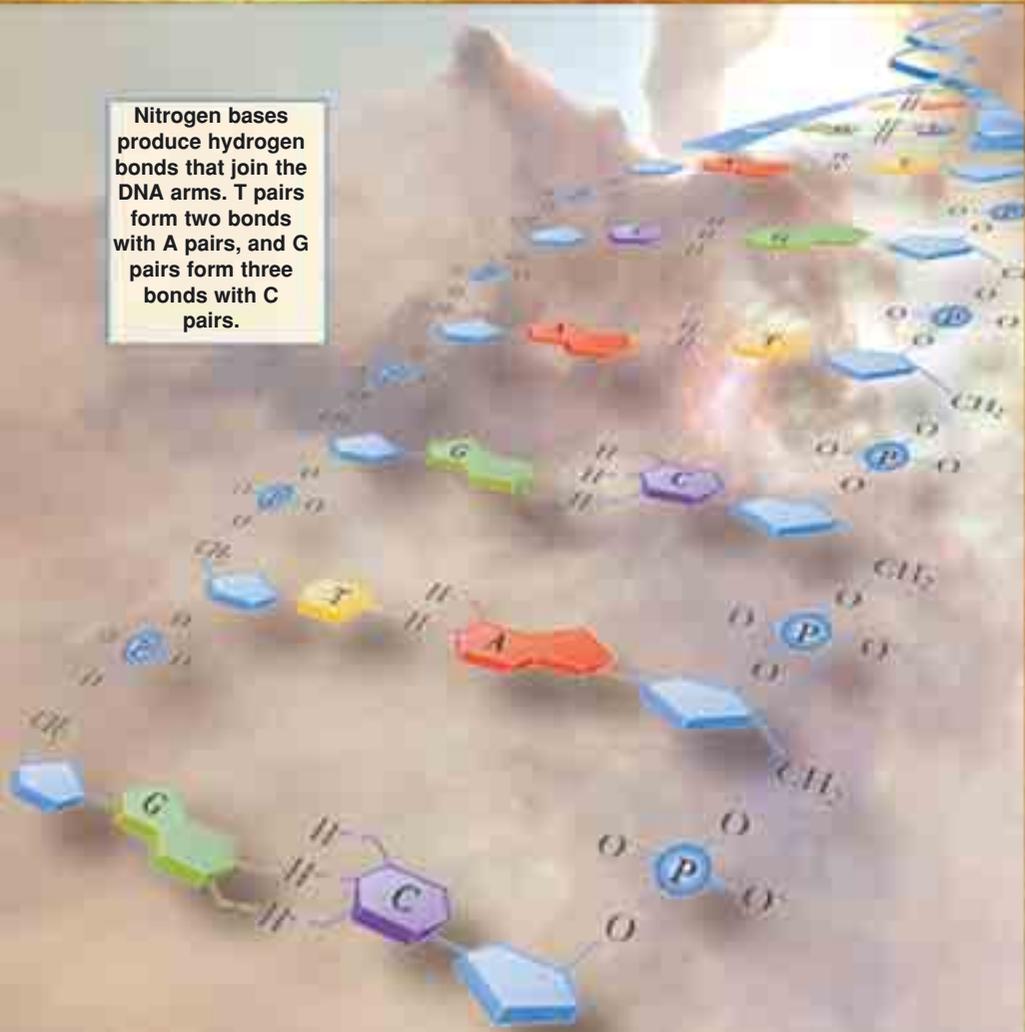
The chemical bond formed among these four contraposed nucleotides is a hydrogen bond, and that the DNA molecule consists of hydrogen bonds is particularly significant. As you'll recall, the distinguishing

feature of hydrogen bonds is their elasticity. Since these bonds are not as strong as the ester bonds binding the nucleotides together, they can easily break in the presence of pH difference, heat or pressure. The importance of the elasticity in the bonds is this: It is possible for DNA to be copied and for genetic information to be transmitted to other cells only by means of this property of elasticity.

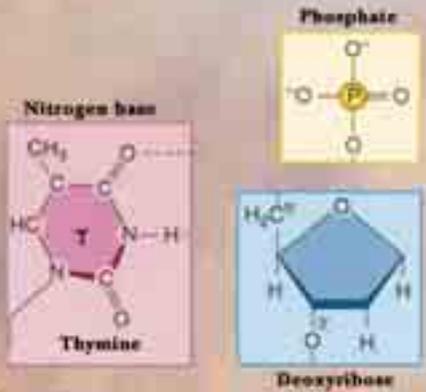
As you know, DNA needs to replicate itself during cell division, so that each "daughter" cell can possess its own identical data bank. Therefore, immediately before the cell divides, DNA produces a copy of itself, first dividing itself down from the middle, like a zipper. In order to replicate itself, the missing halves of both sections are completed with materials ready in the cellular environment, and thus two new DNA molecules result. By means of the elasticity of the hydrogen bonds, DNA can split down the middle during this process. If this DNA helix was attached with a different type of bond, then the "steps" holding the two halves together would be exceedingly hard and inflexible and it would be impossible for DNA to divide in two. Either such a division would not take place at all, or else all the bonds would break when the two parts of the helix exhibited a tendency to separate from one another, and the molecule would break apart. If DNA could not be copied, life would be impossible.

The hydrogen and other bonds that form DNA make the helix exceedingly regular. For this reason, the DNA molecule makes regular turns without being bound to the chain sequence order. The nucleotides that form DNA, being bound to one another with phosphate bonds, produce a backbone in which sugar and phosphate sections follow one another in a series. These bonds, known as covalent bonds, are extremely strong. These bonds make the DNA molecule highly stable and resistant, even when it has only a single-chain structure. While the hydrogen bonds in the middle are able to split away from one another easily, no breaking occurs in the chains attached to the helix at the side, which are attached with covalent bonds. ²⁴

Nitrogen bases produce hydrogen bonds that join the DNA arms. T pairs with A pairs, and G pairs with C pairs.



Due to its hydrogen bonds, the DNA helix is exceptionally regular, and the DNA molecule makes very regular turns. The covalent ester bonds in the backbone give this molecule a strong structure and prevent its breaking or stretching, even though it is tightly folded in the cell nucleus. Through these two different bonds, DNA is sufficiently mobile and strong to perform all its functions.



Mutations, which generally have fatal results or else totally destroy the cell's function, arise from the breaking of these ester bonds among the nucleotides. ²⁵ Within the molecule, however, this binding is so strong that such impairment rarely happens. The enzyme molecules inside DNA immediately act to prevent the possibility of such defects arising. Inside such a complex system, the presence of another protective precaution is a separate and utterly amazing fact.

The human DNA molecule contains enough information to fill a million-page encyclopedia. This information comprises everything to do with you, from the color of your hair to your blood group, from how tall you are to the structure of your bones and the activities of the enzymes that serve your metabolism in a most orderly manner. All this and more is packed into this flawless molecule. But what exactly all this *information* is packed into?



The DNA molecule contains enough information to fill a million encyclopedia pages. This information "explains" everything to do with you. Everything, from your hair color to your blood group, from your height to your bone structure, has been implanted in this data bank—which in fact is a molecule invisible to the naked eye.



The information in DNA is recorded in letters, just like in a book. A book in English consists of 26 separate letters laid out side by side to impart information. The letters in DNA, on the other hand, are the four nucleotides that comprise this giant molecule: The Adenine, Thymine, Guanine and Cytosine are referred to as A, T, G and C for short. When hundreds of these four molecules are taken together, what emerges are long, meaningful "sentences" or *genes*, which describe how processes in the body will be performed, and which encode the needed data for these to occur.

The origin of the data in DNA is another dilemma that materialists cannot resolve. They cannot account for the information encoded in this molecule in terms of any natural mechanism. All observations and experiments show that information derives from a conscious entity. The information in DNA is the work of Almighty Allah, the Creator of all life. Our Lord's creative artistry and infinite might are explained in these terms in verses of the Qur'an:

That is Allah, your Lord. There is no god but Him, the Creator of everything. So worship Him. He is responsible for everything. Eyesight cannot perceive Him but He perceives eyesight. He is the All-Penetrating, the All-Aware. (Surat al-An' am: 102-103)

OTHER LIFE-GIVING MOLECULES

Our bodies are made up of molecules like DNA, having a great many other superior attributes. Just about all the molecules in your body are hydrocarbons, consisting of hydrogen and carbon atoms. In hydrocarbons, the main molecular backbone is formed of carbon atoms, tightly attached to one another by covalent bonds, which make the carbon backbone very strong.

The molecule found in the largest quantities in the body is water, at a level of 55 to 60%, followed by organic (carbon-based) molecules at a level of 30 to 35% and inorganic molecules at 5%. Organic molecules mainly consist of lipids—fats and proteins. Fat and water molecules are inversely proportionate to one another. While one of them increases,

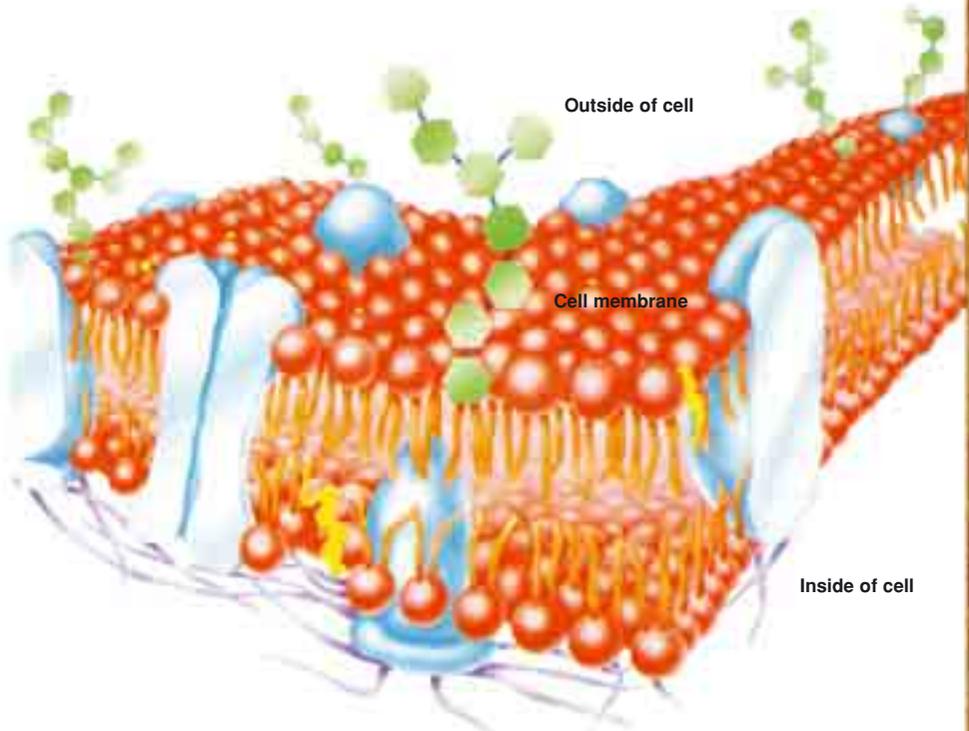
then the other declines.²⁶ All molecules perform important functions in the body, which they discharge completely, inasmuch as the purpose behind their creation is to serve as vehicles for human life.

WATER COMPRISES MORE THAN HALF OF YOUR BODY

The water molecule, of such importance to the world, also reveals its importance in the human body. In the human body, water is distributed in an appropriate and purposeful manner among the various organs and tissues. Not a single organ or tissue in your body does not contain water. While there is only a small amount of water in the teeth and bones, it occurs in much larger quantities in the muscles, the kidneys, the liver, blood, the cornea of the eye, and other "soft" tissues. In fact, 98% of the cornea, 79% of the blood and 77% of muscles is water. Therefore, no organ can survive without a regular supply of water to the body.

Water can be present in bound or free forms. When *bound*, it loses its ability to flow and remains motionless in metabolism. In its free state, it generally constitutes the fluid inside the cell and veins and the extracellular fluid filling the spaces between cells. Large molecules such as proteins, carbohydrates and nucleic acids also contain water. Bound water, known as intermolecular water, is found between fibers and membranes.

Water has various distinguishing features; it is found in three different states, and has deliberately determined boiling and freezing points, and is attached by means of hydrogen bonds. Water is a special molecule that is found in every organelle in the body and serves many functions, from transporting nutrients to forming various structures. It can easily enter and be expelled from the body. Inside cells, it constitutes an environment where reactions dealing with enzymes and chemical energy transfers can occur. The cell's structure and functions demonstrate complete compatibility with water's physical and chemical properties. In short, the living body is an ideal environment for water to be present in various forms.



Being a special molecule, water can be found in every organelle in the body and serves in a great many ways, from transporting nutrients to forming various structures. The cells are completely compatible with water's physical and chemical properties, so that water can enter the cell without difficulty and be expelled in the same way.

Water accomplishes exceedingly important functions throughout the body mainly through ionization—the process of an electron leaving or joining an atom that comprises the molecule. The water entering the body is separated into hydrogen ions (H^+) and hydroxide ions (OH^-)—a division of vital importance, because the H and OH levels for the cells have been predetermined, and the levels of ions in the blood—expressed as pH values—need to be kept constant.

The body's pH is exceedingly important. In nature, pH value can range from 0 to 14 but in the body, it must remain around the 7.4 level. If this level falls to 6.8 or rises to 8.0, the result is death.²⁷

Renal insufficiency, or kidney failure, is the main reason why someone cannot maintain a normal blood pH level. The surprising and

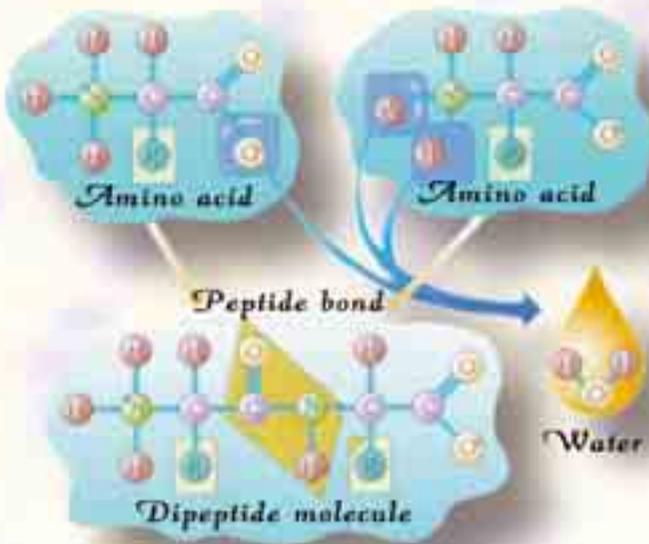
miraculous fact is that only one out of every 10 million water molecules entering the body is ionized.²⁸ If for any reason, not a single water molecule is ionized, death will ensue sooner or later. No matter how much effort may be expended, no earthly power can reproduce this perfect system. A single ionized water molecule is the perfect level determined for the human body. This delicate creation is one of the proofs of Allah's matchless artistry. In one verse, He reveals:

Everyone on [the face of the Earth] will pass away; but the Face of your Lord will remain, Master of Majesty and Generosity. So which of your Lord's blessings do you both then deny? Everyone in the heavens and earth requests His aid. Every day He is engaged in some affair. So which of your Lord's blessings do you both then deny? (Surat ar-Rahman: 26-30)

AMINO ACIDS AND PROTEINS: THE MOST IMPORTANT BUILDING MATERIALS

If proteins are like buildings, then amino acids are the bricks of those buildings. There are 20 kinds of amino acid in nature, and these amino acids are bound to each other in a particular sequence for each protein. This bonding is unique for each protein, which contains at least 300 amino acids.²⁹ For example, in the manufacture of a single protein, the amino acid called *glycine* joins the sequence in 20 or 30 places. The sequencing of these amino acids are flawless, since a protein molecule can serve its purpose only so long as it possesses that exact sequence. The slightest error in that sequence will result in a useless assortment of molecules. Yet generally, we never encounter such an eventuality thing. Amino acids always combine in a perfect order to fulfill their functions in forming protein molecules.

The 20 amino acids in protein molecules all share a similar structure. Each amino acid contains a carbon based carboxyl group and an amino group. The only difference between these amino acids, otherwise identical in terms of structure, is their side chains. Because of the different atoms and bonds composing these side chains, the amino acids pos-

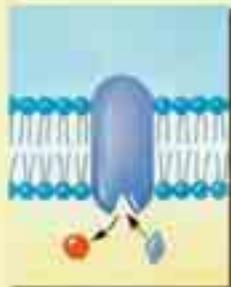
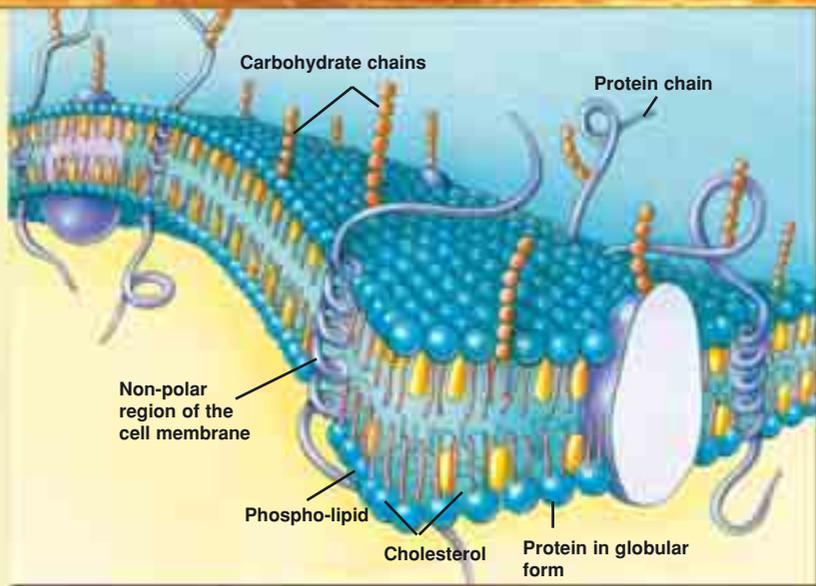


All of the 20 amino acids that make up proteins possess a common structure. The only thing that distinguishes any one from the others is its side chains. Due to the different atoms and bonds acquired by side chains, they possess different structures, which permit the 20 different amino acids to give rise to 10^{130} different proteins with differing sequences. This, of course, is a matchless creation.

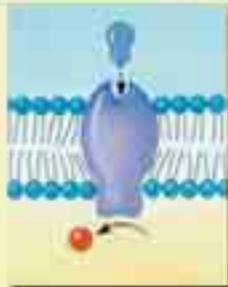
sess different structures and electrical charges and different levels of solubility in water.

In order to give rise to proteins, amino acids attach to one another by means of what's known as peptide bonds. The arrangement of amino acids, attached by peptide bonds, determines the proteins' three-dimensional structure. Proteins assume different functions according to their structures and use the cell's chemical reactions in various stages. If a cell needs energy, proteins perform different chemical reactions. If the cell requires amino acids, the proteins break down into amino acids. In addition, proteins also act like building bricks in the cell membrane. In short, proteins are used almost everywhere throughout the cell.³⁰

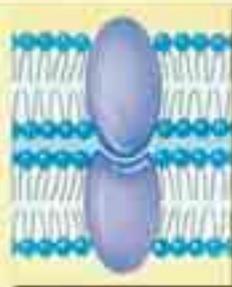
A protein's three-dimensional structure determines its functions. A protein molecule that's tensed or curved, folded at random, is biologically unusable. In order for a protein to function properly, its atoms must be set out in an appropriate manner. Any protein that possesses



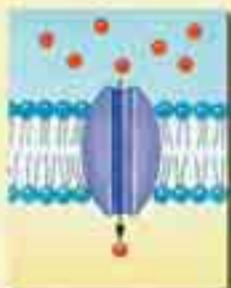
Enzyme



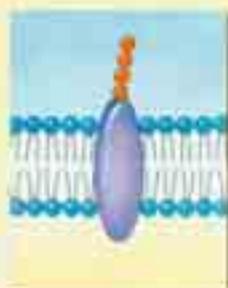
Receptor region



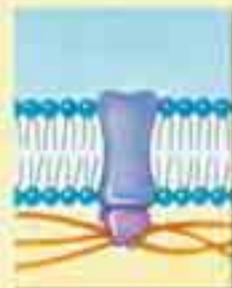
Cell unification



Transportation channel



Cell definition sign



Cell skeleton bonding

In order for a protein to function, its atoms need to be arranged appropriately. This structure formed by the combination of atoms is a three-dimensional one, and only when proteins have a three-dimensional structure do they become able to serve throughout the body. If the atoms comprising a protein were bound to one another in other ways, not only might the molecule disappear, but also the organism might die. That atoms achieve this perfect structure is one of the beauties and blessings of Allah, Who reveals His sublime and immaculate artistry in every detail He creates. The existence of the Earth and the universe—and the way its perfection prevails for the continuation of life, from the smallest subatomic particles to proteins, from the cell to all the systems in the universe—again demonstrates the flawless creation of Allah, our Lord.

the same atoms, but not in a particular order, cannot perform its protein functions.

The protein's three-dimensional structure arises from the bonding of the atoms that form this molecule. Biochemistry and biology textbooks discuss in generally technical terms how a regular order emerges in this microworld, and how way that this order endows proteins with important functional characteristics. Yet scientists, realizing that molecules had been bound together this way for billions of years, were amazed by this property that they had discovered only recently, and began to inquire into the source of this perfection.

Were perfection not complete, even a single error could eliminate not only the molecule, but also the entire organization which that molecule supports. The way that unconscious atoms achieve this perfect structure is evidence of the creative artistry of our Lord, Who displays sublime artistry in all that He creates. Everyone who examines the magnificent microworld possessed by a single molecule is amazed by its impeccable artistry. The flawless structure necessary for life to come into being appears before us everywhere, from the smallest subatomic particles to the universe itself. Allah reminds us of His might, greatness, superior creation and lack of any deficiency in all the entities He creates, down to the smallest particle.

He reveals this in these terms in His verses:

He Who created the seven heavens in layers. You will not find any flaw in the creation of the All-Merciful. Look again – do you see any gaps? Then look again and again. Your sight will return to you dazzled and exhausted! (Surat al-Mulk: 3-4)

THE SUPERIOR STRUCTURE OF THE PROTEIN MOLECULE

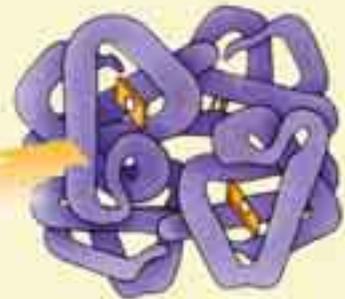
Protein molecules are of two types, depending on their characteristics. The first, fibrous proteins, exhibit a regular structure around an axis. They are found in bone tissue and tendons connecting muscle to bone. Fibrous proteins are insoluble in water and have an exceptionally resistant physical structure.

In the second group, known as globular proteins, the amino acid chain bends in an irregular manner and assumes a spherical shape. These proteins are soluble in water, and are not physically resistant. You might consider this to a disadvantage, but in fact this weak structure is of enormous importance for the human body. The cell's globular proteins are able to move. Almost all the 2,000 known enzymes, antibodies, some hormones and hemoglobin all have globular protein structures. Some proteins exhibit both fibrous and globular characteristics: Even if they resemble fibrous proteins in their structure, they have globular proteins' ability to dissolve in saline solutions. The myosin in skeletal

Blood cells



Hemoglobin molecule



In globular proteins, the amino acid chain bends irregularly to assume a spherical shape. Almost all the known enzymes, antibodies, some hormones and hemoglobin have a globular protein structure. Globular proteins are soluble in water and not physically resistant. These mobile structures we have listed can only serve a purpose with a protein structure with the features in question.

muscle and the fibrinogen molecule that permits blood to clot are members of this group. ³¹

Differences in protein structures are by themselves evidence of the superior creation of the human body. The two separate protein structures, with their appropriate different properties and shapes, are found exactly where needed. Proteins that give rise to bone tissue exhibit a sound structure and are insoluble in water. If globular proteins were to give rise to bones, then these tissues would dissolve in the body (which consists of 60% water), and the skeleton would never be able to support itself. If the opposite were to occur—if fibrous proteins were to be the mobile proteins in the cell, then their hard, resistant structures would never be able to function. In that case, the enzymes that regulate the body's metabolism could never form. It is impossible for an organism whose enzymes serve no function to survive. The difference between two vitally important protein molecules is merely their shapes, the sequences of the atoms that comprise them, and how those atoms are bonded together to determine those shapes.

The same atoms combining together in different shapes and producing two such different results is a miracle. Unless you have received a sufficient level of training on the subject, you cannot possibly dismantle a television, rearrange the components in a totally different way and come up with a fully functioning set. However, very much more complex processes than that are performed within the body. When the same atoms that make up one protein are bound together differently, they form another functional protein with different properties. No error ever occurs while all this is taking place, and every protein knows the purpose for which it has been manufactured, because each one is the impeccable work of Almighty Allah.

ALL SUPERVISION OF THE BODY LIES WITH ENZYMES

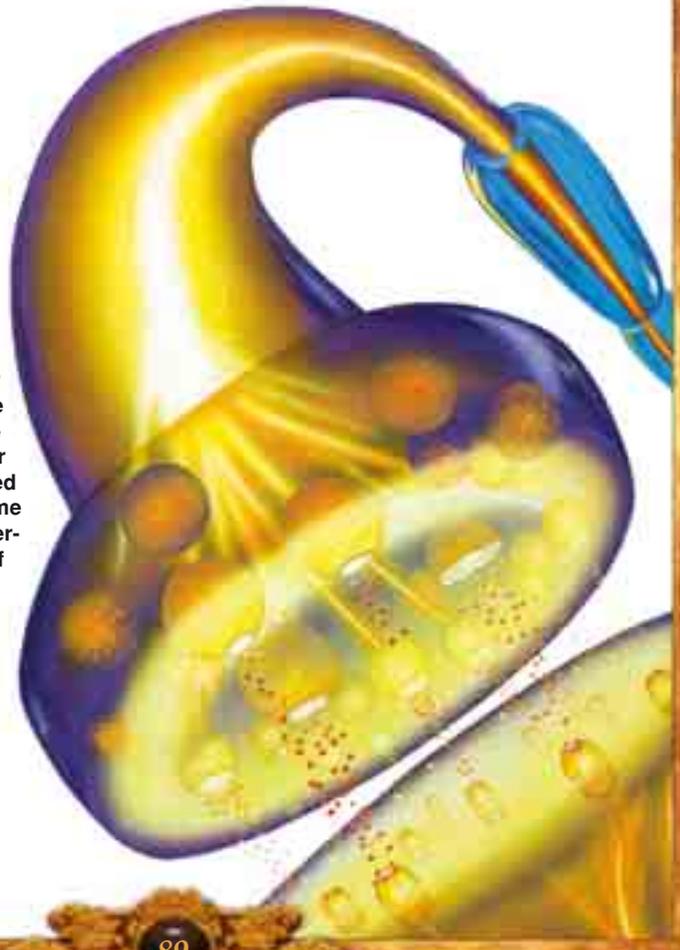
Some proteins have an enzyme structure and regulate metabolism by constantly taking part in chemical reactions inside the cell. There are more than 3,500 enzymes in a human cell.³² In the event that even one or a few these are missing, intracellular activities may become totally jumbled. The result of that would be the fragmentation of the cell—in other words death.

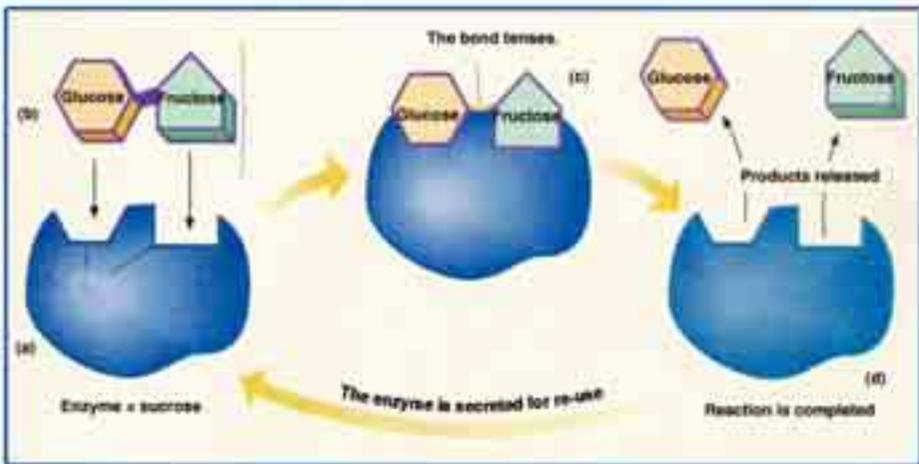
Enzymes' most important duty is to assist in copying of the DNA molecule. In addition, these intelligent molecules are constantly at work inside your body to ensure that you can breathe, stand up, eat, see, speak, grow and develop. Large molecules produced according to the genetic codes recorded in DNA by an organelle inside the cell known as the ribosome send the relevant messages to their proper destinations within the body, know which organ has to go into action to achieve a particular process, remove excess substances from inside the cells and constantly travel about in the body to operate. These molecules all serve as highly competent supervisors.

The only difference between an enzyme molecule and any other protein molecule lies in their three-dimensional shapes. If enzymes did not possess a three-dimensional form that determines their features, then there could be no supervision of intra-cellular processes. The transmission of information from the brain via nerves to the various organs, and many other processes necessary for life, could not take place. The absence of a single enzyme to correct any errors that occur during the replication of DNA might result in a gene with no function or, even worse, to give rise to cancer. Enzymes' way of affecting various processes by reaching different parts of the body is yet another molecular miracle. The enzyme must recognize the molecule that carries news to it, or which it causes to change or set in motion. From the molecule's shape and structure, the enzyme understands what kind of reaction this molecule might undergo. Having recognized this molecule, it now initiates a reaction and brings about a number of characteristic changes in the

molecule's structure.³³ The molecule's complex three-dimensional geometry is wholly compatible with the enzyme's molecular structure, just like a key fitting into a lock. When the two molecules clamp together, they can thus interact with one another. By means of this locking system, the enzyme carries out the changes that need to occur in the molecule. Thousands of reactions take place inside the cell, and there are thousands of different enzymes to let these changes occur. Every minute, thousands of enzymes enter into reactions in every one of your cells. Sometimes a single enzyme carries out this process, combining with 300 different molecules a second. In order for enzymes to be active so that these reactions can take place, the body's temperature and pH must also be at specific levels. Above a certain temperature, enzymes and proteins break apart. At the same time this also causes all the pro-

Many nerve cells end in a spherical mass, a globular region surrounded by sensitive receptors compatible with chemical molecules and known as acetylcholine. When an impulse forms in the nerves, acetylcholine heads directly for this space and transmit the stimulus by attaching to the receptors there. In order for this process not to be carried out constantly, an enzyme known as acetylcholine esterase neutralizes the effect of the acetylcholine in that region. This enzyme is an important component of the nervous system, essential for us to enjoy healthy lives.





Enzymes accelerate chemical reactions in the cell. A) Enzymes are globular proteins with hollows in their surfaces. This hollow is of a size to harbor the reaction molecules. B) The molecule to enter the reaction enters the hollow in the enzyme and initiates the reaction. C) In this lock-and-key relationship, the molecules are fixed in their shapes. D) Chemical bonds break depending on the enzyme, and products are set free. The original enzyme is now free to enter into a reaction with new molecules.

teins to fall apart. Therefore, the body's sensitive system is specially created that all these processes can take place. Any imbalance in these levels can cause total impairment of the body's metabolism.

Don't forget that enzymes are minute collections of atoms, too small to be seen with the naked eye. The way that one assemblage of atoms recognizes another collection of atoms and determines its features clearly shows that it is under the control of a separate will. Evolutionists maintain the exact opposite, suggesting that such conscious intent came into being by chance, but when they find themselves faced with the cell's extraordinarily complex structure, they are perfectly well aware that no such system could ever emerge by chance. Yet as a result of their world views and denial of the existence of Allah, they constantly seek to reject this truth. Their illogical aims are aimed at rejecting the absolute existence of Allah. In fact, however, everything

created by Allah clearly indicates His existence and greatness.

Professor Cemal Yildirim, one of Turkey's foremost proponents of the theory of evolution, has openly stated the impossibility of life coming into existence spontaneously. He considers the improbability of any enzyme molecule coming into being outside the cell by chance:

A typical enzyme consists of 100 amino acids. Since there are 20 amino acids, we are talking about 20¹⁰⁰ combinations. The odds of a specific enzyme coming into being by chance—in one go, within that many combinations—is 1 in 10¹³⁰.³⁴

Professor Ali Demirsoy, an evolutionist molecular biologist, cannot hide his amazement in the calculation of the probabilities of enzyme formation:

An enzyme consists of an average of 100 amino acids. The number of combinations resulting from an enzyme consisting of 100 amino acids with 20 amino acids is 20¹⁰⁰. Bearing in mind that the number of atoms in the universe is 10⁸⁰ and that the number of seconds that have passed since the formation of the universe is 10¹⁶, then you can see how small the odds are of an enzyme with a specific sequence coming into being are. So how did enzymes come into being? ³⁵

One reference sets out the impossibility of enzymes coming into being spontaneously by the use of the following calculation:

It is estimated by one evolutionist [Fred Hoyle] that there are 2,000 different complex types of enzymes in a living organism. Not one of them could be formed by random, shuffling processes in even 20 billion years! ³⁶

Remember that there are more atoms in a single period on this page than there are stars in our galaxy. The number of atoms in the universe is 10⁸⁰. This is a number far beyond human conception—80 zeroes coming after 10. Therefore, the 1 in 10¹³⁰ probability of an enzyme of 100 amino acids coming into being spontaneously is, in practical mathematical terms, zero. In other words, it is not possible. In the face of this, it is

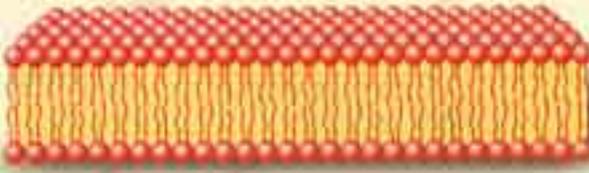
also mathematically impossible that a single enzyme, selected from among the millions of special molecules in the body, can have come into existence by chance.

THE CELL MEMBRANE IS A PERFECT PROTECTIVE SHEATH

The molecular structure of the cell membrane is a chief focus of present-day research by cell biologists and biochemists. This is because the cell membrane is an exceedingly complex organelle with important biological features and a specific, well organized structure, equipped for the protection and nutrition of the cell and all the process it carries out. The cell membrane is equipped with rather important attributes for the protection and nutrition of the cell and all the process it carries out reveal great intelligence. Although many important features have been discovered, all the functions of the cell membrane remain a mystery to this day.

The cell membrane consists basically of fat and protein molecules, yet in it there are also structures—ion and molecule pumps—with very different characteristics and from these structures arise the miraculous aspect of the cell membrane. These microscopic pumps are responsible for the cell membrane's selectively permeable structure, which admits only certain substances from outside the cell.³⁷ The cell membrane's pumps absorb such nutrients as glucose and also ensure that possible harmful or excess substances are removed from the cell, while harmful outside substances are prevented from entering. This flawless structure also identifies the cell's needs and allows to enter no more nutrients than are necessary. In short, this miraculous membrane displays intelligence by selecting and evaluating other molecules, making decisions and performing a task that one would not expect of it. As an example of just how essential this feature of the cell membrane is, the reason why snake venom can be lethal is that it breaks down the cell membrane, thus allowing all kinds of harmful substances to enter.

The molecular pumps and the gates that permit passage through



Fungus



Liposome

The diagrams show cross sections of the cell membranes of three different structures. All the membranes in these structures possess molecules equipped with very special features. The cell membrane possesses molecular priority, through which essential substances such as glucose are admitted into the cell while harmful substances are excluded. Also by means of this special structure, the needs of the cell are identified. This is just one of the incomparable miracles created by Allah.



Two-fold layer

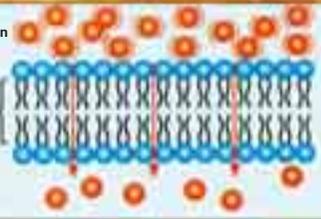
the cell membrane are very intelligent in selecting the materials that they allow to enter. Different substances that enter the cell naturally come in different sizes—from minute electrons and photons, protons and ions, to small molecules such as water, medium-size molecules such as amino acids and sugar, and rather large molecules such as protein and DNA. By way of its pumps, the cell membrane can admit a necessary molecule, no matter what its size. If the molecule is too large to pass through these gates, then the membrane signals on enzymes nearby for assistance, to widen the gate on the cell membrane.

Once this molecule has been admitted, the enzymes go back into action to return the gate to its previous state. During this process, no harm befalls the gate, the cell membrane, or the cell. The molecules act together in a division of labor just as if they were communicating. If there were no molecules with such features on the cell membrane, it would definitely mean the end of life. In the absence of these gates, nutrients could not be admitted to nourish the cell and the waste pro-

High-concentration region

Cell membrane

Low-concentration region



Molecules strike one another at random in the high-concentration region.

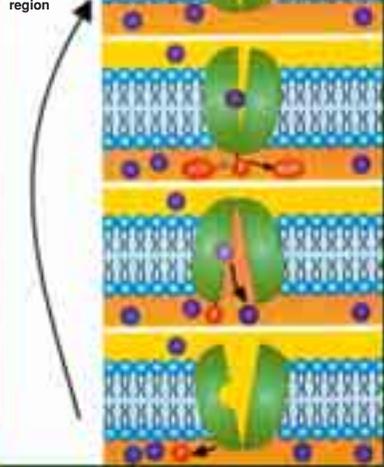
Those that strike

transmit the spreading molecule to the low-concentration region.

Dissolved molecule

Transport protein

Binding region



A dissolved molecule attaches to the open, bonding region on the transport protein in the cell membrane.

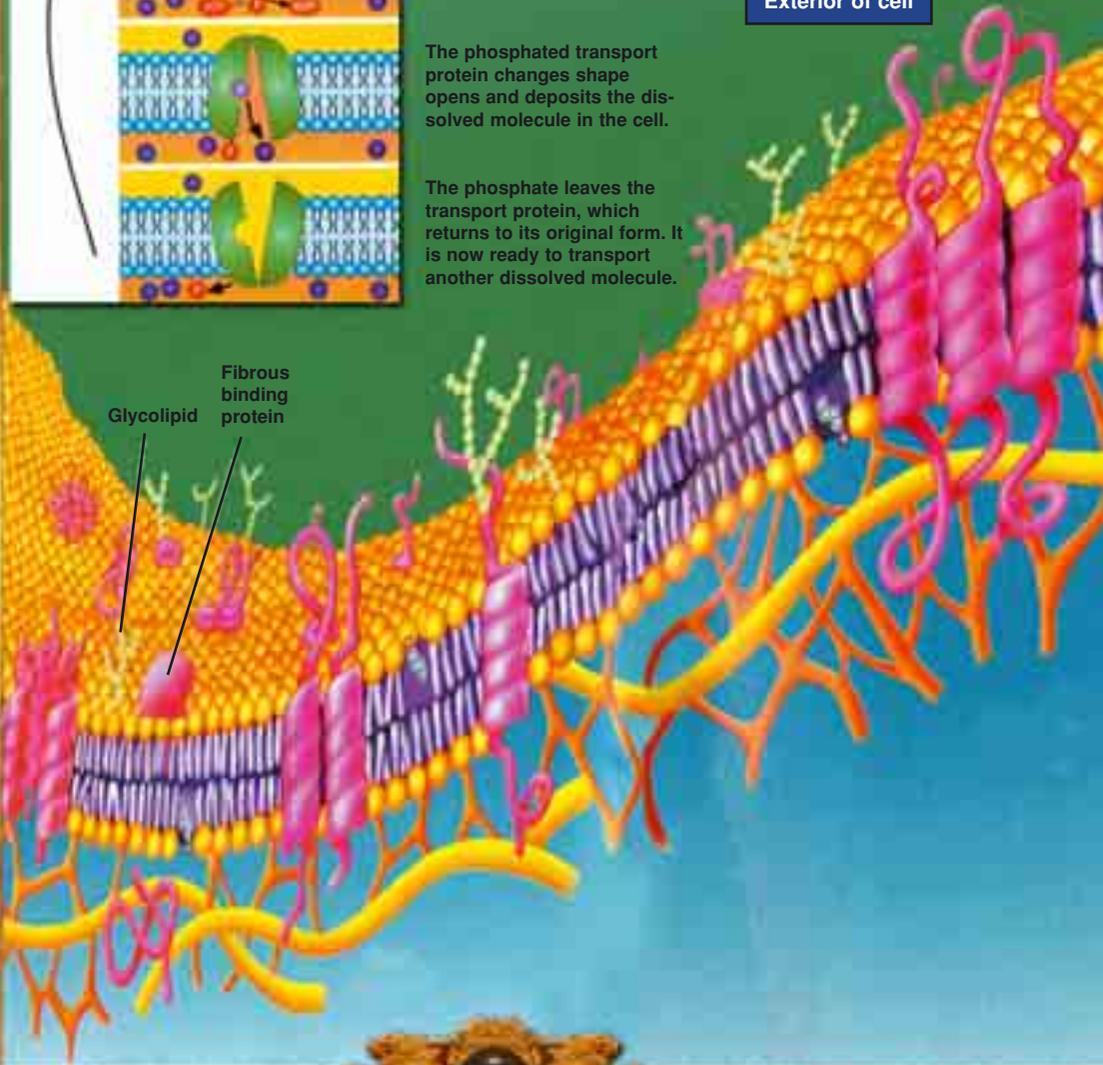
ATP transfers phosphate to the transport protein.

The phosphated transport protein changes shape opens and deposits the dissolved molecule in the cell.

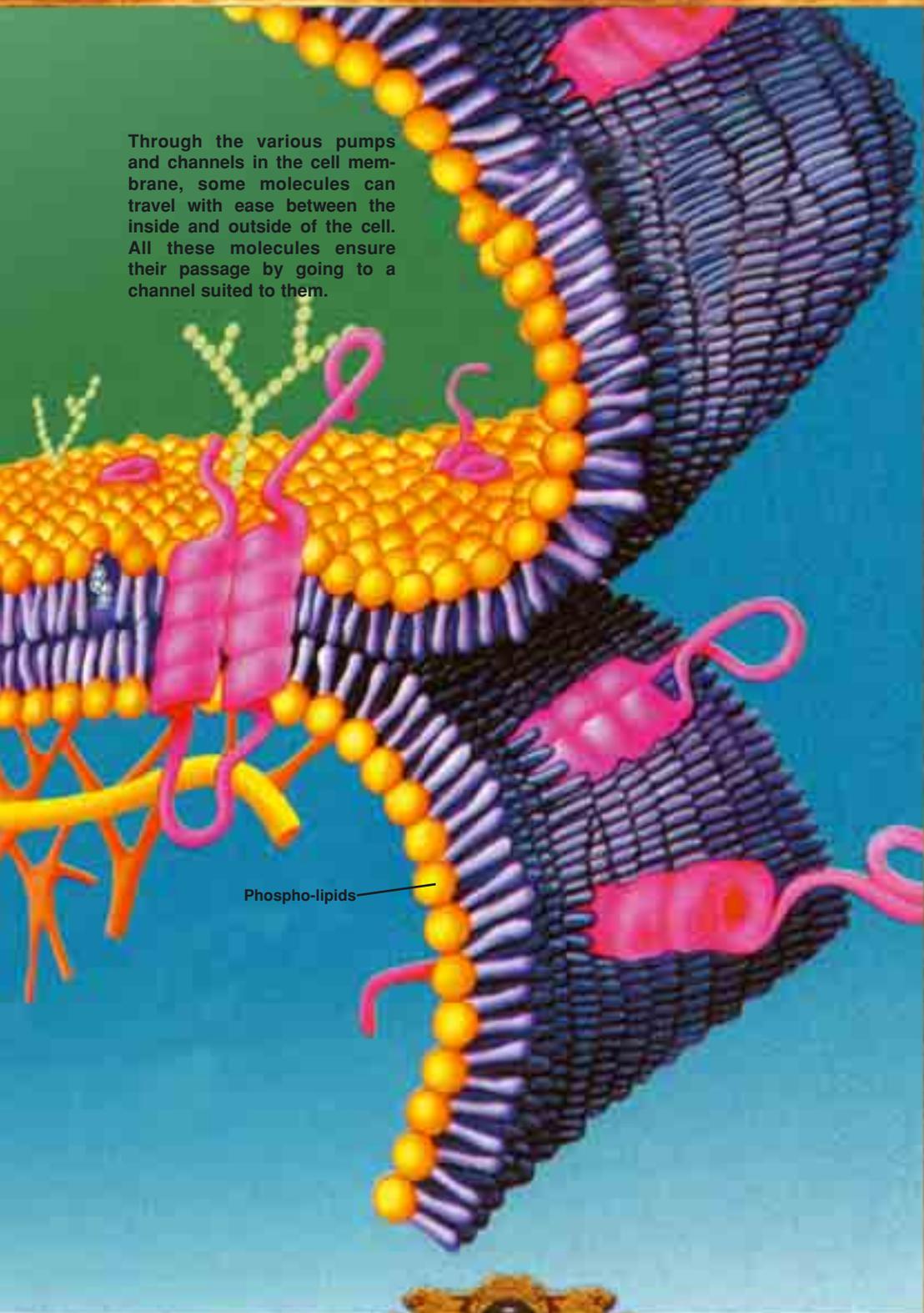
The phosphate leaves the transport protein, which returns to its original form. It is now ready to transport another dissolved molecule.

Exterior of cell

Glycolipid
Fibrous binding protein



Through the various pumps and channels in the cell membrane, some molecules can travel with ease between the inside and outside of the cell. All these molecules ensure their passage by going to a channel suited to them.



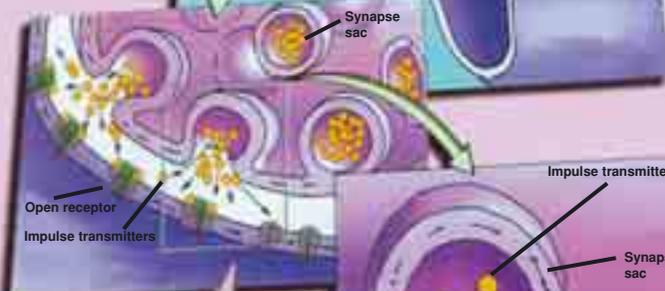
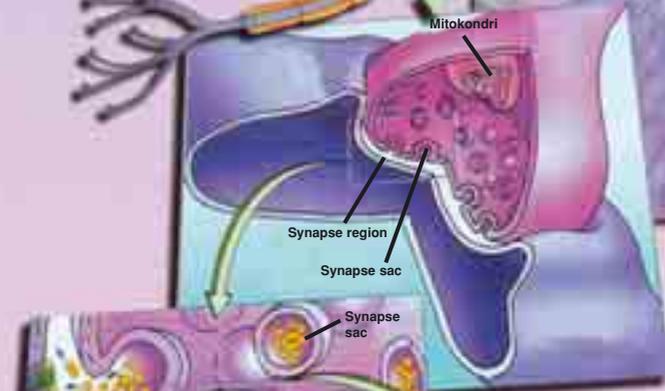
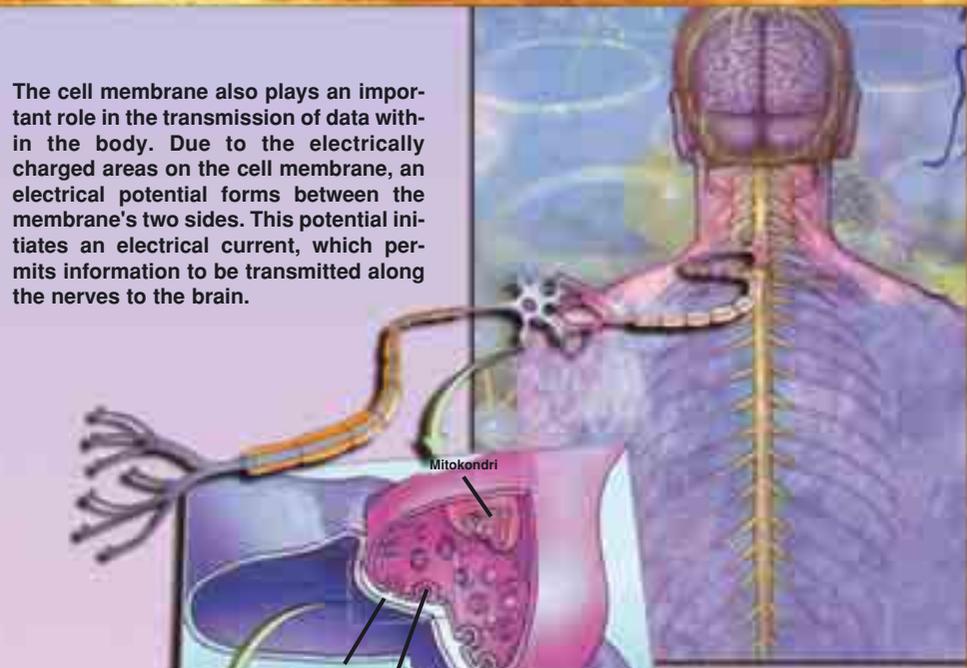
Phospho-lipids

ducts inside could not be expelled. Could any one of the hundreds of different molecules within the cell assume the responsibilities of these molecules? That is also impossible. Every molecule inside or outside the cell is responsible for discharging its own functions. If molecules are absent from the cell membrane, their functions cannot be performed by any others. They are one of the countless features that we usually are not aware of, which have been specially created to protect the cell—and thus, human life.

The cell membrane possesses other important attributes. On its surface there are electrically charged areas, by means of which an electrical potential forms between the two sides of the cell membrane, and the transmission of information along nerve cells to the brain takes place as a result of this electrical potential in the cell membrane.³⁸ Signals coming from anywhere in the body are transmitted to the brain by means of various electrical impulses. If the molecules did not initiate such electrical impulses; there could be no communications within the body. You could not feel anything you touched, because what you feel is electrical signals transmitted to the brain from your hand. If these signals did not travel to your brain, you could not perceive anything. And it is impossible to sense anything that the brain cannot perceive.

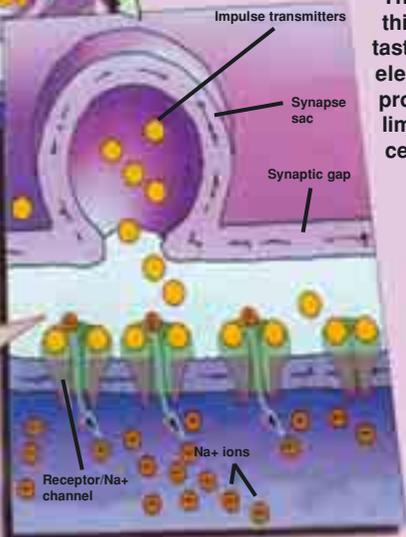
The molecules in the cell membrane can also repair any damage that the membrane might incur. In the event the membrane is torn or punctured in, these molecules immediately identify the damage and soon repair it.³⁹ These molecules constantly monitor the membrane. Like other molecules, they too, know their duties and do not interfere in any other tasks inside the cell. The absence of these molecules would mean that impairments could not be rectified, and that cell damage would give rise to various illnesses, possibly fatal. It is impossible for such a mechanism to come into being by chance. To claim that this system has occurred by chance once again shows the total illogical displayed by evolutionists.

The cell membrane also plays an important role in the transmission of data within the body. Due to the electrically charged areas on the cell membrane, an electrical potential forms between the membrane's two sides. This potential initiates an electrical current, which permits information to be transmitted along the nerves to the brain.



Impulse transmitters depart from the synapse sac and bond to special receptors on the opposite side of the synapse region, activating them.

Impulse transmitters move the positive sodium ions rapidly towards the next region once sodium ions have activated the channels. This motion set up by the sodium ions initiates an electrical signal.



In the absence of this important electrical current between the cells, initiated by the molecules, there could be no communication within the body.

Therefore, everything you feel, see or taste results from this electrical current, produced by the sublime creation in the cell membrane.

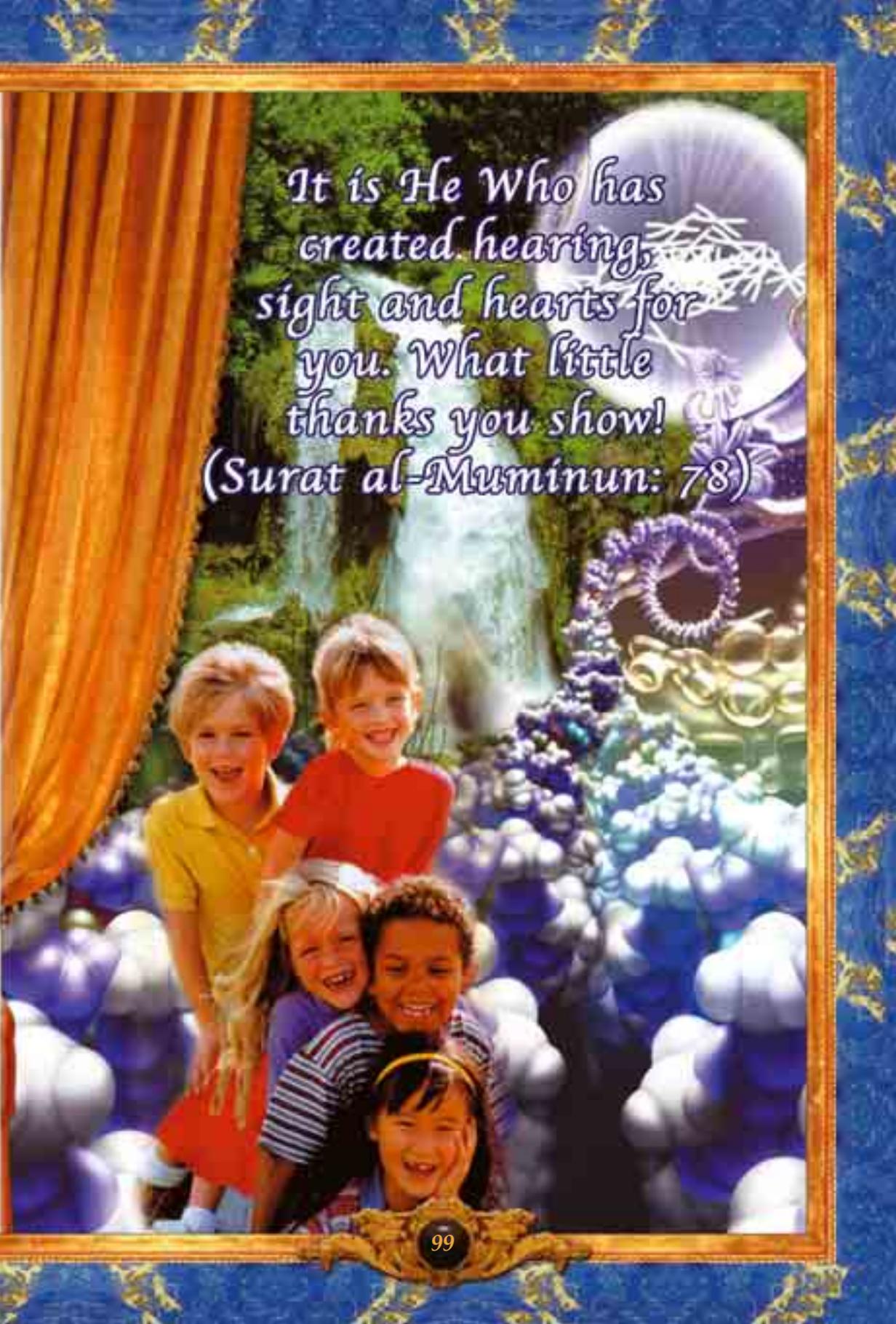
Also on the cell membrane, there are receptor molecules capable of perceiving various kinds of information arriving from outside. These receptors consist of various proteins with a mosaic-like structure, and highly sensitive to hormones and data-bearing molecules inside the body.⁴⁰ This information, again, is encoded by the shape of the data-bearing molecule. When its shape is compatible with the proteins on the surface of the cell, the two molecules recognize one another, and communications are thus established.

Molecules Coming to Life Confirm Creation

Any single mistake in a molecule may harm you or even lead to your death. Yet all these molecules clearly demonstrate that they are under the command of a superior Intellect and so, never make any errors in their activities. The 100 trillion DNA molecules in your body and the 100 trillion cells that contain them⁴¹ and make you unique, the nucleotides that give rise to DNA, the proteins that compose the cell, the enzymes that so perfectly regulate the traffic between them, all possess an incomparably sublime organization and order.

Clearly, in this microscopic world that cannot be seen by the naked eye, a human being's rational, conscious mind can't possibly result from any random combination of atoms and molecules. It would also be illogical to claim that atoms can bond in the necessary manner, determine functions for themselves, order themselves accordingly and manage tasks that even biochemists cannot accomplish. How did inanimate and unconscious atoms come to life and acquire consciousness? This important question places Darwinists and other materialists in a major dilemma that leads them to question their ideologies.

Even if all the scientific experts who ever lived made use of all possible technological means, they could still not produce a living organism simply by bringing atoms together. The sophistication clearly evident at the molecular level presents an impasse for Darwinists. Their statements and publications keep relating scenarios the chance development



It is He Who has
created hearing,
sight and hearts for
you. What little
thanks you show!
(Surat al-Muminun: 78)

of life. But in fact, it is meaningless for them to make proposals regarding how life evolved when they cannot scientifically account for its origin. The plain truth is that life is too flawlessly complex to be accounted for in terms of chance phenomena. Allah reveals the position of these people who regard coincidence as a so-called deity and who search for creators other than Him:

Do they make things into partner-gods which cannot create anything and are themselves created; which are not capable of helping them and cannot even help themselves? (Surat al-A'raf: 191-192)

SUGAR MOLECULES: A COMMON FORM OF CARBOHYDRATES

Whenever "sugar" is mentioned, the first thing that springs to mind is the sweet granular substance stirred into tea or used to bake cakes. However, the sugar you use in daily life is just one variety of the very wide range of sugar molecules found in nature and which have a very broad sphere of use. Sugar molecules are a member of the broad group called carbohydrates in the language of chemistry. The sugar molecules we are examining here are all members of the carbohydrate group.

Glucose and glycogen—living things' most important sources of energy—the starch that results from photosynthesis in plants, and the cellulose that forms the most cell walls in plants, are all actually carbohydrates. In the matchless structure of cell membranes there are also carbohydrate molecules combining together.

Carbohydrates consist of carbon, hydrogen and oxygen atoms. Hydrogen and oxygen are present in carbohydrate molecules in the same ratios as they are in water.

GLUCOSE: THE BODY'S BASIC FOODSTUFF

Glucose is the main source of food for all living things. This molecule possesses six carbon atoms, six oxygen atoms, and twelve hydrogen atoms, six of which it uses to make its hexagonal external structure,

from which stem glucose's most important molecular characteristics. The six oxygen atoms it possesses also impart other important molecular features, enabling glucose to dissolve easily in water. By means of its oxygen atoms, this molecule can easily establish hydrogen bonds with water molecules, and immediately dissolves in water.

This property of glucose is most important, because as the most important source of nourishment for cells, glucose must be soluble in order to be carried by the bloodstream.

Glucose can be compared with hexane, which closely resembles its own molecular structure and bears a close resemblance to glucose in many respects, particularly as a fuel. However, hexane does not carry oxygen atom, so when it oxidizes, it gives rise to many new, powerful carbon-oxygen bonds. This prevents hexane from dissolving in water. That is why blood cannot carry hexane to the cells. Under normal conditions, glucose is less efficient than hexane, but being transportable in liquid, it is of vital importance to animals and plants.



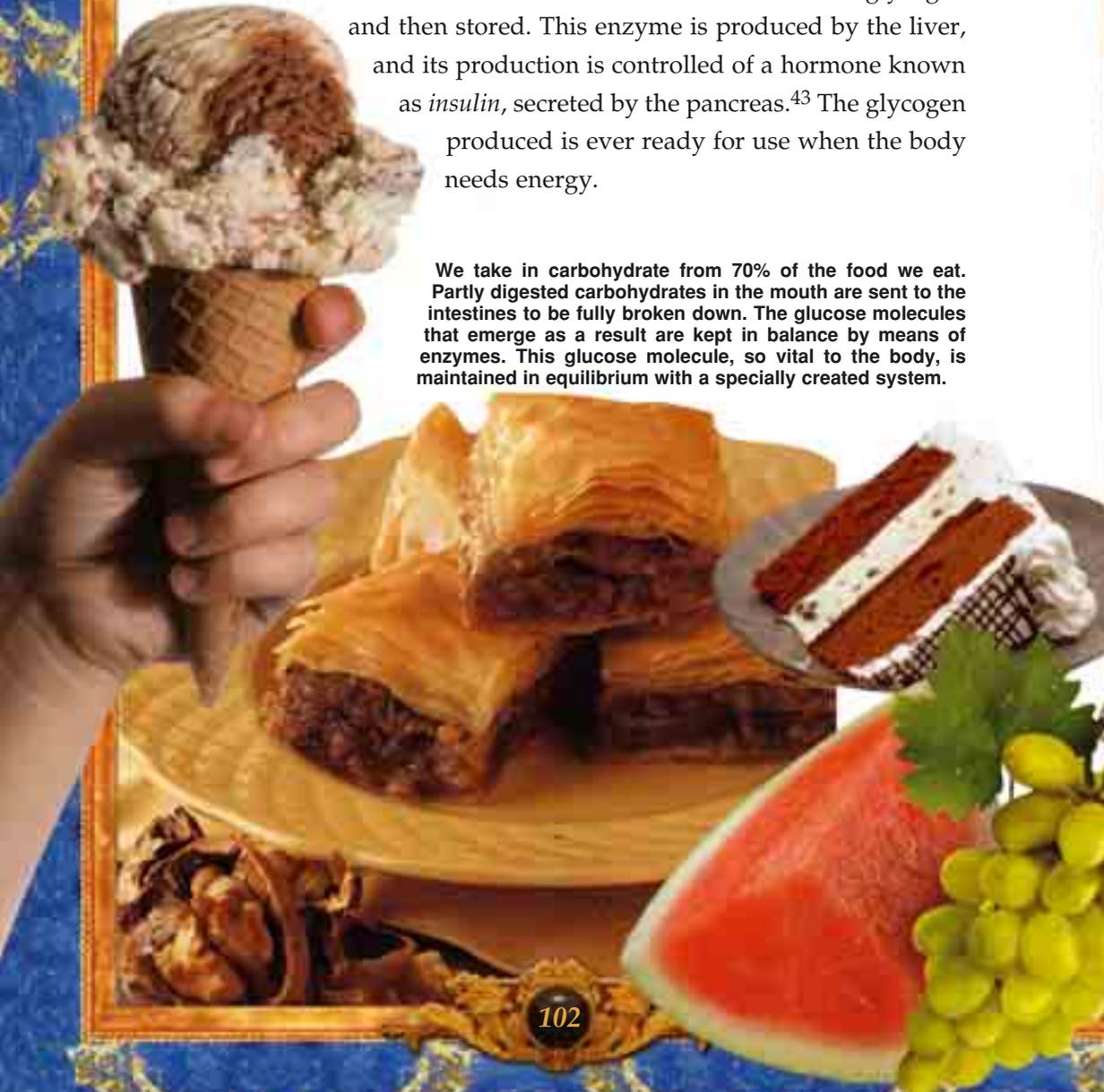
Glucose, specially created for life, is the fundamental substance found in ripe fruit, flower nectar and the sap of plants. Once glucose molecules enter solution, they immediately become the essential fuel for living cells. When larger molecules, such as the more complex sugars and starches, are digested, they are broken down into glucose molecules in order to be burned and transported to the cells more easily. In this way, glucose names as blood sugar, grape sugar or starch sugar, according to the metabolism it enters. Glucose, specially created for life, is the fundamental substance found in ripe fruit, flower nectar, leaf sap, and the blood flowing in the human body. ⁴²

We take in carbohydrates from 70% of the food we eat. Carbohydrate digestion starts in the mouth, where the enzymes in sali-

va starts breaking them down. The digestion of these partially broken-down molecules ends in the intestines, and the glucose molecules that emerge as a result cause blood pressure to rise. However, blood pressure is balanced by means of the enzymes that act on the glucose molecules. In short, one molecule crucial for the body is kept in balance by another specially created molecule.

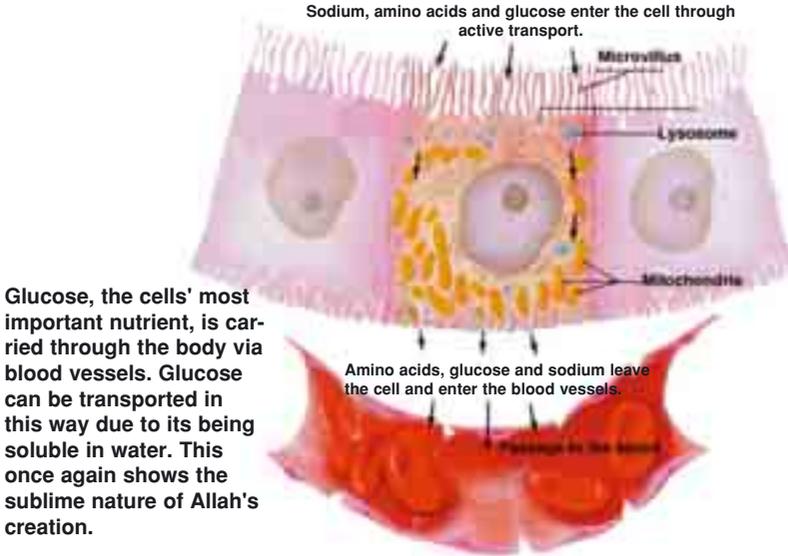
Even if glucose is present in excess quantities in the bloodstream, it is not wasted. By means of an enzyme known as *glucokinase*, excess glucose molecules are turned into a form known as glycogen and then stored. This enzyme is produced by the liver, and its production is controlled of a hormone known as *insulin*, secreted by the pancreas.⁴³ The glycogen produced is ever ready for use when the body needs energy.

We take in carbohydrate from 70% of the food we eat. Partly digested carbohydrates in the mouth are sent to the intestines to be fully broken down. The glucose molecules that emerge as a result are kept in balance by means of enzymes. This glucose molecule, so vital to the body, is maintained in equilibrium with a specially created system.





HARUN YAHYA



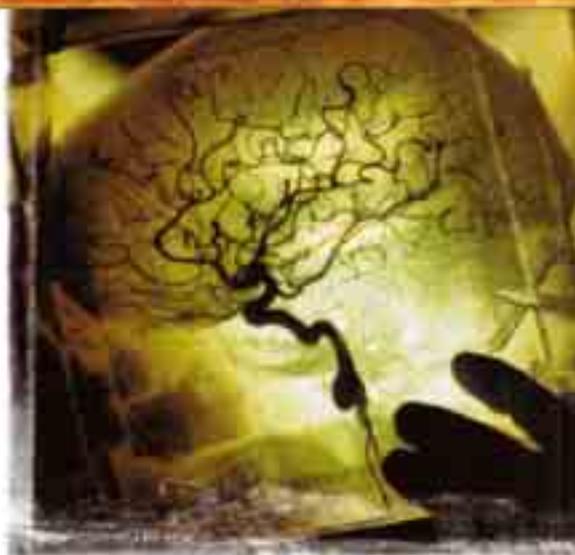
The body's metabolism operates much like a factory, with various units that engage in production, transport products to specific destinations, check them, identify surpluses and use them for other products. All production must be under strict supervision, so that no errors in production ever occur, and faulty products are broken down and used to form new products. In a factory, it's trained human beings who understand quality control, monitor the manufacturing, and perform all these processes. However, the system we are describing here occurs inside cells, mere microns in size (1 micron equals 1×10^{-3} millimeters, or 4×10^{-5} of an inch), inside your own body. Neither the molecules nor the cellular structures that act with them possess intelligence, knowledge, or training. Neither does any amount of time need to pass for all these processes. These perfect systems got underway in the exact way they do now, at the moment you were born. For thousands of years, before science was even aware of it, this perfect division of labor has been flawlessly implemented. Every molecule has discharged its responsibilities in every human who has ever lived. Moreover, this systematic division of labor and extraordinary organization operate in your body at every moment, without your awareness. Since molecules cannot possess intel-

lect or consciousness, we once again witness a superior and flawless creation.

In the human body, glucose—the brain's most important source of fuel—must be present at a level of 60% in the blood (or 110 milligram/deciliter or 0.15 ounce/gallon); and at a level of 0.1 milligram/dl ($1,3 \times 10^{-4}$ ounce/gallon) in tissues. If something

goes wrong and the amount of glucose reaching the brain drops below 0.04 milligram/dl (5.3×10^{-5} of an ounce/gallon), the brain cells become emit nerve impulses, causing the muscles to constantly contract. This leads to death within a short space of time.⁴⁴ The way your life depends on such molecules is an important indication of how much human beings stand in need of Allah, and clearly reveals our helplessness and weakness in the face of His might. Even though we have difficulty fully comprehending the systems in our own bodies, we must still realize the definite existence of Allah and understand that everything is created for a reason. Every detail in the world makes this clear—all things are in perfect harmony and utterly flawless, as is set out in a verse:

It is Allah Who created the seven heavens and of the Earth the same number. The Command descending down through all of them, so that you might know that Allah has power over all things and that Allah encompasses all things in His knowledge. (Surat at-Talaq: 12)



Any change in the specific quantities of glucose reaching the brain can have fatal results.

THE ATOMS COMPRISING GLUCOSE ARE SOMETIMES
BONDED IN DIFFERENT WAYS

Glucose may take the form of different sugar molecules by bonding differently. One of these is fructose, the fruit sugar widely found in fruit and vegetables, and the molecule that gives

fruit its sweet taste. Fructose is also the main sugar substance in honey, because the flowers from which bees gather nectar are all sources of fructose. This molecule also has another important property: It's the sugar that gives sperm cells the energy to move along their long and miraculous journey.⁴⁵

Another sugar molecule—sucrose, emerges when glucose and fructose combine together. Sucrose is the powdered sugar you use in daily life, and is particularly found in sugar cane and sugar beets. Sucrose also constitutes the structural element in starch and cellulose, found also in all plants. That Sucrose, an important product of photosynthesis, appears as a compound in leaves and is transmitted to all other regions of the plant. Due to its own molecular properties, sucrose is transmitted to the furthest roots and leaves without undergoing any structural changes.⁴⁶ Nourishment can thus easily reach any point in the plant.



Keratin: An Intelligent Molecule in Our Bodies

The 20 amino acids are attached to one another by peptide bonds, and these bonds constitute the *polypeptide chain*. This bonding comes about in the living cell not through random inanimate coincidences, but by means of intervention via special enzymes and organelles. Keratin is a long amino acid chain, in other words protein. The polypeptide chains that constitute keratin are bound to one another by sulfur bridge. Sulfur bridges are found among amino acids containing sulfur atoms and these bonds take the form of tiny threads, which subsequently grow in size and give rise to the cell.

All these technical descriptions given above actually define a hair cell. A single hair on your head arises from an accumulation of these cells. In other words, a hair is nothing more than keratin molecules attached by sulfur bridges. Any change in your hair leads to these sulfur bonds breaking. For example, waving or straightening hair through various processes are actually changes these microscopic molecular bonds.

(Below) Image of hair molecule seen under a microscope



Hair is flexible, because of the hydrogen bonds that give rise to keratin. Due to its elastic hydrogen bonds, hair bends and is not easily broken. But imagine the opposite! If keratin employed a different chemical bond, your hair would be very brittle and hard as wood. As a result of hydrogen bonds, such is never the case.

The bonds that give rise to hair molecules have another important feature. As hairs stretch, the sulfur bridges that keep the molecules together come to no harm. That is why however hair is combed or arranged, it can easily reassume its former shape.⁴⁷

Lightening or bleaching the color of hair generally takes place by impairing the compounds that give hair its color, usually by solutions like hydrogen peroxide that permit the oxidization of the molecules. When hydrogen peroxide bleaches hair, a large number of sulfur bridges form, which is why the hair becomes more brittle and loses its elasticity.

The sheen in hair arises from its ability to reflect light. Some hair products and shampoos affect the hydrogen ions in the keratin molecules and change the distribution of their electrical charges. As a result, the keratin molecules and micro fibril nodes grip tighter to one another and improve their ability to reflect light. These small molecular changes give hair a brighter sheen. The way that hair becomes more easily manageable after the use of hair creams is again the result of various changes at the molecular level. In hair creams, there are ionic substances that attach to keratin fibers and alter their electrical charges. This increases the mutually repellent force of hairs closely aligned with one another, making it harder for hairs to tangle around each other and break.

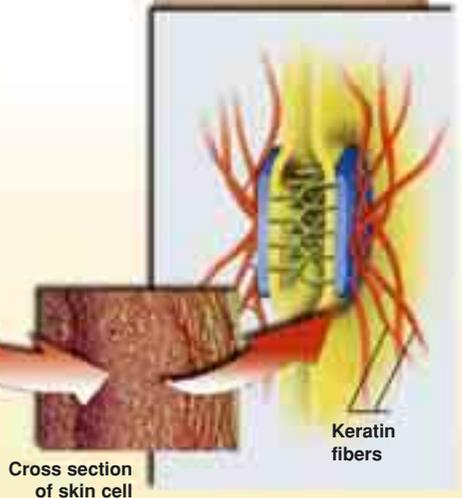
The keratin molecule appears in many forms in objects you use in daily life. Leather consists almost entirely of keratin molecules. Wool, silk, fish scale, fur and feathers also consist of keratin, as do claws and nails. Yet these structures are composed mainly of diagonal bonds with sulfur bridges. This diagonal bonding shows that keratin has been more

wrought. The molecule that emerges is stronger and harder, which is why claws and nails are so hard. Unlike the keratin in other structures, the keratin molecules that constitute silk—the solidified form of a liquid secreted by many insects and spiders—are not in a spiral form. Instead, they form hard amino acid plaques piled atop one another. You can feel this flat, layered structure when you touch a piece of silk. Silk stretches less than wool does because the polypeptide chain forming it is already extended to almost its full extent. But it is still flexible because the plaques are bound to each other by hydrogen bonds. Because of these loose hydrogen bonds, the plaques can easily slide over one another.⁴⁸

All these features reveal what a special molecule keratin is. Because of its many various features, keratin can be used in many ways and is the principal material in a great many substances. For example, skin and nails are very different from wool, yet all three consist of keratin and acquire their own particular characteristics because of keratin's specific feature. It is important for skin and hair to be elastic, yet nails must be hard. Silk needs a flat structure in order to be able to present a smooth appearance.

What's noteworthy is that in all these substances, keratin serves as a protector. With its unique molecular structure, keratin protects the skin against external factors, and determines its structure in a particular manner. With its unique molecular structure keratin makes skin protected against external factors, and determines its structure in a particular manner. To give an example, the porous nature of skin is of vital importance to human beings' survival. For example, were it not for this porous structure of the skin, it would be impossible for excess heat and water to leave the

body, and a person would develop a fever and die. Keratin represents the basis of this porous structure. At the same time, it is by means of keratin that the skin, in constant contact with the external environment, is able to withstand various microorganisms. Similarly, the protection of the hair and nails depends on the functions of this special molecule. Although there are countless molecules in nature, there is no other molecule that can replace keratin, just one of the countless blessings created to perform their own special tasks.



Keratin is the substance that protects the skin and constitutes the basis of the skin's porous structure. At the same time, it protects against external agents. Keratin is just one of the countless blessings created to discharge their responsibilities in nature.

Cellulose:

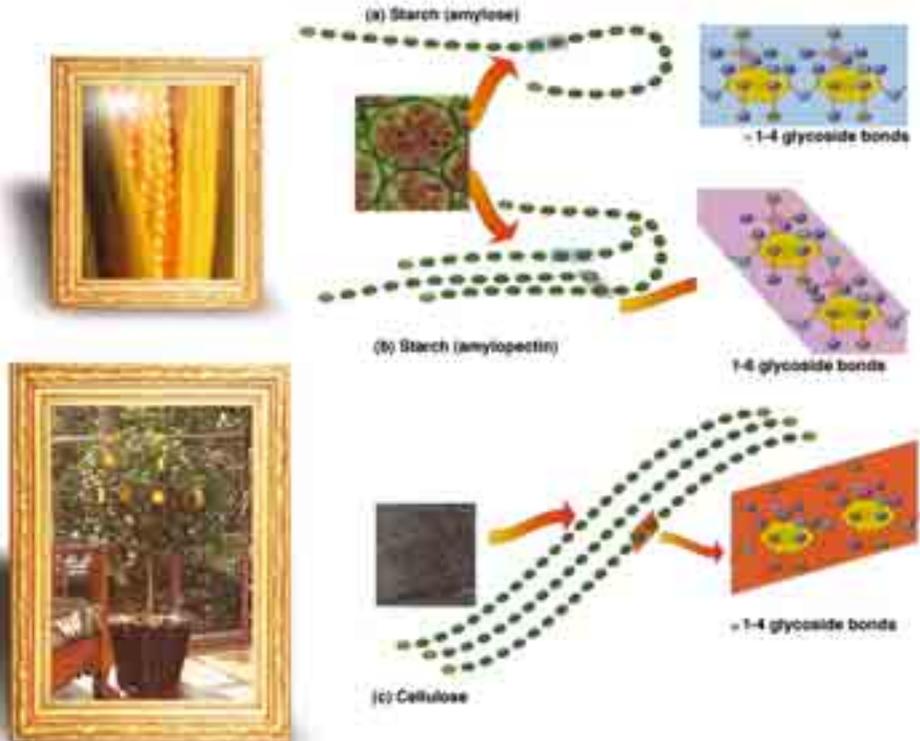
The Plant Kingdom's Most Important Architect

Many substances, from the cellular fuel transported in the blood to the nectar produced by flowers, are the result of glucose molecules combining together. One of the most important functions of glucose lies in the cellulose structure that covers a large part of the Earth. Cellulose constitutes 50% of a tree's tissue and 90% of cotton. This molecule bears a close resemblance to starch; a basic food the body digests uses as energy for growth, movement and thinking.

Starch has a similar molecular structure to that of glucose. This molecule, found in large quantities in cereals and potatoes is food storage of developing plant embryo. Seeds therefore contain high levels of starch.

Starch is a fuel for metabolism; cellulose is a special structural material for plants. The two molecules are identical; the only difference between the two is the difference in their molecular bonds. Cellulose molecules have long, straight, ribbon-like chains supported by hydrogen bonds among them. These flat ribbons are packaged together and the bonds between them fixed to form a hard solid mass. It is the curves in these bonds that cause starch and cellulose molecules, which are structurally the same, to exhibit completely different characteristics.⁴⁹ The coming together of unconscious atoms flawlessly once again shows the superiority of the creation in the world. The special links between atoms offering a difference sufficiently wide as to give rise to two basic materials shows a delicate balance that cannot be accounted for in terms of chance. Allah has created this special structure, as He has all things in the universe.

The properties of cellulose go further, however. Cellulose, the main structural material of the plant cell wall, is a hard substance, insoluble in water and is found particularly in the protective cell walls of plants and all the woody tissues of trees. Some plants inhabit possibly harmful environments. They are sometimes immersed in salt water or snowmelt or lake waters where mineral levels are increased. To protect themselves



Starch is fuel for metabolism. Cellulose is a structure peculiar to plants. The only thing that distinguishes the two is the difference in their molecular bonds.

from these harsh environments, they need a very sound cell wall. For that reason, there are packaged cellulose groups in all plant cells.⁵⁰

Despite being a polysaccharide, a sugar molecule like starch, cellulose cannot be digested by human beings. That is because the glucose units in cellulose are attached to one another with glycoside bonds. Mammals' digestive tracts have no enzyme able to break down this bond. That's why that cellulose is not a source of food for us. Cellulose can, however, be digested by ruminants, because in their digestive tracts, these animals host microorganisms that secrete cellulose enzymes. By means of these enzymes, ruminants can break down the cellulose they eat without difficulty and turn it into a form of food and energy.⁵¹



Cellulose is the main building material in a plant's cell walls. As a result of the tightly packed cellulose groups holding their cells rigid, plants withstand even the harshest conditions.

Termites also use cellulose for foodstuff, because in their digestive tracts a microorganism called *trichonympha* secretes an enzyme that breaks down cellulose. That is why termites generally prefer woody structures and use them as foodstuffs while burrowing into them.⁵²

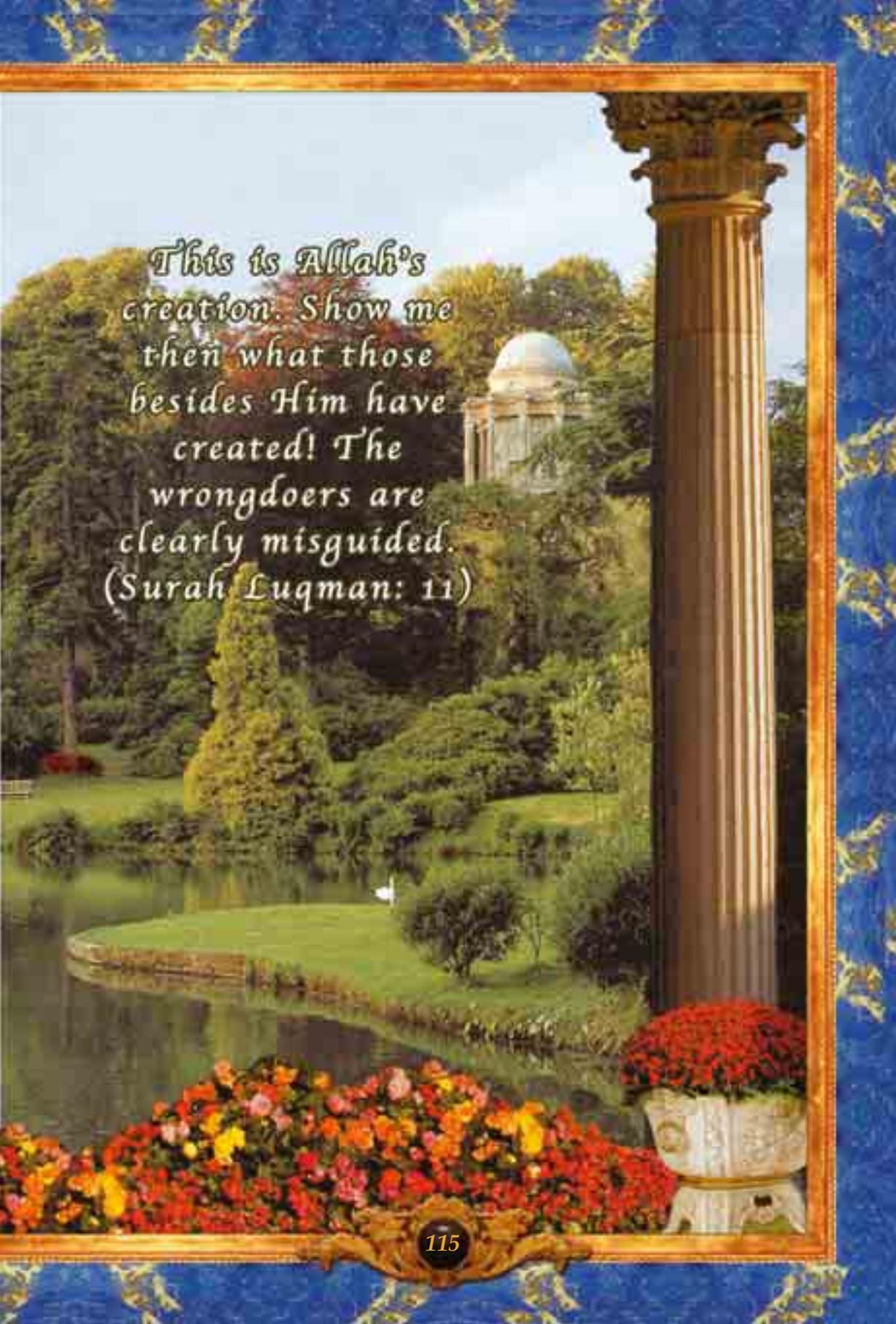
No doubt that it would not be difficult for the tiny termite to find appropriate food. The reason it prefers a foodstuff incompatible with its metabolism is most important evidence for those eager to see the miracles created by Allah. This insect, less than 1 centimeter (0.04 of an inch) long, needs a microorganism in order to secure nourishment, which microorganism assumes its place in the termite's intestines as if instructed to do so. These microorganisms are ready to ensure digestion in all termites, and all termites make use of cellulose. As in all things, the law of Allah operates in the termite's obtaining its daily food. In this minute creature, Allah shows a flawless miracle of creation as a deterrent and a lesson. As He has revealed this in the Qur'an:

How many creatures do not carry their provision with them! Allah provides for them and He will for you. He is the All-Hearing, the All-Knowing. (Surat al-'Ankabut: 60)

These mutually dependent systems in living things did not come into existence by chance. If a single random event were to take place, the entire order would become disorderly and the system will become

non-functioning. For example, if once deprived of cellulose's protective effects, plant cells will be unable to withstand their external environment and will soon die. Alternatively, if cellulose lacked its special, folded molecular structure, then it would be an ordinary molecule easily soluble in water. These, of course, are only a few possibilities, since a single chance event in the formation of a molecule will inevitably change that molecule's properties. When coincidences enter the equation, it is difficult to speak of the possibility of a series of planned and conscious events taking place. In fact, however, atoms do combine in an exceedingly conscious and planned manner, according to duties specially given to them. This sublime planning and consciousness could never emerge accidentally, even if all possibilities were mobilized. All this is clear proof that Allah has created life. Refusing to accept this truth is a major loss for no one besides the individual concerned. Even if someone denies it, that does not alter the fact that Allah has created all things. In one verse, He imparts the tidings that even if people harbor their doubts, He pervades all things:

**What! Are they in doubt about the meeting with their Lord? What! Does He not encompass all things?
(Surah Fussilat: 54)**

A vibrant, detailed illustration of a garden. In the foreground, there is a large, colorful bed of flowers in shades of red, orange, and yellow. To the right, a tall, fluted classical column stands next to a white, ornate planter filled with red flowers. In the middle ground, a calm pond reflects the surrounding greenery. A white swan is visible in the water. In the background, a lush forest of various trees surrounds a white domed building with classical architectural features. The entire scene is framed by a golden border, and the background behind the frame is a blue patterned fabric.

*This is Allah's
creation. Show me
then what those
besides Him have
created! The
wrongdoers are
clearly misguided.
(Surah Luqman: 11)*

Adhesive Molecules

When a vase breaks when the broken parts approach one another, a molecular attraction forms. Under normal conditions, the two parts should adhere to each other as a result of this force stemming from the molecules drawing near one another, a force known as the "Van der Waals" force, which arises from the attraction of the opposite poles of atoms close to one another. This attractive force is rather weak, yet when the attractive forces among countless atoms are all added together, they give rise to a measurable adhesive force.

In view of this information, you might assume that when a vase's handle is broken off, it would be enough to squeeze the two fragments together again. Shouldn't the high attraction arising between the atoms be enough to bond the two fragments tightly together?

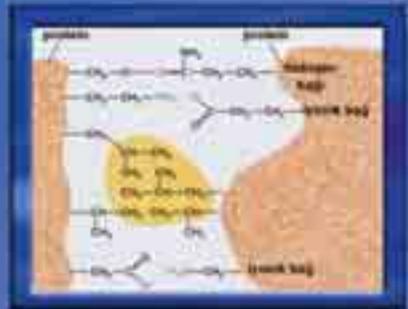
Generally, it shouldn't. You can never repair fragments merely by holding them together, because the distance between the separated molecules must not exceed a few angstroms. Only then can Van der Waals force have any effect. One angstrom is just 4×10^{-9} inch, and even on surfaces that you may assume to be very smooth, there are actually peaks measuring up to 400 angstroms (1.6×10^{-6} of an inch) high. Therefore,



When a glass is broken, the adhesive between the parts allows a bond to form between the main body and the broken piece. The two parts' sticking together is nothing but an increase in the molecular attraction between the two.



(Left side) Adhesive material seen under the microscope

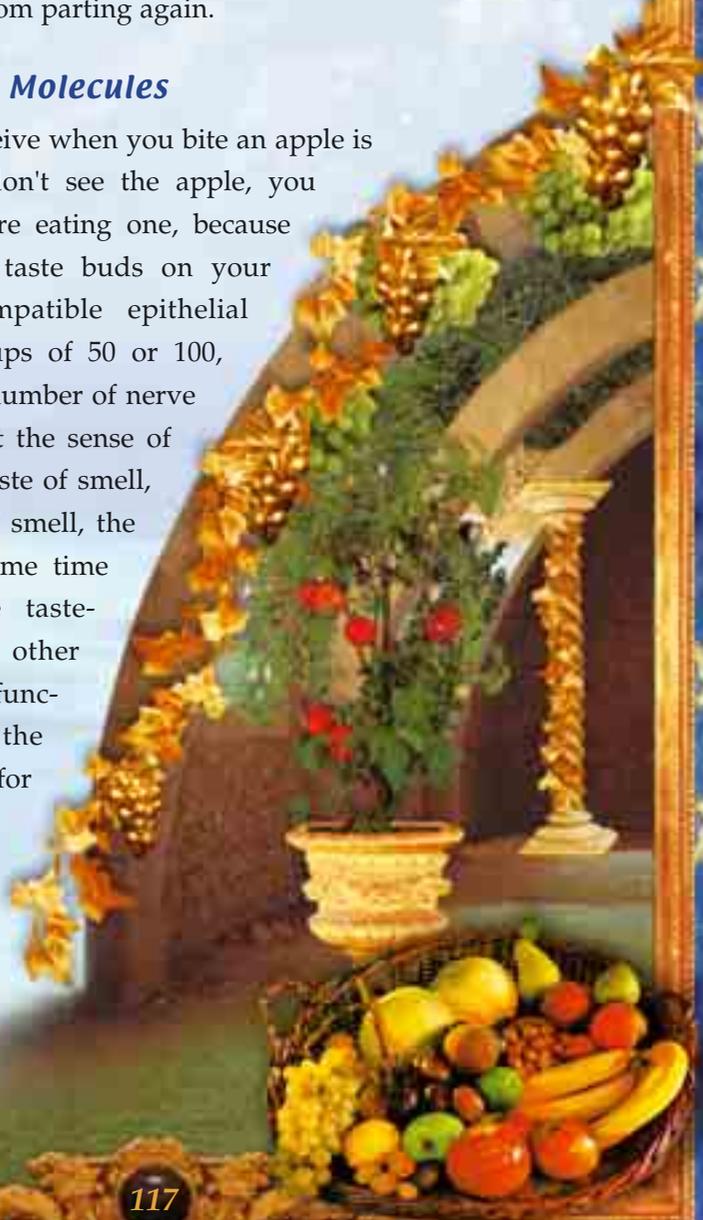


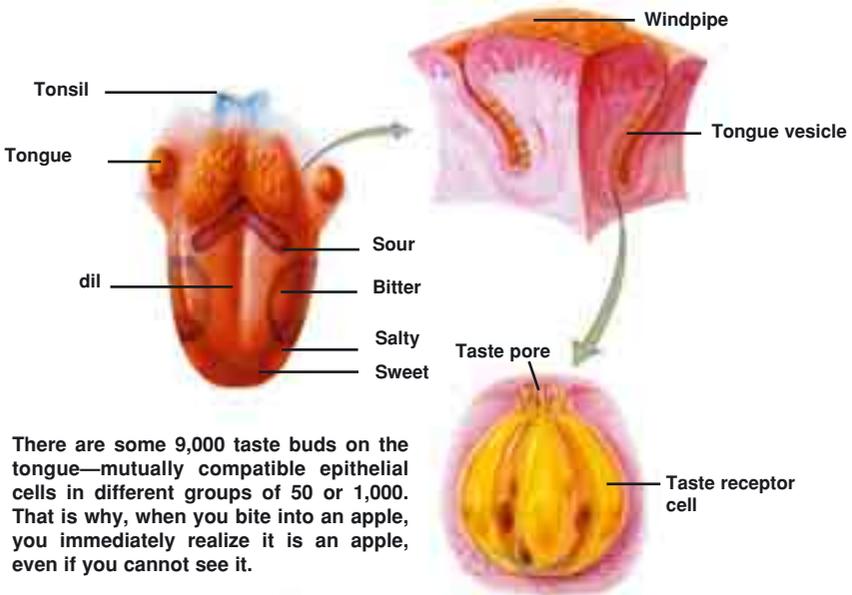
even if surfaces fit together perfectly, it will be impossible to secure a sufficient proximity among their molecules.

The secret of glue is that its adhesive molecules form a bond between the molecules on two surfaces and thus helps bind them together. Particularly in a liquid state, glue provides the necessary closeness for Van der Waals force to emerge. The force that emerges when this closeness is great by itself and the solidified glue prevents nobody the broken fragments from parting again.

How You Taste Molecules

The taste you perceive when you bite an apple is familiar. Even if we don't see the apple, you would know that you're eating one, because there are some 9,000 taste buds on your tongue—mutually compatible epithelial cells divided into groups of 50 or 100, which possess a small number of nerve endings. In that respect the sense of taste differs from the taste of smell, because in the sense of smell, the receptors are at the same time nerve endings.⁵³ The taste-receptor cells, on the other hand, have different functions. One region of the tongue is responsible for





perceiving *sweetness*, another part for detecting *bitterness*, and others for *sourness* and *saltiness*. Bitter can never be perceived in the sweet region, or sour in the bitter region.

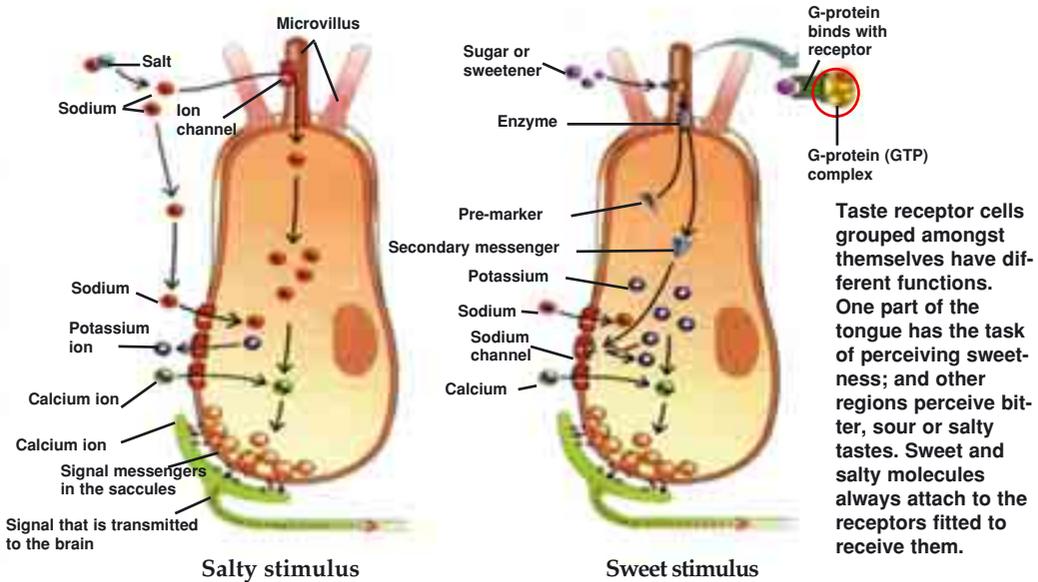
The region at the front of the tongue that serves to perceive sweetness is composed of glucophores.⁵⁴ There is protein in the glucophore structure. When any taste molecule from the outside reaches this region, it establishes a hydrogen bond with that protein molecule and sends a signal to the brain. In this way, you establish that what you are eating tastes sweet and is—in our example—an apple.

But how does the glucophore recognize the taste molecule? The glucophores can distinguish groups of atoms with specific geometrical arrangements. The front of the tongue perceives sweetness because molecules of an appropriate structure are able to bond there. We may compare the entire tongue to a sort of jigsaw puzzle. Pieces appropriately shaped to fill empty spaces settle onto predetermined areas. Depending on where they settle on the tongue, they set up sensations. Sweet molecules can never fill the empty spaces on the region determined for sourness, because their geometrical shapes cannot fit.

The way that receptors on the tongue possess special gaps pre-determined for them is a great creation. The property of the molecules that make sweets taste sweet, or bitter things taste bitter, has been specially set out, and the tongue's regions have been so created as to bond to these molecules. Planning and intelligence are necessary for all these things to have taken place.

It is surely no coincidence that a mechanism in the tongue should be able to perceive the flavors in foods. It is a great blessing created by Allah for human beings. The forms of molecules invisible to the naked eye give rise to different sensations and different tastes, and the tongue has been created in line with them. It is impossible for the tongue to have developed independently of the taste molecules outside in the environment. This linked creation clearly demonstrates that taste molecules and the tongue are not independent of each another, and that both are the work of the same Creator.

TASTE CELLS



This represents another major impasse for the theory of evolution. There is no logical justification for structures so mutually compatible, in such great harmony with each other, to come into being by chance.

As you have seen, everything around us, including every atom in our own bodies, shows us the existence, infinite might and omniscience of Allah.

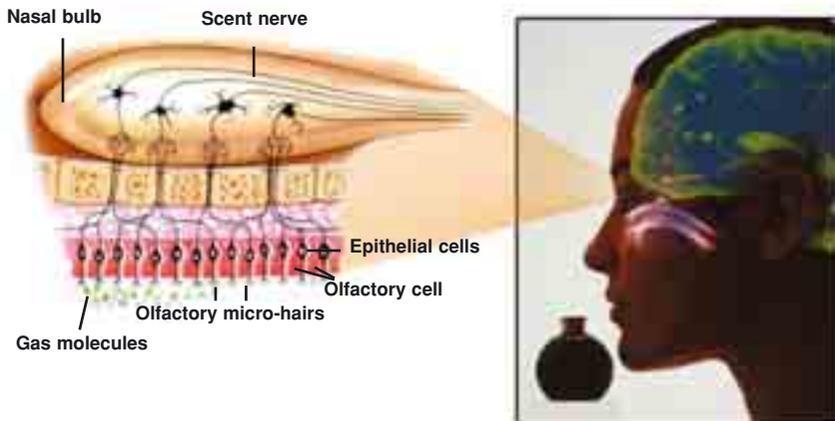
Based on this "jigsaw puzzle rule," various artificial sweeteners have been developed that are as compatible as taste molecules to the gaps in the tongue. The tongue's sweet-perception region is specially developed in order to bond with compatible molecules, so that a sensation of sweetness forms in the brain. This enables sweeteners to be made with low-calorie contents and which do not exhibit the properties of sugar.⁵⁵ This emphasizes the fact that whatever taste we receive is merely a perception. That the brain perceives the substance as sweet even though it contains no sugar is clear evidence of a sensory system inside the brain, independent of outside matter. There is in fact no sugar in sweeteners, but we imagine that there is. That being so, how can we ever be sure whether sugar actually exists? Since we ever have direct dealings with our perceptions only, we can never be certain.

Beyond all these molecules, shapes and chemical bonds, what perceptions reach the brain are merely electrical signals. The brain perceives certain signals as sweet, but the criteria by which it distinguishes this signal is unclear. Electrical signals from the tongue progress reach the brain along nerves consisting of fat, water and protein, as is true of all our senses. Therefore, is a banana or a piece of chocolate really sweet? Can you be sure? You cannot be certain. Everything in the outside world reaches our brains in the form of electrical signals, so we can never have direct contact with the originals existing "out" in that world. Therefore, the candy you eat tastes sweet because your brain perceives the electrical signals reaching it as sweet. Yet in fact, you have absolutely no evidence whether it really is.

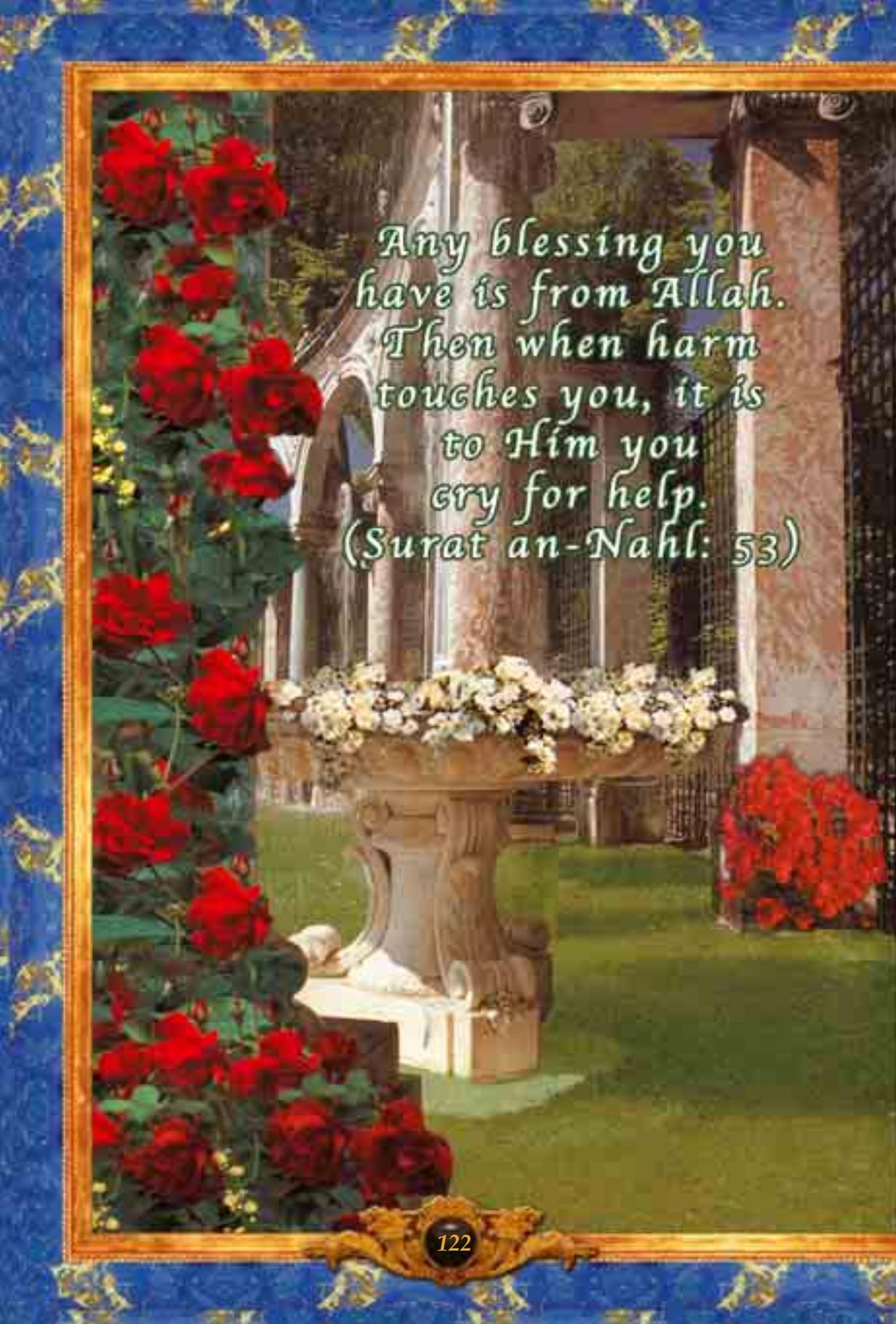
We Smell Molecules

When you smell a rose, similarly, what reaches you are actually scent molecules belonging to that flower. The scent-perception system in the nose resembles that in the tongue. Molecules settle into gaps specially set out for them, establish chemical bonds with the proteins there, and signals are forwarded to the brain to give rise to the perception of smell.

We perceive various scents on a sensitive membrane in the nose known as the nasal epithelium, which contains some 50 million nerve cells. And each nerve cell contains several proteins that possess various geometrical forms that are compatible with scent molecules. A scent molecule of appropriate form can attach to one of the protein molecules there. Polarization thus takes place, giving rise to electrical signals that reach the scent-perception zone located just beneath the forehead.⁵⁶ Here, the information arriving from different cells is analyzed and forwarded to various cerebral structures, where the nature and origin of the smell are determined. In order for a signal to start to go to the brain, it is enough for just part of the molecule to fit its predetermined area.



There are some 50 million nerve cells on the nasal membrane. These cells possess various geometrical shapes to be compatible with scent molecules. The scent molecules can attach to the protein suited to their own shape and initiate polarization. This produces an electrical current, and these signals are sent to various cerebral structures, where the nature and identity of the smell is determined.



Any blessing you
have is from Allah.
Then when harm
touches you, it is
to Him you
cry for help.
(Surat an-Nahl: 53)

This, as you have already seen with regard to taste perception, is a kind of lock-and-key system. For perception to take place, the two shapes have to be completely compatible. The key must fit the lock, for the two molecules to clamp together. If a molecule is flexible, it may fit more than one region, and a confused situation arises in which odors may resemble one another. Or from a single aroma, we may form an image in our minds of more than one object. The scent of a flower reaches our nose, but we may also think it resembles a perfume or a fruit.

In order for a scent to be perceived, its molecules must be both airborne—in order to reach the nasal epithelium—and soluble in water. Being soluble, they can dissolve in the mucus released by cells in the nasal epithelium. If the molecule does not dissolve in the mucus, however, then organic molecules in the mucus flush the insoluble molecules to other specially charged regions, where the molecules may combine with a relevant protein.⁵⁷ In this way, perception of the same scent arises. This special precaution takes into account the possibility that scent molecules may not be water-soluble. Either way, the brain perceives the arriving scent molecules.

Smells differ from one another according to the protein structures to which these scent molecules bond. When you smell a rose, you are unaware that molecules and proteins in your nose are compatible with one another and are engaged in chemical activity. Yet the scent that reaches you from the rose always forms bonds with the same type of proteins, which is why you immediately recognize a rose's smell, even if you cannot see or touch it. Scents from a rose never bond to a different protein in your nose to awaken the memory of a strawberry. You can never make such an error, because this molecular structure operates flawlessly. By means of the impeccable system here, you can detect not just the difference between two smells, but to distinguish between the countless scent molecules on Earth, whether they are familiar to you or not.

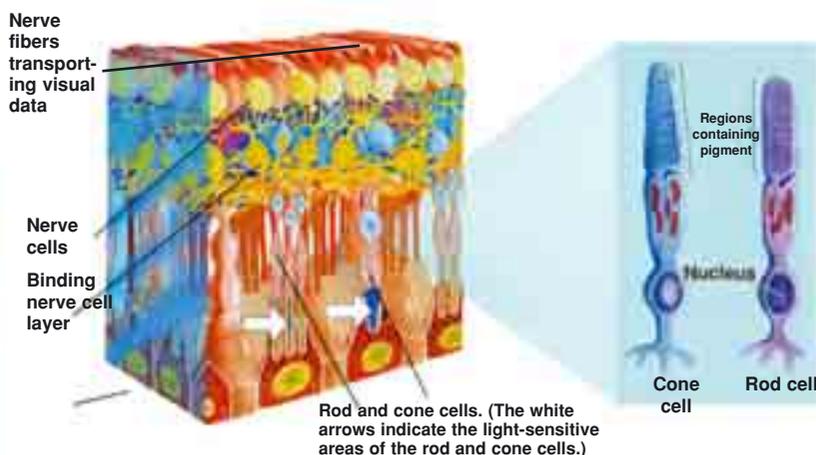
The Molecules That Let You See

Molecules in your eyes again perceive molecules. Molecules are responsible for the color we perceive in objects, and at the same time, molecules in our eyes react to the light entering from outside.

Many natural colors form as a result of special molecules that give rise to them. Trees in the street and the flowers in gardens owe their colors to these molecules. These molecules are also responsible for the color of your skin, hair and eyes.

Before we examine the molecules that give rise to—and respond to—colors, recall the kind of activity involved in seeing. The retina contains two types of receptor cell: rods and cones. The 1 billion or so rod cells perceive darker shades of light, but do not distinguish colors. The 3 billion or more cone cells perceive bright light and do distinguish colors. Every receptor cell contains light-sensitive molecules, and their reactions to light determine the message sent to the brain.

The retina's molecules that make sight possible are hydrocarbon groups, bonded in a special way. The bonds that give rise to these molecules are inflexible, making the chain rather strong. The second impor-



The retinal molecule that permits the vision process is a hydrocarbon group, bonded in a special way. The bond is inflexible, and the electrons in the chain are loosely attached to one another. Able to move with ease, these electrons can absorb energy from the light falling onto the molecule.

tant feature of these bonds is that the chain's electrons are loosely bound to one another, so that these electrons can easily move to new regions. Due to that easy movement, the molecules can easily absorb energy from any light falling on them, and can conserve this energy for their own electrons to enter a new arrangement.⁵⁸

By way of this property, a retinal molecule can perceive all forms of light falling on it. This system permits us to see all the details around us. Allah has made the miraculous system in our eyes depend on electrons that are able to easily store energy in order to be able to move. These complex systems came into being merely through Allah telling them to "Be!" As He has revealed this in the Qur'an:

It is He Who created the heavens and the Earth with Truth. The day He says "Be!" it is. His speech is Truth. The Kingdom will be His on the Day the Trumpet is blown, the Knower of the Unseen and the Visible. He is the All-Wise, the All-Aware. (Surat al-An'am: 73)

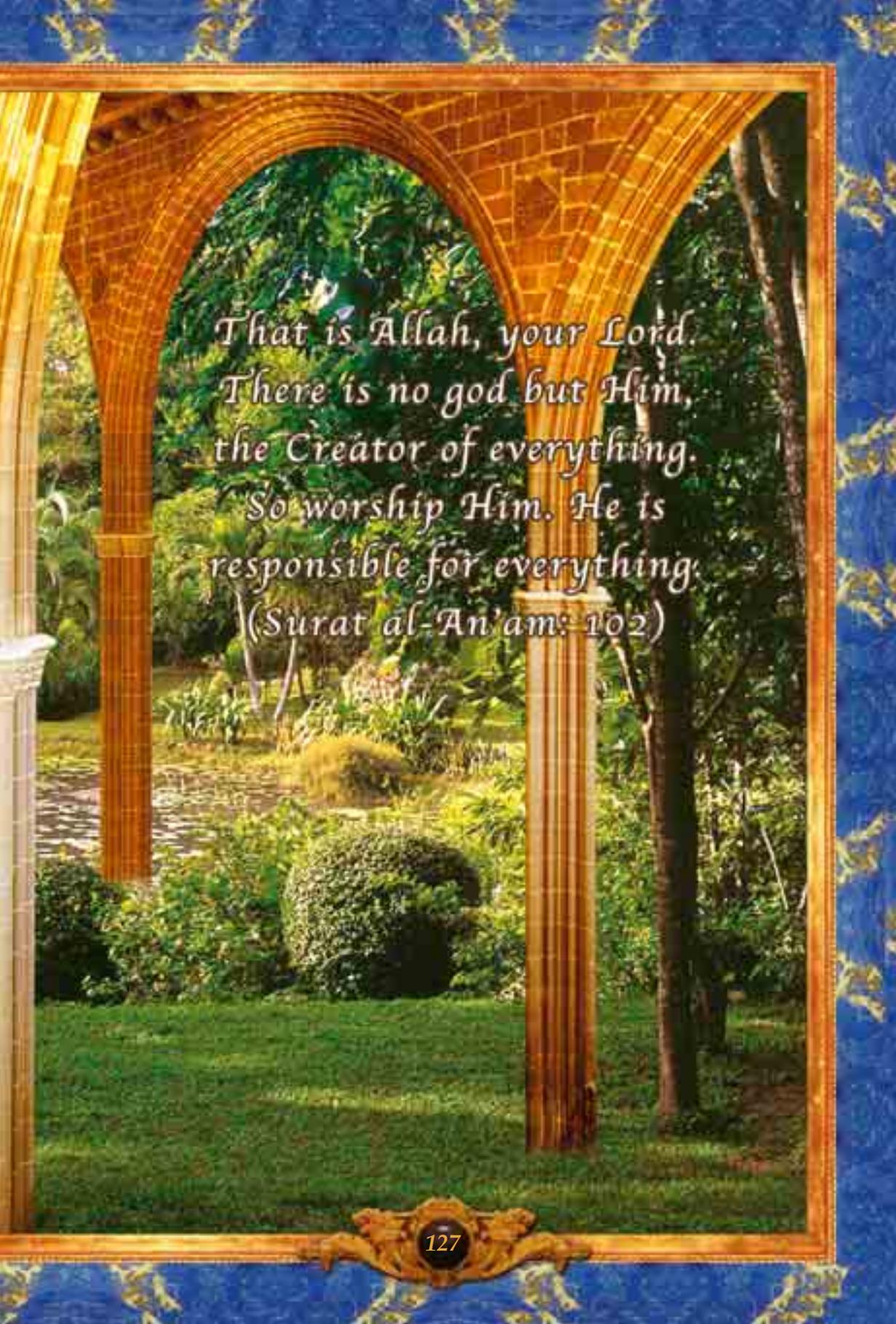


MOLECULES ARE THE SOURCE OF COLORS

THE CHLOROPHYLL MOLECULE: THE MOST IMPORTANT ELEMENT OF THE CHAIN OF LIFE

Photosynthesis is a chemical process carried out by green plants and certain single-celled organisms that use sunbeams as a source of energy, combine carbon dioxide and hydrogen, and thus produce foodstuffs and as a byproduct, free oxygen. The end result of photosynthesis performed by these organisms is that we can absorb that stored solar energy into our bodies. In the absence of a process like photosynthesis, life would be impossible.

The only reason that certain organisms can carry out photosynthesis is that they possess a chlorophyll molecule. With it, any living thing will need nothing more than its own resources to obtain food and survive. It can take energy to create food directly from the Sun. However, the existence of that chlorophyll molecule and the performance of these processes are not easy. Despite our knowledge of the chlorophyll molecule's structure and our 21st-century technology, photosynthesis has still not been replicated artificially. In order for this molecule to



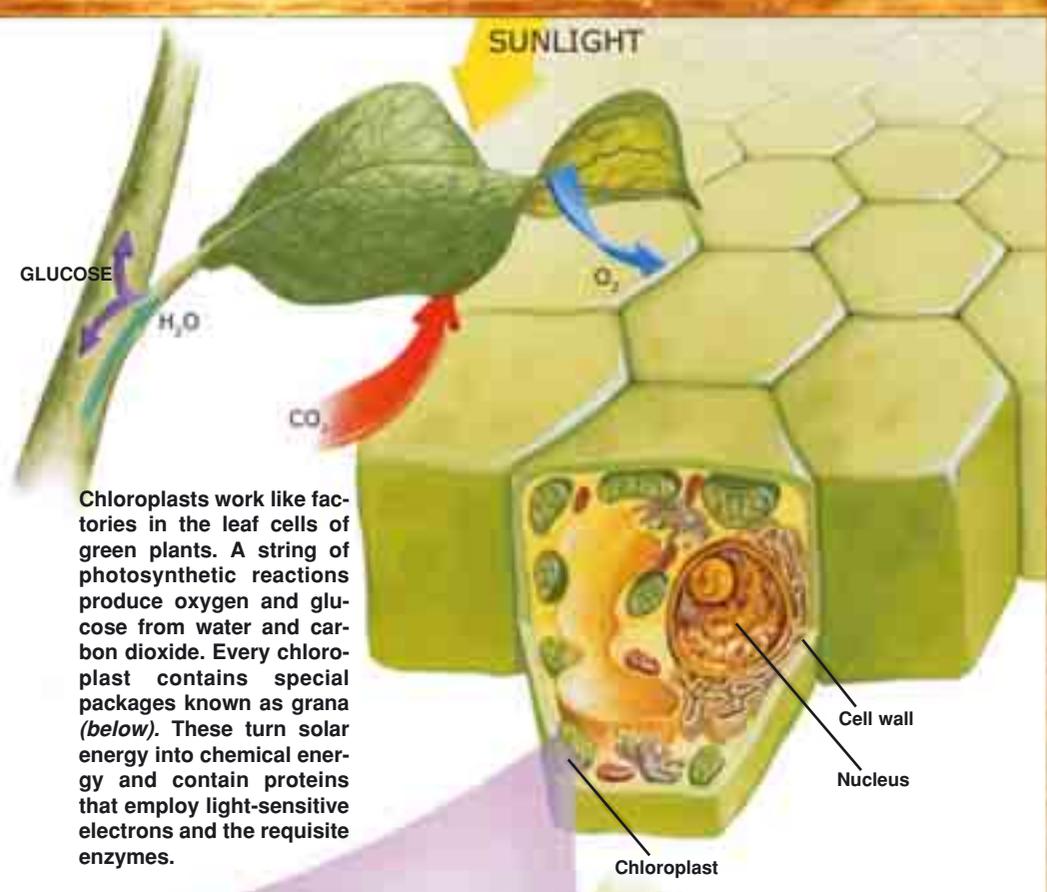
That is Allah, your Lord.
There is no god but Him,
the Creator of everything.
So worship Him. He is
responsible for everything.
(Surat al-An'am: 102)

be able to operate in a plant and fulfill its duty, hundreds of enzymes must come into play.

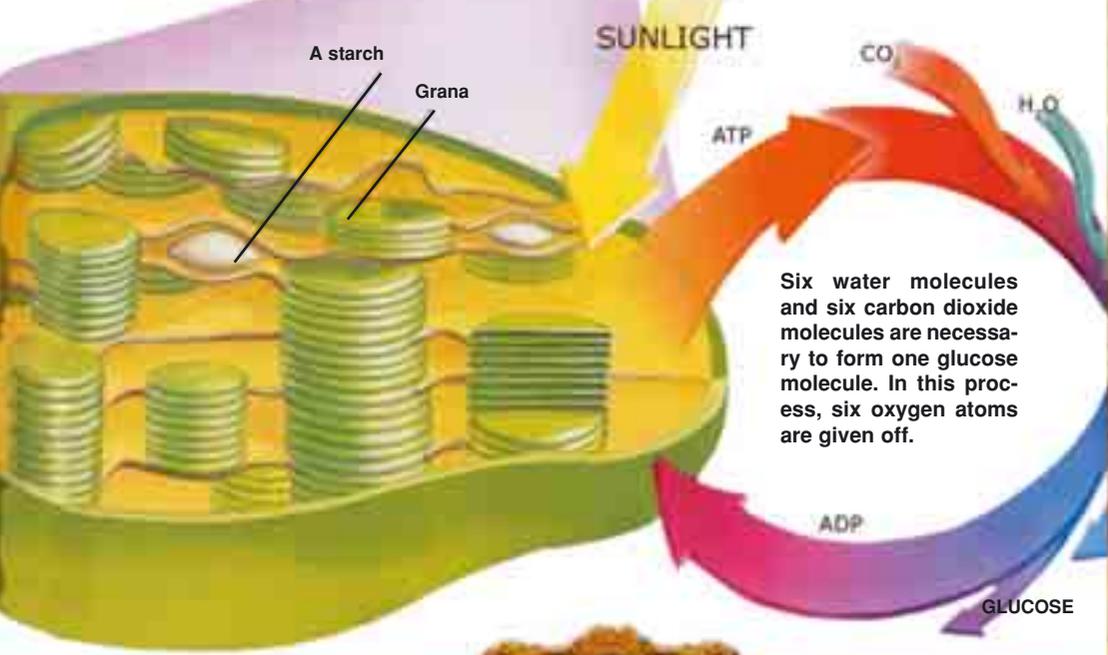
The processes carried out during photosynthesis are exceedingly complicated. As chlorophyll converts light from the Sun into chemical energy, a process known as the electron transfer system begins. Water molecules are broken down, and hydrogen and oxygen atoms will be released. That's how plants establish the oxygen balance in the world. If this molecule and the enzymes that set it in motion did not exist, then there would not be a single trace of life on Earth.

The structure containing chlorophyll molecules is the chloroplast, in which there are small, round structures known as grana. Chlorophyll molecules are present inside the grana, and some of the stages of photosynthesis take place in this region. When exposed to sunlight, the chloroplast becomes active and constantly moves through the leaf cell, to be able to obtain maximum productivity from sunlight. The pigment in the chloroplast is green, which is why living things capable of photosynthesis are green. The color green is able to absorb both violet and red light, since the wavelengths that comprise these colors are the source of energy for the photosynthesis process.

The scope of the process these tiny molecules perform is exceedingly large. Plants use an estimated 280 billion tons of water and 680 billion tons of CO₂. The amount of oxygen they release into the atmosphere is 500 billion tons.⁵⁹ These figures underscore the importance of this process carried out by this miraculous molecule, installed with a flawless arrangement, in every green plant in the world. Hundreds of enzymes have been given duties so that these molecules can go into action. Photosynthesis is a proof of creation that is sufficient to stymie evolutionists, who seek to account for the origin of living things in terms of chance.



Chloroplasts work like factories in the leaf cells of green plants. A string of photosynthetic reactions produce oxygen and glucose from water and carbon dioxide. Every chloroplast contains special packages known as grana (*below*). These turn solar energy into chemical energy and contain proteins that employ light-sensitive electrons and the requisite enzymes.



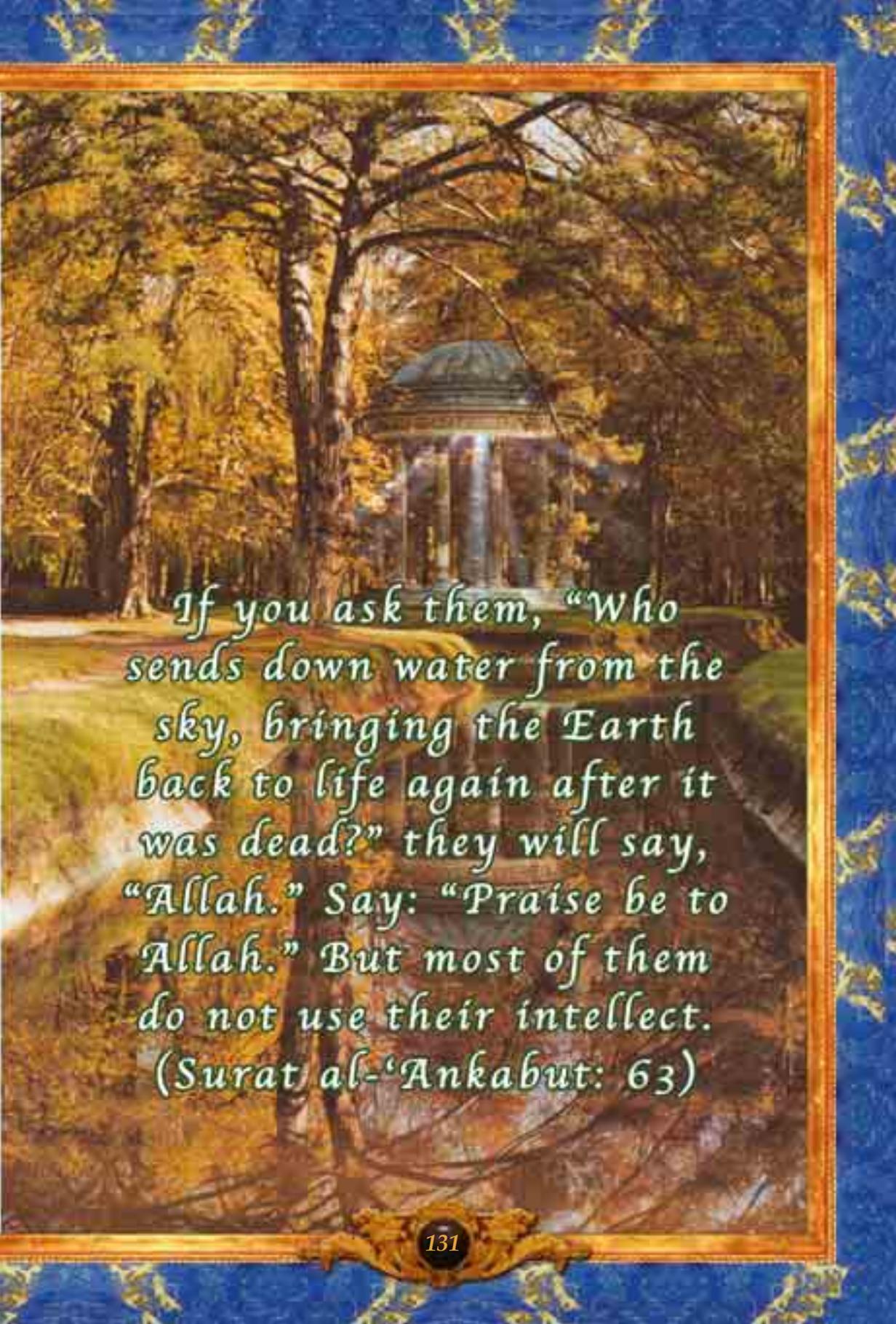
Six water molecules and six carbon dioxide molecules are necessary to form one glucose molecule. In this process, six oxygen atoms are given off.

THE CAROTENE MOLECULE: ANOTHER SOURCE OF ENERGY

The color orange is provided by the carotene molecule. The bonds that give rise to carotene are the same as those that give rise to the retinal molecule, and because of these bonds, both the carotene and retinal molecules are solid and inflexible. Secondly, even if these molecules' loosely bound electrons encounter low-energy light, they are immediately ready to go into action and absorb those photons into their own structures.

Carotene absorbs indigo light, for which reason it reflects orange light. This is the special molecule that gives carrots their color. The light-cream color of milk and the yellow of butter also stem from the presence of carotene molecules. Meat fats also take their light-yellow hue from the carotene molecules that animals consume. And because of their hydrocarbon structure, these carotene molecules can dissolve in fat. In photosynthetic organisms like algae and plants, carotene emerges together with chlorophyll. The carotene collects a certain spectrum of the solar rays that chlorophyll cannot absorb. A leaf generally contains three chlorophyll molecules for every carotene molecule. The darker green a leaf, the greater its concentration of carotene. The yellowish-orange color of carotene is suppressed by chlorophyll until autumn. When autumn comes and the chlorophyll molecules are weakened, the carotene molecules make their appearance.⁶⁰ That is why leaves turn yellow in autumn and there is such an impressive change in trees' colors.

No other molecule in the world possesses the same features as carotene and chlorophyll, which give life to Earth and provide such beautiful seasonal variety. No similar molecules are available, not even by artificial means. Like everything else in the universe, these are blessings from Allah. Contrary to what evolutionists would have you believe, it is impossible for random coincidences to give rise to anything resembling these tiny molecules. Man is absolutely dependent on Allah for all he does. To understand this, all you need is to realize that the absence of a single molecule might lead to the end of human life on Earth. Nearly every one of the molecules cited in this book is a clear example of this.



If you ask them, "Who sends down water from the sky, bringing the Earth back to life again after it was dead?" they will say, "Allah." Say: "Praise be to Allah." But most of them do not use their intellect.
(Surat al-'Ankabut: 63)

MELANIN: ANOTHER COLOR-PRODUCING MOLECULE

Melanin molecules are held together by the bonds that form the carotene molecules. By means of these bonds, melanin is able to absorb all the wavelengths of light that strike it, which is why an object containing melanin appears dark. Melanin molecules bond to protein molecules and accumulate in granules whose colors vary from yellow to brown, and even black. These granules impart their colors to our skin and hair, which may be brown or black, depending on how the molecules accumulate in the granules.

Melanin is also a component of the chameleon's color-changing mechanism: The molecule is carried by channels inside the skin, where it covers up brighter pigments in the lower layers. Animals like the octopus, which can swiftly darken its colors, also make use of this molecule, and in the same manner. Color changes take place in their bodies as a result of the spreading of melanin granules. When the melanin granules cluster together once more, the color of the skin lightens.

When fruit goes rotten, melanin of different kinds also forms. The decaying fruit's cell walls become damaged, and these membranes cause an enzyme called phenoloxidase to go into action within the cell. This enzyme is not found in lemons, melons or tomatoes. However, the browning that accompanies decay in fruit such as peaches is the result of melanin molecules. Melanin is also the molecule responsible for the dark color of tea. ⁶¹



Do not assume, on the basis of the information provided above, that the melanin molecule alone is responsible for producing colors. It not only imparts color, but also protects against ultraviolet rays and visible light. By way of melanin, your skin is protected against harmful and solar rays. Were it not for this pigment, your skin would soon redden and blister from



As well as giving your skin its color, melanin also protects you against ultraviolet rays and visible light. If this special protection that Allah has created is missing, skin cancer can soon result.

the ultraviolet rays and cause permanent damage. Indeed, certain diseases resulting from lack of the melanin—such as albinism—cause the skin, hair, eyelashes and eyebrows to lose their pigmentation. The skin becomes exceptionally sensitive to ultraviolet light. Deprived of the special protective effects of melanin, sufferers may soon develop skin cancer.

Melanin's protection also continues in the eye, one of our most sensitive and valuable organs. Melanin is the source of color in the iris, and by means of its light-absorbent qualities, it protects the lens against ultraviolet rays and reduces the risk of cataracts. Under normal conditions, the eye would be the organ most damaged by ultraviolet rays. But by means of melanin, we are never exposed to such a risk. Melanin pro-

vides extra protection by filtering different colors incompatible with the retinal receptors and which might damage the retina. In this way, your sight is never affected by the light outside, and is never harmed. Melanin raises the quality of your vision by reducing the admission of blue light and dazzling rays. However, since blue light is not eliminated entirely, the color balance is maintained.⁶²

In conclusion, many factors affecting vision, from the protection of the eye to color quality, depend on the activities of the melanin molecule. The way that this molecule seemingly knows just how to protect the eye and the skin is the work of Allah's immaculate creation. Above all else, the molecule must first know that the eye is an organ used for perceiving light and must estimate the retina's sensitivity to. Then it must become aware of its own protective nature and locate itself where it may protect this sensitive organ. Of course, this all requires consciousness. People who understand the Source of this consciousness will realize that nothing exists of its own accord. Melanin's being present at the right location in the eye and at just the proper quantity definitely shows the existence of a purposeful creation. Everything that has been created is too flawless to leave room for the slightest doubt. It is easy to see this immaculate creation at every point of the universe. Yet it takes reason to understand this and direct thankful appreciation to the Lord. Believers who view the magnificent creation around them and give thanks to Allah are described in these terms in the Qur'an:

In the creation of the heavens and the Earth, and the alternation of night and day, there are Signs for people with intelligence: Those who remember Allah, standing, sitting and lying on their sides, and reflect on the creation of the heavens and the Earth: "Our Lord, You have not created this for nothing. Glory be to You! So safeguard us from the punishment of the Fire." (Surah Al 'Imran: 190-191)

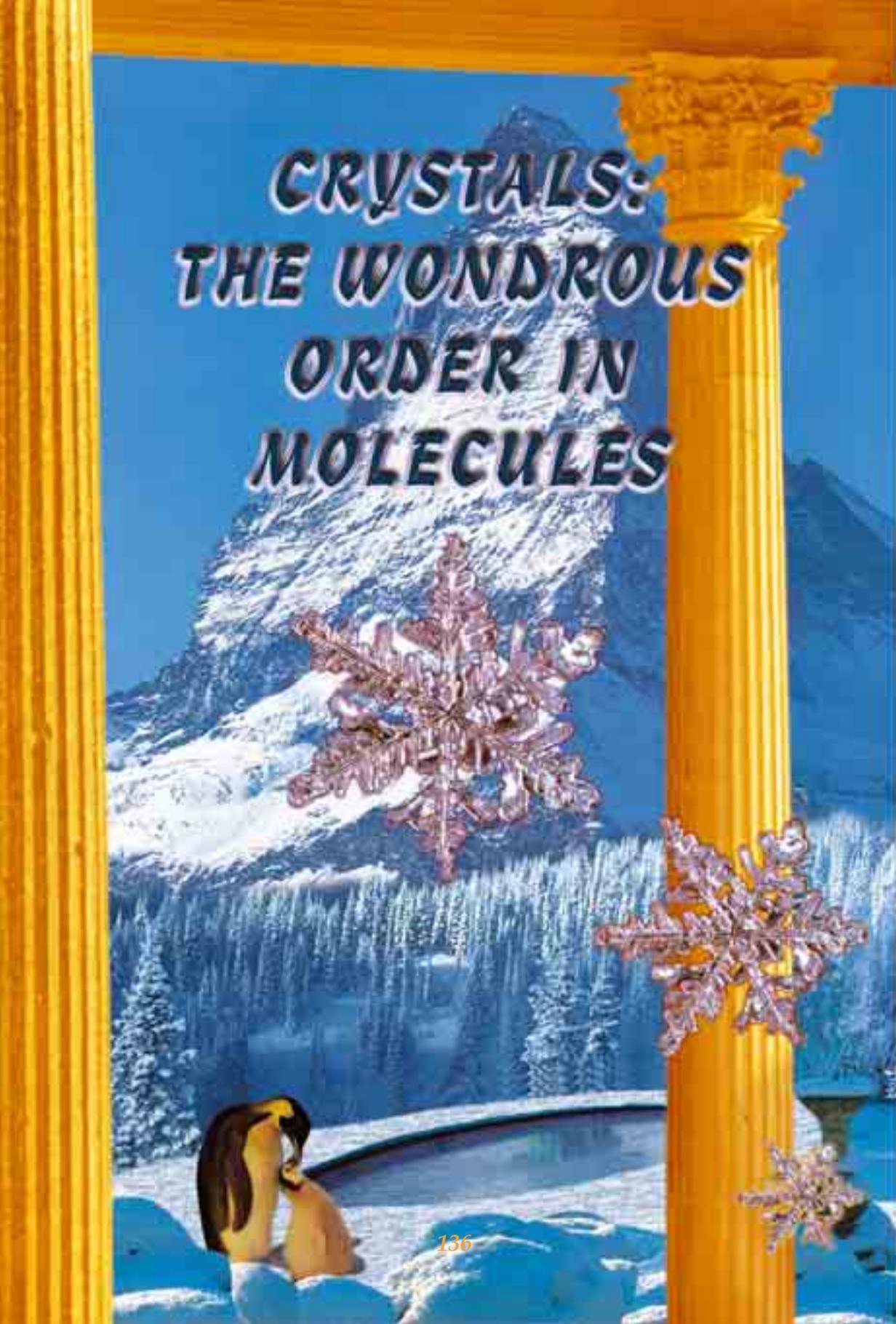
We have introduced all these color-generating molecules and their properties to show that the lively colors you see around you at every moment are nothing but the movement of electrons. Pigments' colors

form as a result of the bonding of several of nature's 109 atoms in different ways, and thus come to constitute pigments that absorb and reflect discrete wavelengths of light. To establish this variety, Allah has made not just the atoms responsible, but also the various ways in which they are assembled and attached.

Everything that exists is composed of the same identical particles—protons, neutrons, and electrons. Yet the world that emerges as a result is truly dazzling, a work of art brought about by the will of Allah. Everything that is miraculous and matchless displays the power of our Almighty Lord, Who doubtless has the power to create similar and even greater things than these.

Evolutionists seek to account for His magnificent creation in terms of chance, and so fall into the error of denying His existence. In fact, however, Allah's Presence is everywhere. Everything, from the tiniest speck of dust, is a part of His artistry in all its detail. Molecules included everything from the smallest to the largest in the heavens and Earth, constantly and clearly declares the greatness of our Lord, Who sets out the truth of this in His verses:

He is Allah—there is no god but Him. He is the Knower of the Unseen and the Visible. He is the All-Merciful, the Most Merciful. He is Allah—there is no god but Him. He is the King, the Most Pure, the Perfect Peace, the Trustworthy, the Safeguarder, the Almighty, the Compeller, the Supremely Great. Glory be to Allah above all they associate with Him. He is Allah—the Creator, the Maker, the Giver of Form. To Him belong the Most Beautiful Names. Everything in the heavens and Earth glorifies Him. He is the Almighty, the All-Wise. (Surat al-Hashr: 22-24)



**CRYSTALS:
THE WONDROUS
ORDER IN
MOLECULES**



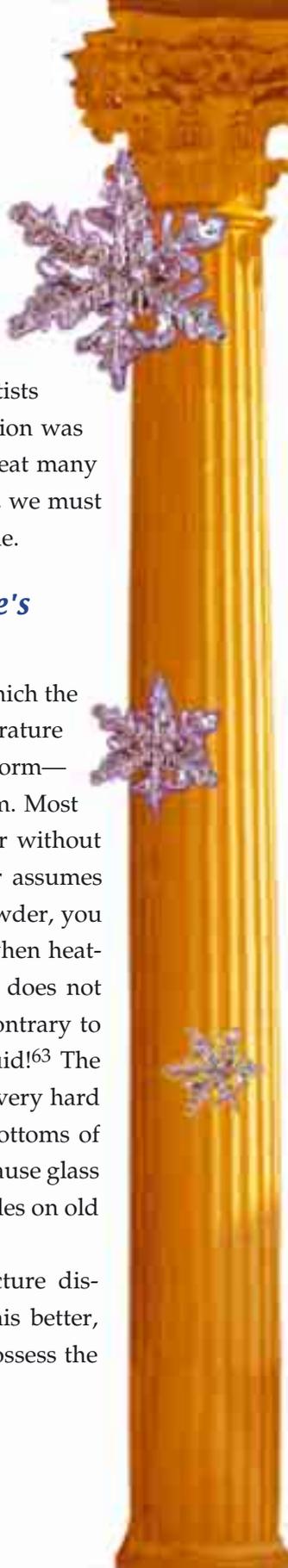
Whenever the word "crystal" is mentioned, people often think of a crystal vase or, rather more scientifically, the ice crystals in a snowflake. But crystal, in fact, is a flawless and magnificent work of art at the molecular level.

The incomparable geometry in crystals amazed scientists when they were first discovered. The secret of their perfection was realized only very recently, as a result of the efforts of a great many experts. In order to understand Allah's geometrical artistry, we must first examine the three different states that molecules assume.

Three Different States Alter any Molecule's Qualities

Most of us are aware of the three states of matter, of which the best-known example is water. In its normal room-temperature state, water is a liquid. When frozen, it assumes a solid form—ice—and when heated it turns into a gas we know as steam. Most molecules can assume these three different states of matter without losing their molecular structures. However, not all matter assumes these three different states. For example, if you heat gunpowder, you cannot obtain a gaseous form of it. Gunpowder explodes when heated and becomes a totally different molecule. Molten glass does not turn into a solid when chilled, it merely becomes hard—contrary to what is generally thought, a glass beaker is actually a liquid!⁶³ The reason why we assume that glass is a solid is that it is so very hard and slow to flow. There is a thicker layer of glass at the bottoms of glasses and vases that have survived from ancient times because glass imperceptibly flows downwards—as can be seen in the ripples on old window panes.

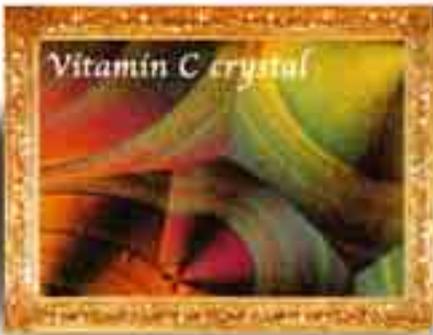
The substance we call "*crystal*" is a molecular structure displayed by substances in their solid form. To appreciate this better, consider that the gaseous, solid and fluid states of water possess the



same molecular features. All are described by the formula H_2O . In water's liquid form, its molecules slide over one another. In its gaseous state, they drift apart, independently from one another, over a wide volume. But in their solid state, the water molecules arrange themselves one after the other in a most symmetrical and immaculate order and crystallize. This is how ice forms. Any compound achieving a symmetrical form and geometrical order when it solidifies undergoes crystallization. If a compound cannot achieve this symmetrical order when it cools, then that compound is not a crystalline. That is one reason why glass is not regarded as a solid: The molecules that constitute it do not acquire a crystalline structure when cooled, and the arrangement of its molecules and atoms remains irregular. A substance that cannot achieve such an order cannot crystallize, for which reason they can never achieve a solid state.

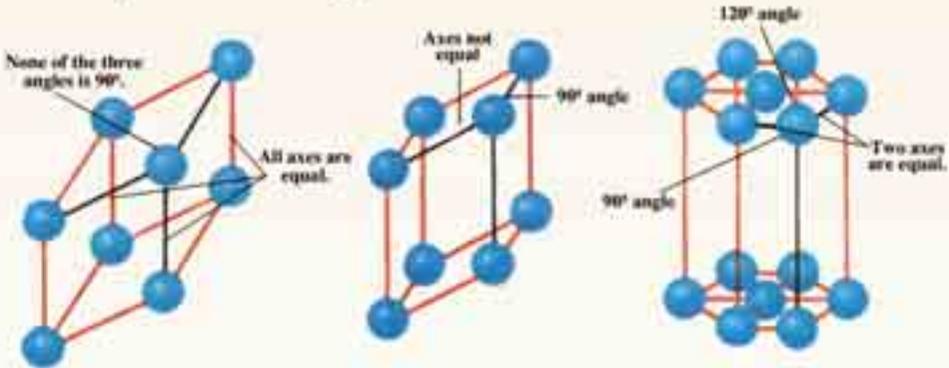
The Flawless Creation in Crystal

Atoms combine in various ways to form a three-dimensional molecule, which form is of great importance. As you have already seen, the functionality of the salt molecule is only possible through the sodium and chlorine atoms bound to one another attaining this three-dimensional form. The atoms and molecules that comprise a substance attain their most regular forms in the solid state. The three-dimensional forms they give rise to always have the same specific angles, which never change in any of the forms that the molecules form. So perfect is this



order that not a single atom impairs the sequence and there is never a deviation in the angles between the atoms in a molecule. Atoms that combine at a 60-degree angle never combine at 61 degrees. If you heat this solid, making it liquid, then

Crystals: The Magnificent Order in Molecules



In their solid state, substances assume three-dimensional shapes. The prism angles in the crystal structures that form are of specific rates. This structure is so flawlessly regular that even a 1-degree deviation in these angles is ruled out.

evaporate it and then chill it and freeze it again, the compound or element in question will re-assume the same perfect geometric form as before. The atoms will attach to one another literally as if they knew where they had to go, and the same exact angles will appear between them. When they recombine, no error will appear in the angles any greater than 1 degree. If the atoms formerly made a hexagonal prism when they came together, they will definitely do so again.

Understanding the small scale in which this perfect order arises helps grasp the scale of this perfection. The diameter of an atom is approximately one hundred millionth of 3 centimeters (1.18 inch) and inside a 3 cm crystal contains 100 million \times 100 million \times 100 million atoms (100,000,000 \times 100,000,000 \times 100,000,000). If a regular progression of 1/1,000,000 of 3 cm (1.18 inch) is seen, then this substance may be regarded as a crystal. Therefore, every crystal possesses millions of regularly arranged atoms.⁶⁴ But you can't still see the scope of that order under the microscope. Thus no matter how many times you divide a solid substance—a metal for example—into fragments, you are still left with crystalline structures, because the atoms in even the smallest molecules still preserve their order. Even if you grind the substance into a powder, you are still left with crystal fragments. If you entirely melt this

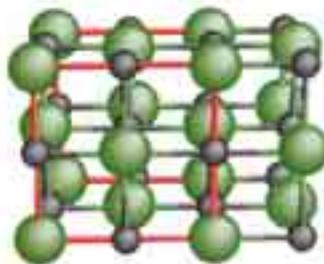
solid powder, then to a large extent it loses its crystalline structure.

The flat surface of a crystal is known as its face, and where two faces meet is the edge. The place where two edges meet is known as the corner. The edges surrounding a face generally form a simple geometrical shape such as a triangle or square. When all the surfaces that constitute the crystal are brought together, then cubic, rectangular or hexagonal prisms result. These structures can sometimes be very much more complex' and the greater the complexity of the structure, the greater the perfection of the emerging symmetry. Faces join to one another at every corner with perfect angles, which never exhibit an alteration or impairment. Prisms follow one another, and not even a flaw of $1/1,000$ of a millimeter (that is, 4×10^{-5} of an inch) between geometrical shapes ever arises.

The impairment of crystalline structure makes the substance assume an entirely different form, or else fall apart completely. Such an event would damage the entire order in nature, and would mean that a great many substances we are familiar with would be unrecognizable. In short, perfection must prevail within this order, and both perfection



The crystal structure that gives rise to molecules has a perfect geometry, so flawless that not even the slightest error can creep in. Any error that did arise would either destroy the substance or else turn it into another one entirely.



and order must be monitored at every moment. This, of course, reveals that everything created is under the protection of Allah.

Even if different molecules are present in the same environment, their special crystalline structures prevent them never become intermingling with one another and thus losing their individual properties. For example, the salt and sugar crystals you throw into hot water soon dissolve into the liquid. Yet when you evaporate this solution, the salt and sugar in the water will crystallize separately and achieve their former structures.⁶⁵ The atoms in the salt never combine with one another at different angles, and the molecules never change their sequence. Indeed, any change in the sequence would result in the salt becoming an entirely different molecule.

How important are all this harmony and order? In this micro-world—which we cannot see and of which most of us are unaware—how important is it for molecules to combine in a perfect geometrical arrangement while preserving their flawless angular values? Why is it they possess their own unique forms, and never lose them? If they did not possess these features, would the world really consist of random atoms and molecules?

Of course, if Allah so wished it, no forms or geometrical arrangements would be necessary for the variety we observe around us to come into being. If He wished, there would be no need of either atoms or molecules to form matter. Allah's creation of this microworld in all its flawless complexity is based on most important wisdom. Even those who seek to deny Allah's existence cannot offer any explanation for this perfection and often express their astonishment at the creation in front of them. The presence of sublime artistry in even the smallest speck of dust proves that there can be no power outside that of Allah, Who reveals in the following verse:

All praise belongs to Allah, the Lord of the heavens and the Lord of the Earth, Lord of all the worlds. All greatness belongs to Him in the heavens and Earth. He is the Almighty, the All-Wise. (Surat al-Jathiyah: 36-37)

A FEW EXAMPLES OF CRYSTALS' FLAWLESS STRUCTURE

The minerals of which rocks are composed furnish the most familiar examples of crystals; everyone recognizes crystalline quartz, gems, and most semiprecious stones. But few realize that with few exceptions the entire solid crust of the Earth is crystalline.⁶⁶ Were you able to see this crust magnified, you would be utterly amazed at what you saw. You would see that everywhere you stepped was an uninterrupted plane bound with regular geometrical shapes, and you would realize that this was even more regular than everything else you see around you. You would realize that flawless structures, with their sublime symmetry and aesthetic appeal, are exhibited in even the smallest specks of dust, was also right under your feet. You would sense the splendor as well as the beauty of all this at every moment. In fact, with every step you take on Earth, you are faced with a perfect creation. What deceives you is merely the fact that you cannot perceive this sublime artistry with your naked eyes.

Other familiar examples of crystals are snowflakes. The crystals that give rise to snowflakes are loosely bonded together, giving rise to such different patterns that no snowflake is identical to any other. On a snowy day, you can easily discover that snowflakes have very different shapes from one another by using a magnifying glass. The possibility of ever finding two identical snowflakes is exceedingly remote. Now, how many snowflakes fall in merely one acre over the course of a year? How about the mountains covered in snow and the sub-zero polar regions? Now, putting all these aside, consider how much snow falls on Earth over a year. If you had the means of bringing all these individual snowflakes together and examining them one by one, you would see that each one was completely different. The reason for this is the molecular property of the molecules constituting the snowflakes. Because of this, the snow crystals form with different geometrical structures, within their six-armed pattern.

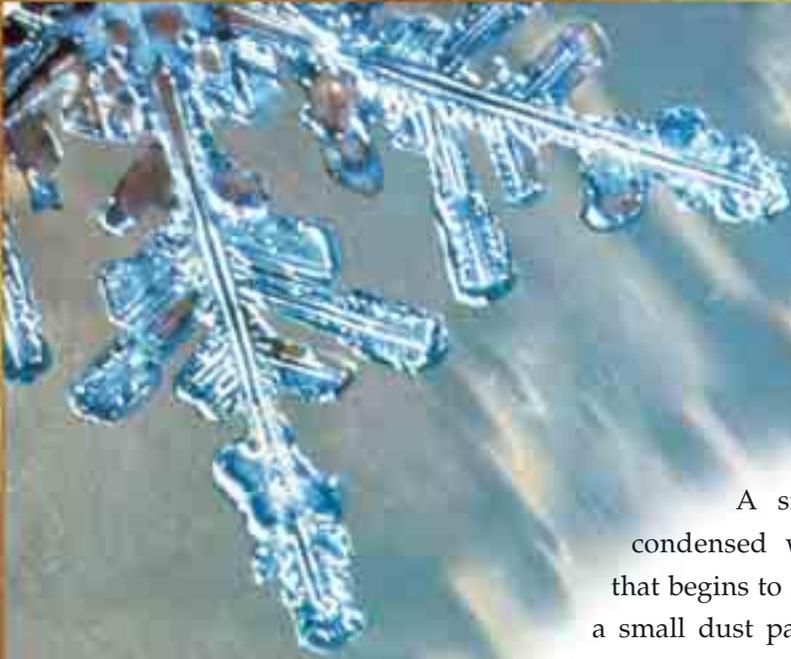
The structures of all water molecules are basically the same, but

Snow crystals, attached to one another with loose bonds, assume different shapes from one another due to differences in the structures of their water molecules. Thus it is almost impossible for a pair of snow flakes to be identical.



these molecules can still exhibit variety. One out of every 5,000 water molecules may contain a deuterium atom instead of a hydrogen one. Additionally, in every 500 atoms there may be one oxygen atom with an atomic weight of 18 instead of 16. This difference causes a combination when ice crystallizes. There are 10^{18} water molecules in a single snowflake, and due to the variety of water molecules just described, 10^{15} of the water molecules forming a snowflake will be different from the others. According to this calculation, there is a 1 in 10^{24} possibility of two snowflakes having exactly the same sequence and shape. But the probability of such having occurred since the beginning of the universe is zero! ⁶⁷

The really interesting fact is that all this infinite variety of snowflakes possesses a perfect, flawless symmetry.



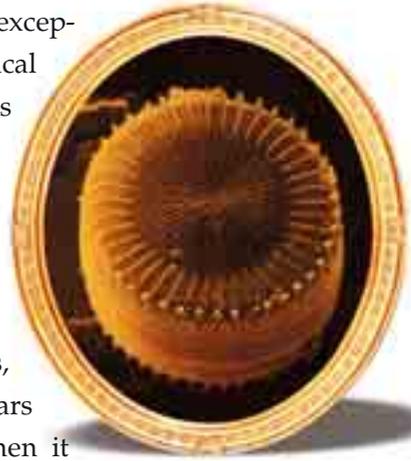
A snowflake is condensed water vapor that begins to form around a small dust particle, just a few microns in size. This microscopic shape is hexagonal, stemming from the structure of the water molecule. This crystal that forms grows increasingly larger, as small branches begin to grow from its arms. The colder the weather becomes, the faster these branches grow. As the flake is exposed to changes in the weather, capillary tubes begin forming on the emerging structure. As the snow spreads around and is subjected to different weather conditions this structural growth continues and starts to acquire a characteristic fitted to every condition. Since every branch in a single snowflake experiences identical growth, the branches all resemble one another, even though exceedingly complex structures emerge. In line with the original hexagonal structure, a symmetry based on the number six emerges, and the crystal acquires a three-dimensional structure. ⁶⁸

These physical phenomena we have outlined, and the physical laws that give rise to them, are actually exceedingly complex. Therefore, just as snowflakes acquire very different shapes, they also acquire an immaculate symmetry, so finely calculated that it seems to have been

designed on a computer. Most people never realize that just a single snowflake possesses exceptionally beautiful and aesthetic symmetrical shapes, and never come to understand its perfect structure. Nonetheless, a snowflake appears as an immaculate work of art because it is an example of Allah's artistry.

Another example of the marvels to be found in the crystal realm is a virus, which can lie dormant for hundreds of years and then miraculously come to life when it detects a living cell. The term "come to life" is a particularly apt, because viruses exhibit no signs of life until they sense the heat and moisture of a living cell. They have no organelles in the same way that single-celled organisms do. They only have a cell membrane that helps them to protect their DNA (and sometimes, RNA). They must hijack another living cell in order to replicate and make use of the shelter it offers.

Viruses can survive anywhere in the world, in heat or cold, in the air or underground, until they find a way of installing themselves inside a cell. The only reason why they don't break down and disintegrate is their crystal structure. This endows these tiny specks, invisible to the naked eye, with a flawless



Before settling inside a cell, a virus' only source of protection is its crystalline structure. In addition to viruses, other organisms also enter a kind of hibernation and protect themselves by crystallizing.



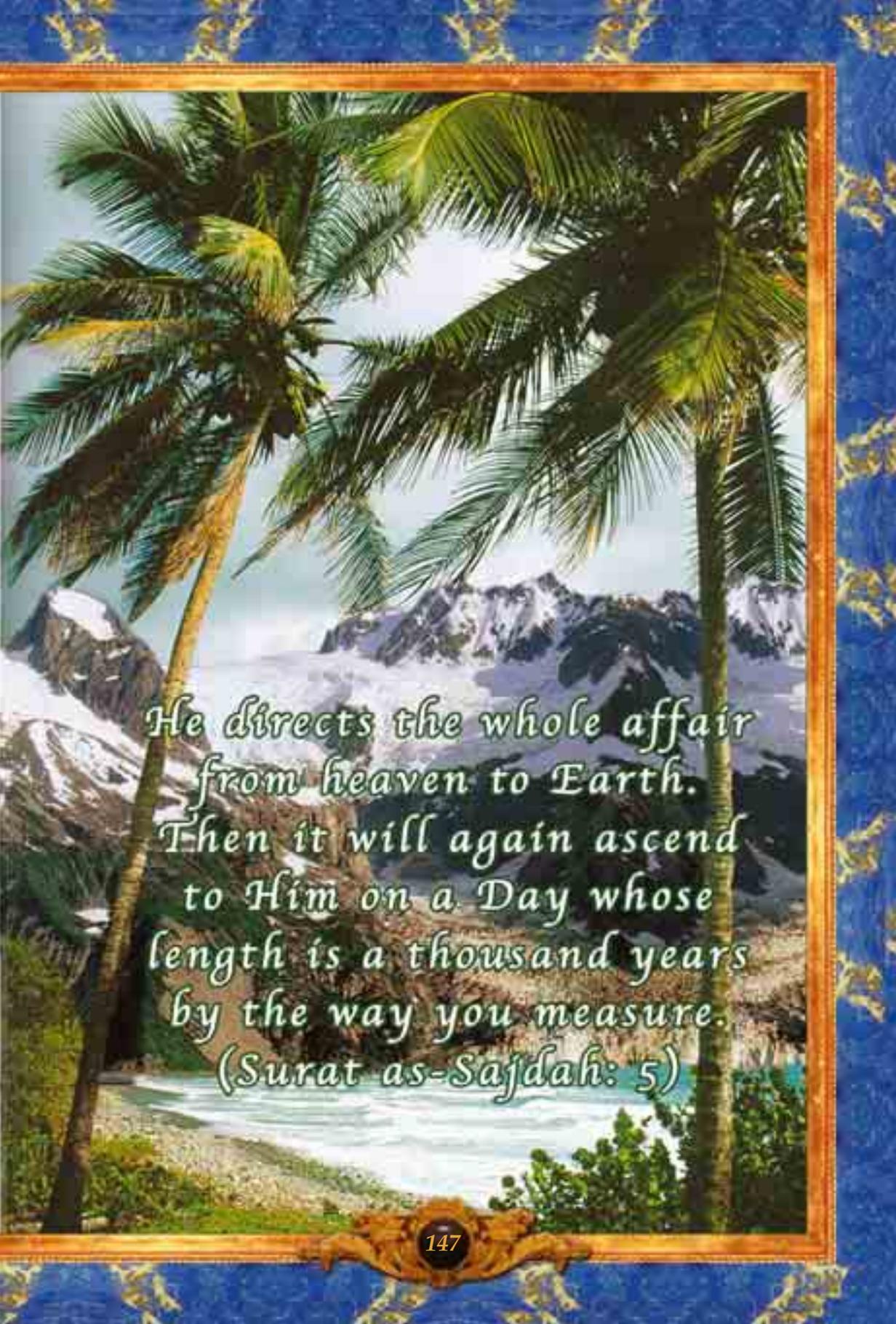
and symmetrical structure capable of protecting them. The distinct geometrical structures of viruses are the most evident features of their crystalline sheath. ⁶⁹

Other microorganisms, not just viruses, also crystallize—a clear sign that microorganisms know the most far-sighted method of self-protection. When conditions grow difficult, various microorganisms such as algae and bacteria crystallize and enter into a kind of hibernation to survive. They remain in that state until conditions are better suited to them. As conditions worsen, each species of bacteria uses its own particular method of crystallization to rise up in the air. Its crystalline layer structure protects it against the harsh environmental conditions it may encounter among the clouds. When they encounter conditions better suited to themselves, these organisms lose the crystal structure protecting them and return to their behavior, feeding and multiplying.

The formation of totally different, dazzling shapes with a flawless symmetry and immaculate geometry as a result of the combination of atoms and molecules—and the way that such structures offer protection—are most important signs leading to faith. Everything you read about takes place at the molecular level. There is enormous care and incomparable intellect on Earth. This obvious truth pulls the rug out from under the feet of those who seek to ascribe other powers besides Allah and seek to deny His existence. His creativity reveals the hollow nature of their endeavors and strengthens the faith of believers. That is why such sublime artistry is displayed even in the tiniest details. As Allah reveals in His verses:

Praise be to Allah, to Whom everything in the heavens and everything in the Earth belongs, and praise be to Him in the Hereafter. He is the All-Wise, the All-Aware.

He knows what goes into the Earth and what comes out of it, and what comes down from heaven and what goes up into it. And He is the Most Merciful, the Ever-Forgiving. (Surah Saba': 1-2)

A tropical beach scene with palm trees in the foreground and snow-capped mountains in the background. The text is overlaid on the image.

*He directs the whole affair
from heaven to Earth.
Then it will again ascend
to Him on a Day whose
length is a thousand years
by the way you measure.
(Surat as-Sajdah: 5)*

**NO ROOM
FOR CHANCE AT
THE MOLECULAR LEVEL**





Over the last few hundred years, thousands of scientists have researched how the universe, the Earth, all living things and humanity came into existence. With the greatest care, they have examined the structures giving rise to living things. Billions of dollars have been invested in recent years, and mankind as a whole has attached the greatest importance and priority to all this study. Yet all these endeavors in the field of science clearly reveal the artistry created by Allah's sublime knowledge. There is a magnificent complexity, and thus a great intellect, in every part of the universe, even in a single speck of dust.

Gerald Schroeder, a well-known scientific writer and scientist, has worked in the fields of physics and biology at the Massachusetts Institute of Technology (MIT), and has made particularly important comments on this subject. Schroeder begins his book *Science Reveals the Ultimate Truth* with these words: "A single consciousness, an all-encompassing wisdom, pervades the universe. The discoveries of science, those that search the quantum nature of subatomic matter, those that explore the molecular complexity, of biology, and those that probe the brain/mind interface, have moved us to the brink of a startling realization: 'all existence is the expression of this wisdom.' In the

laboratories we experience it as information first physically articulated as energy and then condensed into the form of matter. Every particle,

every being, from atom to human, appears to have within it a level of information, of conscious wisdom." ⁷⁰

Despite being the most intelligent entities in creation, human beings have difficulty in unraveling the secrets of this absolute omniscience. For that reason, any thinking person of good conscience can see the infinite supremacy of Allah, the Lord of this intelligence and artistry that surrounds us in every respect. Every new esteemed, awarded, and applauded discovery is the work of this infinite Intelligence that has existed forever and will continue to exist forever.

Since the first creation of the universe, every detail has been brought into being and maintained in a perfect manner. DNA, discovered only in recent decades, has contained the code of life and carried out its functions in all living things for millions of years. The human genome, a map of which science has been able to produce only in the last few years, has determined the physical features of all human beings, from the first human to those living today. The chlorophyll molecule, which still cannot be replicated in a laboratory environment, has been carrying out photosynthesis since the first plant appeared. Humans are delighted that after a period of millions of years, even a part of this has been discovered. All this reveals humanity's helplessness before Allah, and His sublime intelligence and knowledge. Allah reveals this fact in His verses:

O humanity! You are the poor in need of Allah whereas Allah is the Rich Beyond Need, the Praiseworthy. If He wills He can dispense with you and bring about a new creation. That is not difficult for Allah. (Surah Fatir: 15-17)

The Invalidity of Claims of Coincidence

Despite all these facts, some people still seek to elevate themselves, rather than admitting their own helplessness. Their sole aim is to deny the existence of Allah and to seek deities apart from Him. Some of these people are materialists and Darwinists, who believe that chance is the only creative force, for which reason they subscribe to the theory of evolution. Though all their claims in all spheres have been proven incorrect, they continue to suggest that coincidences worked miracles. They do so because admitting their errors would mean they must also admit the existence of Allah. Therefore, they have no reservations about supporting the theory of evolution and other theses of materialist philosophy, despite the fact that these have been invalidated, scientifically and logically.

But the law of Allah and His creations are far more magnificent than the unbelievers ever expected, or wished. The smaller the realm they investigated and the deeper they delved into the microworld, the more they encountered a world of a perfection they never imagined. As you have already seen, materialist philosophy and the theory of evolution—the applied form of that philosophy—have deified chance. According to this philosophy, all of life and the balances and systems that affect life—in short, everything—came into being by chance. This superstitious belief states that cells came together accidentally, giving rise to proteins, cells, complex organisms, complex organs like the liver, eye, heart, brain and nervous system, and eventually, to man himself. A combination of coincidences led to plants, flowers with their different

A decorative red and gold frame containing a parrot, set against a background of a tropical landscape with palm trees and a waterfall. The frame is ornate, with intricate gold patterns on a red background. A parrot is visible through a circular opening in the center of the frame. The background shows a lush green landscape with palm trees and a waterfall, all framed by a blue border with gold floral patterns.

colors, giant trees, and fruits of various kinds. In the view of materialists and evolutionists, coincidences are so expert and intelligent that they can give rise to life forms requiring scrupulous care, measurement and delicate ratios with no mistakes, without trial and error, and flawlessly, in enormous complexity. For many years, evolutionists have no qualms about putting forward this ridiculous logic and imposing it on others. The theory of evolution, which takes this claim as its starting point, has received wide acceptance everywhere, from schoolbooks to newspapers. For that reason, many people imagine it's based on a logical foundation. In fact, however, the foundation of the theory consists solely of coincidental resemblances among species.

Coincidences are random events that take place in an unplanned, uncontrolled manner. If you install even a single screw randomly in a clock, it is impossible to endow that clock with any positive attribute. An uncontrolled event taking place within an exceedingly controlled system can only ruin it. Therefore, coincidences can never give rise to more complex systems, and can-

not have any positive effect on ones that already exist. Even assuming that a single coincidence could be useful, coincidences that follow will eliminate that benefit by inflicting other damage. To cite an example from daily life, any random intervention in a computer's circuits will damage the system. The mechanism will probably cease to function. The more complex a system, the more harmful any random events will be. In such situations, a single chance event causes an error that cannot be rectified and totally collapses the system.

The more progress is made by science and technology, and the better are understood the details that give rise to life, especially the cell, the greater the concern experienced by Darwinists. In their view, when life began in the beginning, a living cell must have come into existence spontaneously and through random events. In fact, however, the cell is so complex that realizing this fact led evolutionists to engage in all sorts of new, imaginary accounts. A random event that might take place in just one of the cell's mechanisms will cause its death and disappearance.



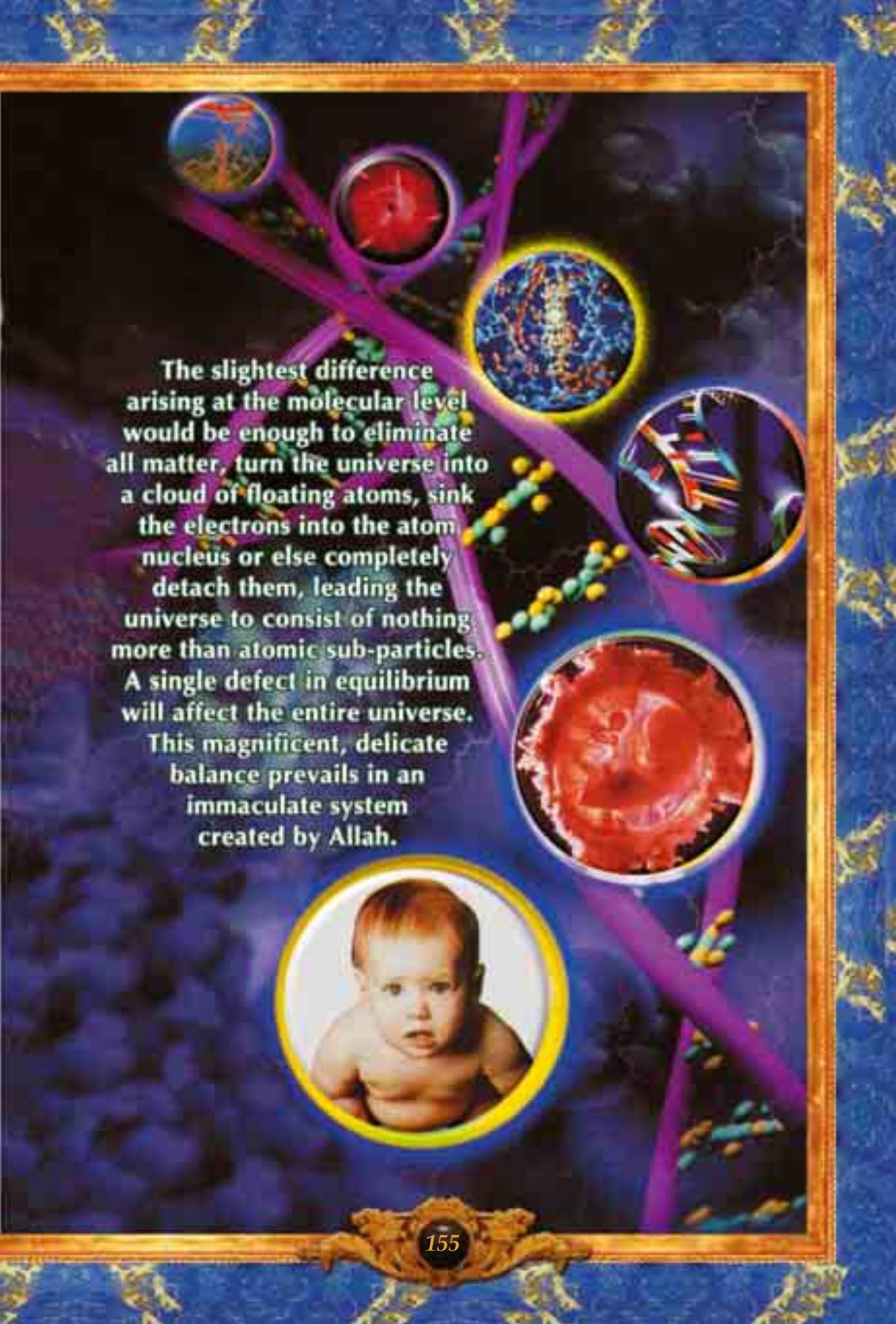
Increasingly sensitive mechanisms are among the main concerns to materialists and Darwinists. Their theory cannot account for the emergence of a single cell, much less explain away all its sub-components. Therefore, no materialist explanation can be given for the origin of the tiny building blocks of matter. For that reason, such great and incomparable splendor at the molecular level has always seriously worried Darwinists.

Basic Principles Cause Darwinism's Collapse

Science still has no answer to the question of what factors underlie these laws that regulate the entire universe; what causes they are based on and whether they depend on any such causes; why they are as they are and not otherwise; and how it is that a hydrogen atom, which looks so simple, in fact possesses the potential ability to give birth to a whole universe. In the same way, we have no answer to the question of what senses we possess before we are born.⁷¹

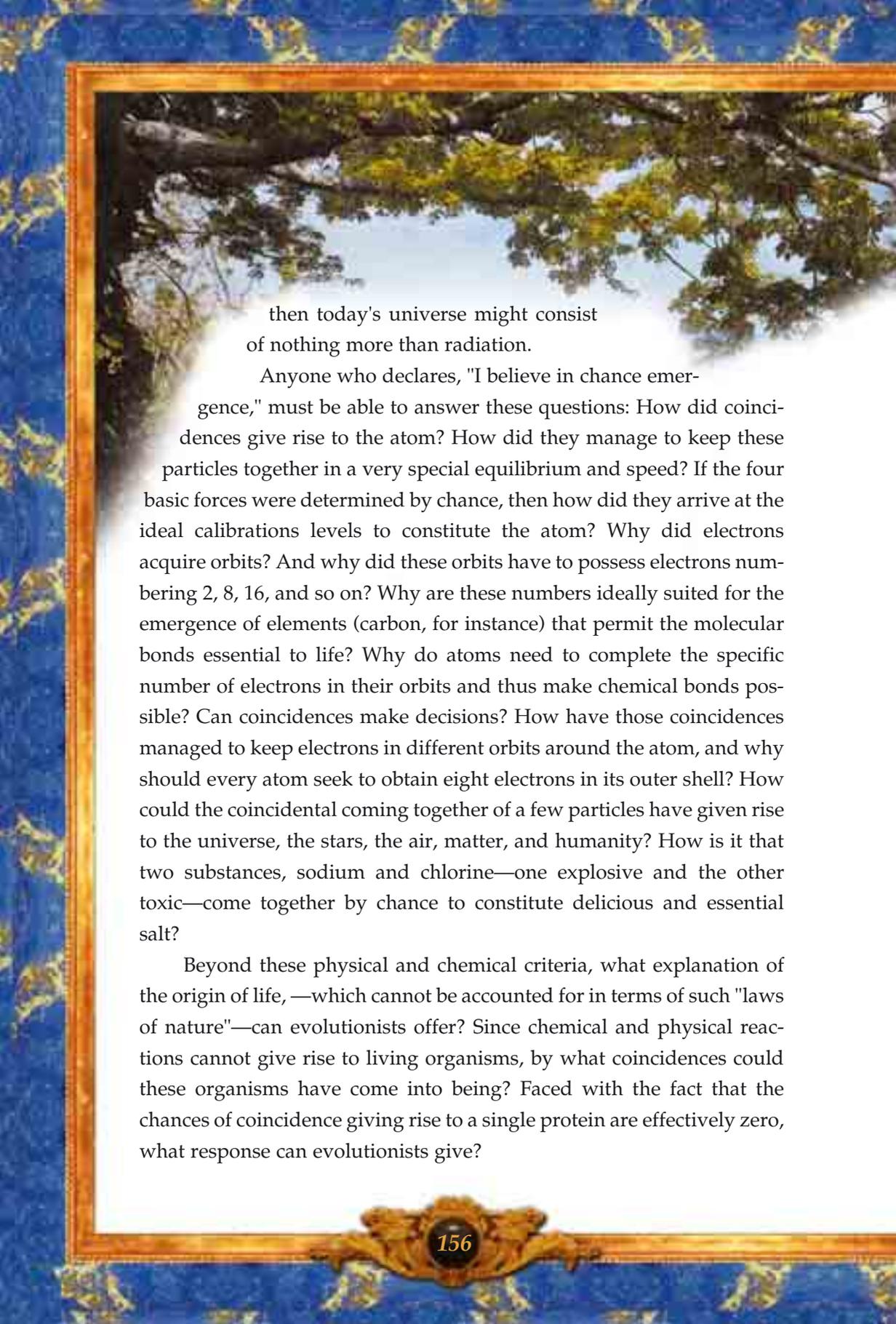
These words of the well-known evolutionist author Hoimar von Ditfurth clearly reveal that a materialist and evolutionist cannot account for the laws that regulate the universe.

No matter how much materialists and evolutionists may ascribe the order in the universe and origins of life to chance, they can never explain their claims in terms of science, intelligence and logic. It is highly illogical, for example, to maintain that the magnificent features seen at the molecular level could have arisen by chance. A chance event at the molecular level would eliminate all matter and turn the universe into a cloud of floating atoms. A chance event at the molecular level will either adhere electrons to the atom nucleus, or else entirely detach them, reducing the universe to a soup of subatomic particles. Everything in the world of the atom, the elements that comprise this world, the forces acting upon them, the geometric shapes they assume—in short, everything—is sensitively based on exceedingly minute and finely calculated balances. If any one of the four basic forces were even slightly different,



The slightest difference arising at the molecular level would be enough to eliminate all matter, turn the universe into a cloud of floating atoms, sink the electrons into the atomic nucleus or else completely detach them, leading the universe to consist of nothing more than atomic sub-particles. A single defect in equilibrium will affect the entire universe. This magnificent, delicate balance prevails in an immaculate system created by Allah.





then today's universe might consist of nothing more than radiation.

Anyone who declares, "I believe in chance emergence," must be able to answer these questions: How did coincidences give rise to the atom? How did they manage to keep these particles together in a very special equilibrium and speed? If the four basic forces were determined by chance, then how did they arrive at the ideal calibrations levels to constitute the atom? Why did electrons acquire orbits? And why did these orbits have to possess electrons numbering 2, 8, 16, and so on? Why are these numbers ideally suited for the emergence of elements (carbon, for instance) that permit the molecular bonds essential to life? Why do atoms need to complete the specific number of electrons in their orbits and thus make chemical bonds possible? Can coincidences make decisions? How have those coincidences managed to keep electrons in different orbits around the atom, and why should every atom seek to obtain eight electrons in its outer shell? How could the coincidental coming together of a few particles have given rise to the universe, the stars, the air, matter, and humanity? How is it that two substances, sodium and chlorine—one explosive and the other toxic—come together by chance to constitute delicious and essential salt?

Beyond these physical and chemical criteria, what explanation of the origin of life, —which cannot be accounted for in terms of such "laws of nature"—can evolutionists offer? Since chemical and physical reactions cannot give rise to living organisms, by what coincidences could these organisms have come into being? Faced with the fact that the chances of coincidence giving rise to a single protein are effectively zero, what response can evolutionists give?



What is the origin of DNA? What coincidences decided that a cell should be alive, and a stone inanimate? What coincidence could have built a DNA molecule inside a cell and endowed it with information? What coincidence decided that loose or strong bonds should be formed where appropriate, without making a single error? What kind of random event was able to give every one of the molecules inside the cell a separate and flawless sequence? How did these coincidences become more intelligent than human beings, scientists and professors? How are they able to consider details of all kinds, make no mistakes and bring together aesthetics, artistry, practicality and magnificence?

Though every atom's protons, neutrons and electrons are the same, how did coincidence make hydrogen and iron into separate elements, and make carbon the basis of life? What coincidence decided that one molecule should be toxic, another edible and yet another drinkable? Is it possible for coincidences to be conscious and intelligent, to plan ahead, and make decisions and delicate calculations?

These questions, whose general lines we have posed in considering the properties of molecules, have always represented a major dilemma for materialists and Darwinists. Materialist circles and supporters of evolution are perfectly well aware of the answers to these questions, but can never openly state them. Indeed, even they sometimes have to confess to themselves that their claims are groundless. Despite being a dyed-in-the-wool evolutionist, Hoimar von Ditfurth is one to make such admissions:

If dozens of mutual relationships . . . of which we have only become aware as the result of centuries of experiments and a great deal of hard work by scientists, are not sources of amazement and

astonishment, genuine awe, then what will be? There is an endless list of astonishing natural phenomena that we have learned only as the result of scientific research, from the dimensions of the universe and the laws governing the rate of expansion of stars to the relationship between matter and energy, and from the events taking place in the cell nucleus, in which is stored the blueprint for a living organism to the discovery of the electrical currents in our brains. . . . Indeed, looking at the unique properties inherent in the formation of a single protein performing biological functions, it appears impossible to account for the atoms needing to combine at the right moment, in the correct sequence, and with the correct electrical and mechanical properties, to do so by chance.⁷²

In fact, materialism is unable to account for the origin of a single one of the millions of atoms in the tip of a pencil in your hand and how it came into equilibrium.

This should come as no surprise. Everyone who does not believe in Allah will sooner or later encounter defeat. The truth will always emerge and be victorious: This is the law of Allah. Even if the whole world does all in its power, it can still never change or eliminate the truth. Materialists and Darwinists unable to see this are in fact engaged in hollow endeavors, whose results will harm only them. Armed with stubborn superstitions, they fight against the truth, but will never be able to achieve their aims at any stage of this struggle. It is impossible for them to bring their endeavors to a successful conclusion. This is revealed in the Qur'an:

Say: "Truth has come and falsehood has vanished. Falsehood is always bound to vanish." (Surat al-Isra': 81)

Rather We hurl The Truth against falsehood and it cuts

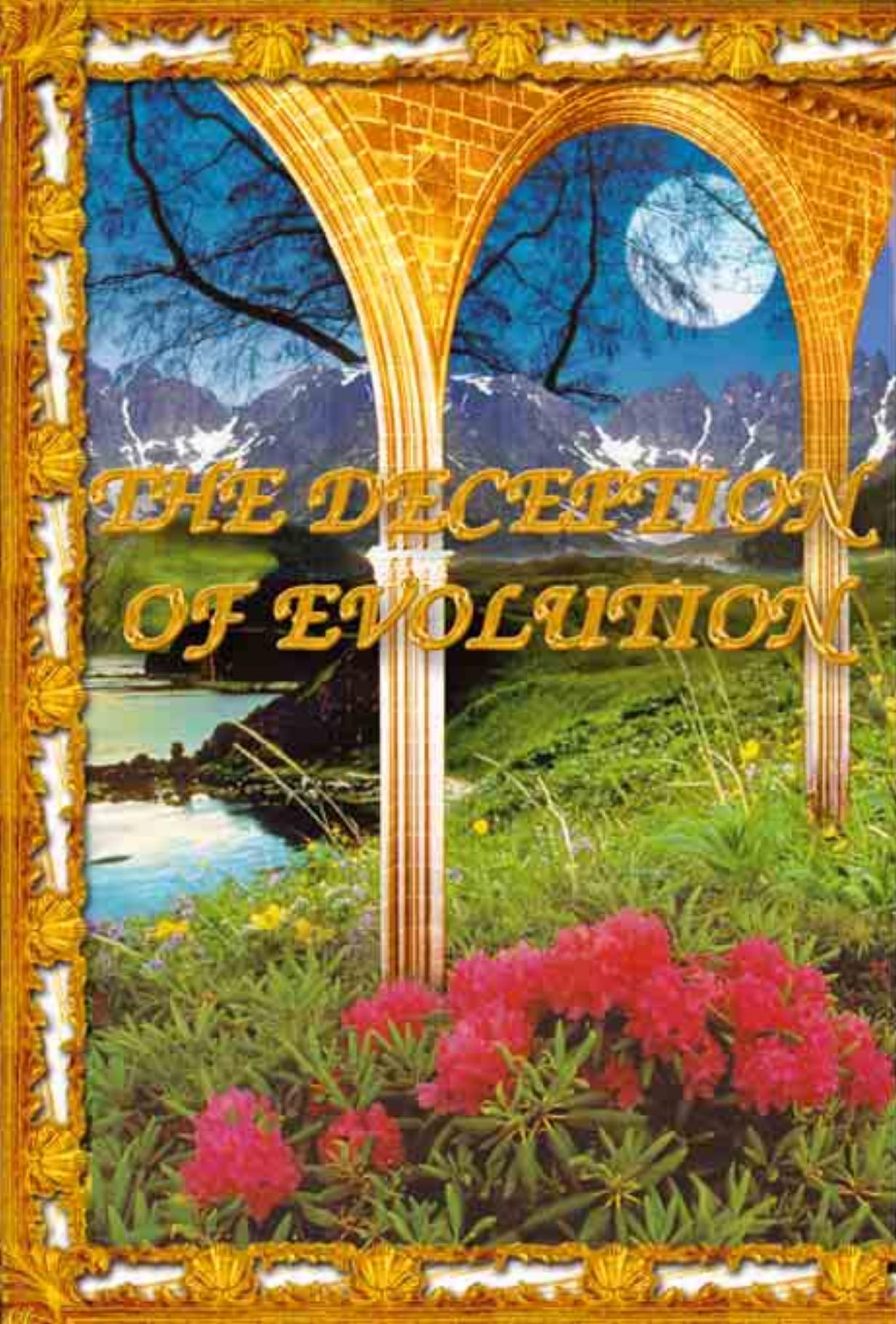
right through its brain and it vanishes clean away!
Woe without end for you for what you portray! (Surat
al-Anbiya': 18)

Say: "Allah is a sufficient witness between me and
you." He knows everything in the heavens and the
Earth. Those who believe in falsehood and reject
Allah, they are the losers. (Surat al-'Ankabut: 52)

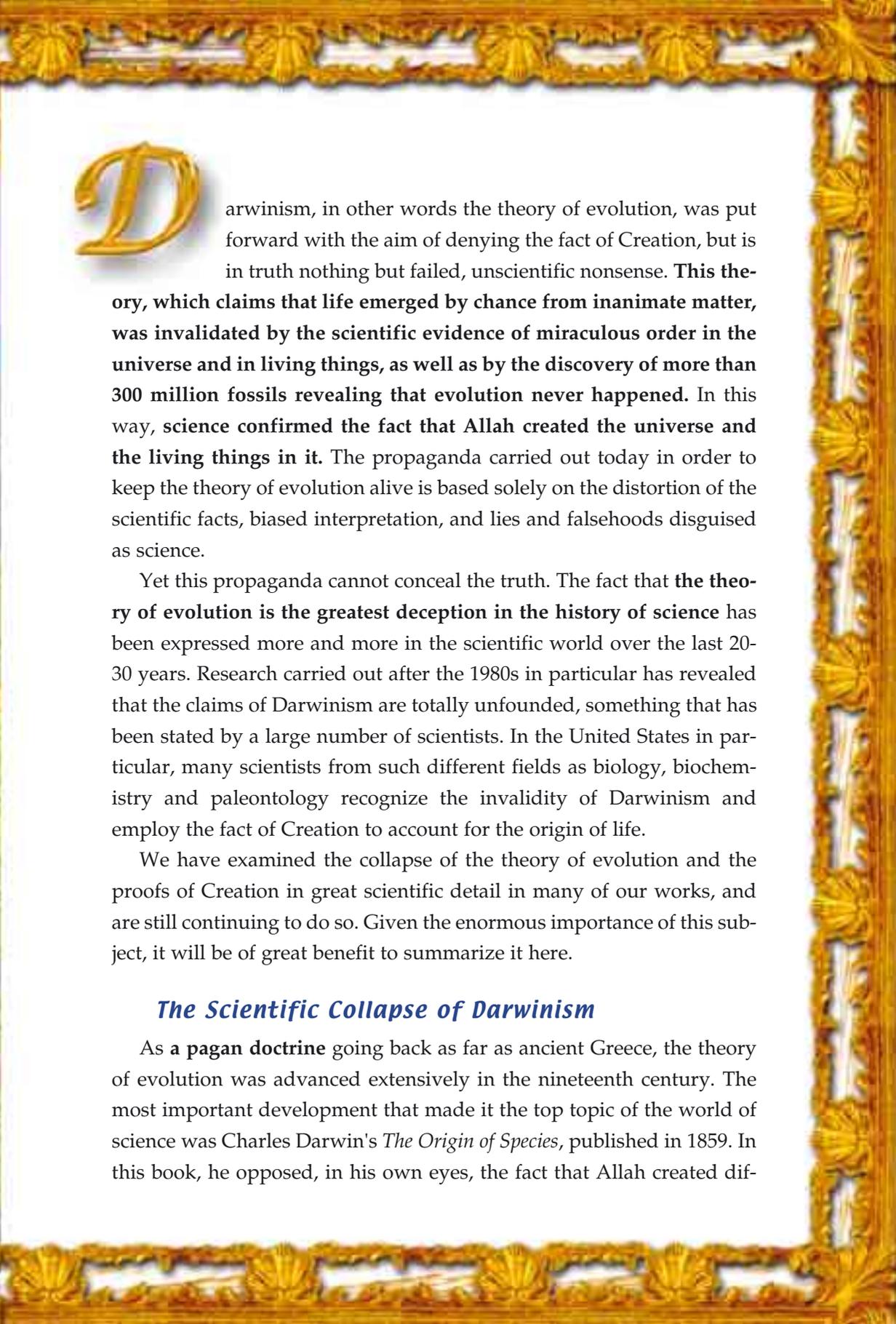
Say: "The Truth has come. Falsehood cannot originate
or regenerate." (Surah Saba': 49)

Or do they ask, "Has he invented a lie about Allah?"
If Allah willed, He could seal up your heart. By His
Words Allah wipes out the false and confirms The
Truth. He knows what the heart contains. (Surat ash-
Shura: 24)

In any case, the truth always reveals itself and its
superiority. Failure to see this—and in particular, being
part of the scientific world and still unable to see this—is
possible only from a desire not to see. Indeed, in the life
of this world the distinction between the two emerges.
This is the place where people are tested for a just weigh-
ing in the Hereafter. This world has been created to intro-
duce for those who see the existence of and appreciate
Allah and for those who seek to deny His existence and
deviate onto the path of denial. In the life of this world,
there is a need for such a comparison in order for super-
stition to be seen as false, and the truth as truth. Never
forget that the proponents of superstition will inevitably
be vanquished and for ignoring the magnificent creation
and absolute existence of Allah, will receive an unexpect-
ed recompense in the Hereafter, whose existence they
once doubted.



THE DECEPTION
OF EVOLUTION



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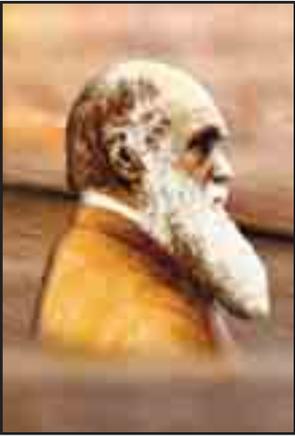
arwinism, in other words the theory of evolution, was put forward with the aim of denying the fact of Creation, but is in truth nothing but failed, unscientific nonsense. **This theory, which claims that life emerged by chance from inanimate matter, was invalidated by the scientific evidence of miraculous order in the universe and in living things, as well as by the discovery of more than 300 million fossils revealing that evolution never happened.** In this way, science confirmed the fact that Allah created the universe and the living things in it. The propaganda carried out today in order to keep the theory of evolution alive is based solely on the distortion of the scientific facts, biased interpretation, and lies and falsehoods disguised as science.

Yet this propaganda cannot conceal the truth. The fact that **the theory of evolution is the greatest deception in the history of science** has been expressed more and more in the scientific world over the last 20-30 years. Research carried out after the 1980s in particular has revealed that the claims of Darwinism are totally unfounded, something that has been stated by a large number of scientists. In the United States in particular, many scientists from such different fields as biology, biochemistry and paleontology recognize the invalidity of Darwinism and employ the fact of Creation to account for the origin of life.

We have examined the collapse of the theory of evolution and the proofs of Creation in great scientific detail in many of our works, and are still continuing to do so. Given the enormous importance of this subject, it will be of great benefit to summarize it here.

The Scientific Collapse of Darwinism

As a **pagan doctrine** going back as far as ancient Greece, the theory of evolution was advanced extensively in the nineteenth century. The most important development that made it the top topic of the world of science was Charles Darwin's *The Origin of Species*, published in 1859. In this book, he opposed, in his own eyes, the fact that Allah created dif-



Charles Darwin

ferent living species on earth separately, for he erroneously claimed that all living beings had a common ancestor and had diversified over time through small changes. **Darwin's theory was not based on any concrete scientific finding; as he also accepted, it was just an "assumption."** Moreover, as Darwin confessed in the long chapter of his book titled **"Difficulties on Theory," the theory failed in the face of many critical questions.**

Darwin invested all of his hopes in new scientific discoveries, which he expected to solve these difficulties. However, contrary to his expectations, scientific findings expanded the dimensions of these difficulties. The defeat of Darwinism in the face of science can be reviewed under three basic topics:

- 1) The theory cannot explain how life originated on Earth.
- 2) No scientific finding shows that the "evolutionary mechanisms" proposed by the theory have any evolutionary power at all.
- 3) The fossil record proves the exact opposite of what the theory suggests.

In this section, we will examine these three basic points in general outlines:

The First Insurmountable Step: The Origin of Life

The theory of evolution posits that all living species evolved from a single living cell that emerged on Earth 3.8 billion years ago, supposed to have happened as a result of coincidences. How a single cell could generate millions of complex living species and, if such an evolution really occurred, why traces of it cannot be observed in the fossil record are some of the questions that the theory cannot answer. However, first and foremost, we need to ask: **How did this "first cell" originate?**

Since the theory of evolution ignorantly denies Creation, it main-

tains that the "first cell" originated as a product of blind coincidences within the laws of nature, without any plan or arrangement. According to the theory, inanimate matter must have produced a living cell as a result of coincidences. Such a claim, however, is inconsistent with the most unassailable rules of biology.

"Life Comes From Life"

In his book, Darwin never referred to the origin of life. The primitive understanding of science in his time rested on the assumption that living beings had a very simple structure. Since medieval times, spontaneous generation, which asserts that non-living materials came together to form living organisms, had been widely accepted. It was commonly believed that insects came into being from food leftovers, and mice from wheat. Interesting experiments were conducted to prove this theory. Some wheat was placed on a dirty piece of cloth, and it was believed that mice would originate from it after a while.

Similarly, maggots developing in rotting meat was assumed to be evidence of spontaneous generation. However, **it was later understood that worms did not appear on meat spontaneously, but were carried there by flies in the form of larvae, invisible to the naked eye.**

Even when Darwin wrote *The Origin of Species*, the belief that bacteria could come into existence from non-living matter was widely accepted in the world of science.

However, **five years after the publication of Darwin's book, Louis Pasteur announced his results after long studies and experiments, that disproved spontaneous generation, a cornerstone of Darwin's theory.** In his triumphal lecture at the Sorbonne in 1864, Pasteur said: **"Never will the doctrine of spontaneous generation recover from the mortal blow struck by this simple experiment."**⁷³

For a long time, advocates of the theory of evolution resisted these findings. However, as the development of science unraveled the complex structure of the cell of a living being, the idea that life could come into being coincidentally faced an even greater impasse.

Inconclusive Efforts of the Twentieth Century

The first evolutionist who took up the subject of the origin of life in the twentieth century was the renowned Russian biologist Alexander Oparin. With various theses he advanced in the 1930s, he tried to prove that a living cell could originate by coincidence. These studies, however, were doomed to failure, and Oparin had to make the following confession:

Unfortunately, however, the problem of the origin of the cell is perhaps the most obscure point in the whole study of the evolution of organisms.⁷⁴

Evolutionist followers of Oparin tried to carry out experiments to solve this problem. The best known experiment was carried out by the American chemist Stanley Miller in 1953. Combining the gases he alleged to have existed in the primordial Earth's atmosphere in an experiment set-up, and adding energy to the mixture, Miller synthesized several organic molecules (amino acids) present in the structure of proteins.

Barely a few years had passed before it was revealed that **this experiment, which was then presented as an important step in the name of evolution, was invalid, for the atmosphere used in the experiment was very different from the real Earth conditions.**⁷⁵

After a long silence, Miller confessed that the atmosphere medium he used was unrealistic.⁷⁶

All the evolutionists' efforts throughout the twentieth century to



Russian biologist
Alexander Oparin



One example of evolutionists' attempts to account for the origin of life is the Miller experiment. It was gradually realized that this experiment, initially heralded as a major advance on behalf of the theory of evolution, was invalid, and Miller was even forced to admit that very fact himself.

explain the origin of life ended in failure. The geochemist Jeffrey Bada, from

the San Diego Scripps Institute accepts this fact in an article published in *Earth* magazine in 1998:

Today as we leave the twentieth century, we still face the biggest unsolved problem that we had when we entered the twentieth century: How did life originate on Earth?⁷⁷

The Complex Structure of Life

The primary reason why evolutionists ended up in such a great impasse regarding the origin of life is that even those living organisms Darwinists deemed to be the simplest have outstandingly complex features. The cell of a living thing is more complex than all of our man-made technological products. **Today, even in the most developed laboratories of the world, no single protein of the cell, let alone a living cell itself, can be produced by bringing organic chemicals together.**

The conditions required for the formation of a cell are too great in quantity to be explained away by coincidences. However, there is no need to explain the situation with these details. Evolutionists are at a dead-end even before reaching the stage of the cell. That is because the probability of just a single protein, an essential building block of the cell, coming into being by chance is mathematically "0."



One of the facts nullifying the theory of evolution is the incredibly complex structure of life. The DNA molecule located in the nucleus of cells of living beings is an example of this. The DNA is a sort of databank formed of the arrangement of four different molecules in different sequences. This databank contains the codes of all the physical traits of that living being. When the human DNA is put into writing, it is calculated that this would result in an encyclopedia made up of 900 volumes. Unquestionably, such extraordinary information definitively refutes the concept of coincidence.

The main reason for this is the need for other proteins to be present if one protein is to form, and this completely eradicates the possibility of chance formation. This fact by itself is sufficient to eliminate the evolutionist claim of chance right from the outset. To summarize,

1. Protein cannot be synthesized without enzymes, and enzymes are all proteins.

2. Around 100 proteins need to be present in order for a single protein to be synthesized. There therefore need to be proteins for proteins to exist.

3. DNA manufactures the protein-synthesizing enzymes. Protein cannot be synthesized without DNA. DNA is therefore also needed in order for proteins to form.

4. All the organelles in the cell have important tasks in protein synthesis. In other words, in order for proteins to form a perfect and fully functioning cell needs to exist together with all its organelles.

The DNA molecule, which is located in the nucleus of a cell and which stores genetic information, is a magnificent databank. If the information coded in DNA were written down, it would make a giant library consisting of an estimated 900 volumes of encyclopedias consisting of 500 pages each.

A very interesting dilemma emerges at this point: DNA can replicate itself only with the help of some specialized proteins (enzymes). However, the synthesis of these enzymes can be realized only by the information coded in DNA. As they both depend on each other, they have to exist at the same time for replication. This brings the scenario that life originated by itself to a deadlock. Prof. Leslie Orgel, an evolutionist of repute from the University of San Diego, California, confesses this fact in the September 1994 issue of the *Scientific American* magazine:

It is extremely improbable that proteins and nucleic acids, both of which are structurally complex, arose spontaneously in the same place at the same time. Yet it also seems impossible to have one without the other. And so, at first glance, one might have to conclude that life could never, in fact, have originated by chemical means.⁷⁸

No doubt, if it is impossible for life to have originated spontaneously as a result of blind coincidences, then it has to be accepted that life was **created**. This fact explicitly invalidates the theory of evolution, whose main purpose is to deny Creation.

Imaginary Mechanism of Evolution

The second important point that negates Darwin's theory is that both concepts put forward by the theory as "evolutionary mechanisms" were understood to have, in reality, no evolutionary power.

Darwin based his evolution allegation entirely on the mechanism of "natural selection." The importance he placed on this mechanism was evident in the name of his book: *The Origin of Species, By Means of Natural Selection...*

Natural selection holds that those living things that are stronger and more suited to the natural conditions of their habitats will survive in the struggle for life. For example, in a deer herd under the threat of attack by wild animals, those that can run faster will survive. Therefore, the deer herd will be comprised of faster and stronger individuals. However, unquestionably, this mechanism will not cause deer to evolve and transform themselves into another living species, for instance, horses.

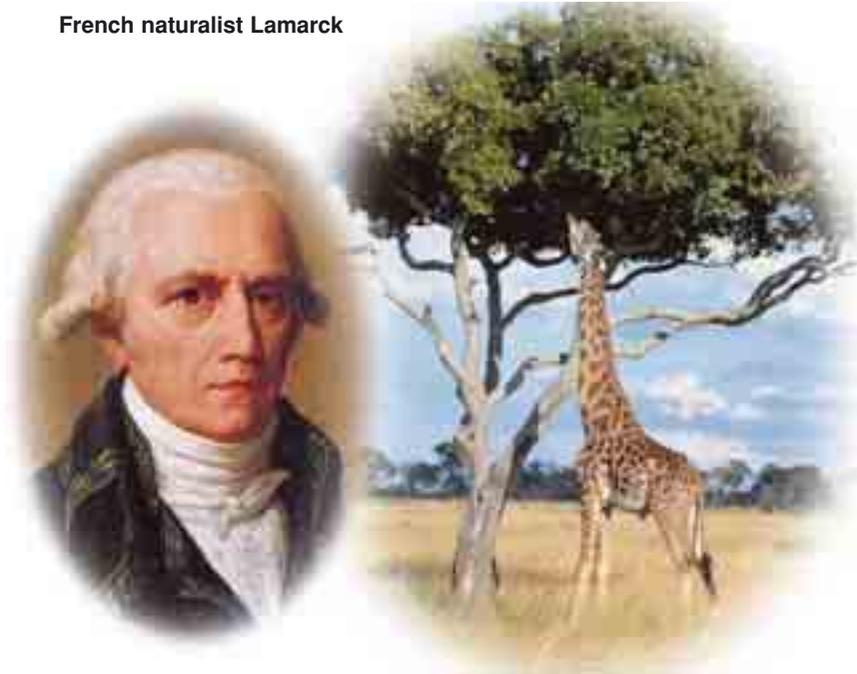
Therefore, **the mechanism of natural selection has no evolutionary power. Darwin was also aware of this fact** and had to state this in his book *The Origin of Species*:

Natural selection can do nothing until favourable individual differences or variations occur.⁷⁹

Lamarck's Impact

So, how could these "favorable variations" occur? Darwin tried to answer this question from the standpoint of the primitive understanding of science at that time. According to the French biologist Chevalier de Lamarck (1744-1829), who lived before Darwin, living creatures passed on the traits they acquired during their lifetime to the next generation. He asserted that these traits, which accumulated from one generation to another, caused new species to be formed. For instance, he claimed that giraffes evolved from antelopes; as they struggled to eat the leaves of high trees, their necks were extended from generation to generation.

French naturalist Lamarck

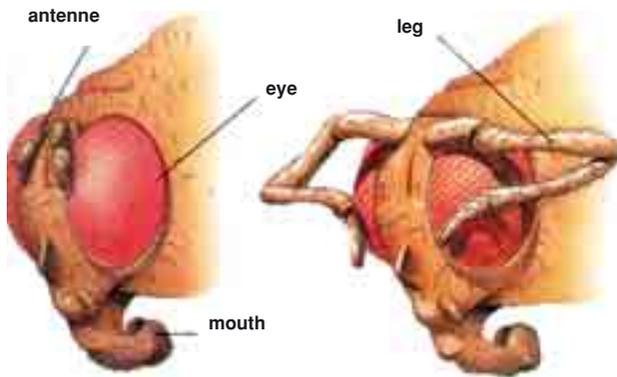


Darwin also gave similar examples. In his book *The Origin of Species*, for instance, he said that some bears going into water to find food transformed themselves into whales over time.⁸⁰

However, the laws of inheritance discovered by Gregor Mendel (1822-84) and verified by the science of genetics, which flourished in the twentieth century, utterly demolished the legend that acquired traits were passed on to subsequent generations. Thus, natural selection fell out of favor as an evolutionary mechanism.

Neo-Darwinism and Mutations

In order to find a solution, Darwinists advanced the "Modern Synthetic Theory," or as it is more commonly known, Neo-Darwinism, at the end of the 1930s. Neo-Darwinism added mutations, which are distortions formed in the genes of living beings due to such external factors as radiation or replication errors, as the "cause of favorable variations" in addition to natural mutation.



Since the beginning of the twentieth century, evolutionary biologists have sought examples of beneficial mutations by creating mutant flies. But these efforts have always resulted in sick and deformed creatures. The top picture shows the head of a normal fruit fly, and the picture on the left shows the head of a fruit fly with legs coming out of it, the result of mutation.

Today, the model that Darwinists espouse, despite their own awareness of its scientific invalidity, is neo-Darwinism. The theory maintains that millions of living beings formed as a result of a process whereby numerous complex organs of these organisms (e.g., ears, eyes, lungs, and wings) underwent "mutations," that is, genetic disorders. Yet, there is an outright scientific fact that totally undermines this theory: **Mutations do not cause living beings to develop; on the contrary, they are always harmful.**

The reason for this is very simple: **DNA has a very complex structure, and random effects can only harm it.** The American geneticist B. G. Ranganathan explains this as follows:

First, genuine mutations are very rare in nature. Secondly, most mutations are harmful since they are random, rather than orderly changes in the structure of genes; any random change in a highly ordered system will be for **the worse, not for the better.** For example, if an earthquake were to shake a highly ordered structure such as a building, there would be a random change in the framework of the building which, in all probability, would not be an improvement.⁸¹

Not surprisingly, no mutation example, which is useful, that is, which is observed to develop the genetic code, has been observed so far. All mutations have proved to be harmful. It was understood that mutation, which is presented as an "evolutionary mechanism," is actually a genetic occurrence that harms living things, and leaves them disabled. (The most common effect of mutation on human beings is cancer.) Of course, a destructive mechanism cannot be an "evolutionary mechanism." Natural selection, on the other hand, "can do nothing by itself," as Darwin also accepted. This fact shows us that **there is no "evolutionary mechanism" in nature**. Since no evolutionary mechanism exists, no such imaginary process called "evolution" could have taken place.

The Fossil Record: No Sign of Intermediate Forms

The clearest evidence that the scenario suggested by the theory of evolution did not take place is the fossil record.

According to the unscientific supposition of this theory, every living species has sprung from a predecessor. A previously existing species turned into something else over time and all species have come into being in this way. In other words, this transformation proceeds gradually over millions of years.

Had this been the case, numerous intermediary species should have existed and lived within this long transformation period.

For instance, some half-fish/half-reptiles should have lived in the past which had acquired some reptilian traits in addition to the fish traits they already had. Or there should have existed some reptile-birds, which acquired some bird traits in addition to the reptilian traits they already had. Since these would be in a transitional phase, they should be disabled, defective, crippled living beings. Evolutionists refer to these imaginary creatures, which they believe to have lived in the past, as "transitional forms."

If such animals ever really existed, there should be millions and even billions of them in number and variety. More importantly, the remains of these strange creatures should be present in the fossil record. In *The Origin of Species*, Darwin explained:

LIVING FOSSILS REFUTE EVOLUTION

Fossils are proof that evolution never happened. As the fossil record shows, living things came into being in a single moment, with all the characteristics they possess and never altered in the least for so long as the species survived. Fish have always existed as fish, insects as insects and reptiles as reptiles. There is no scientific validity to the claim that species develop gradually. Almighty Allah created all living things.



A 54-to-37-million-year-old fossil sunfish



A 295-million-year-old fossil sea urchin



A 125-million-year-old fossil cicada



A 50-million-year-old fossil sequoia leaf

If my theory be true, numberless intermediate varieties, linking most closely all of the species of the same group together must assuredly have existed... Consequently, evidence of their former existence could be found only amongst fossil remains.⁸²

However, **Darwin was well aware that no fossils of these intermediate forms had yet been found.** He regarded this as a major difficulty for his theory. In one chapter of his book titled "Difficulties on Theory," he wrote:

Why, if species have descended from other species by insensibly fine gradations, **do we not everywhere see innumerable transitional forms? Why is not all nature in confusion instead of the species being, as we see them, well defined?...** But, as by this theory innumerable transitional forms must have existed, **why do we not find them embedded in countless numbers in the crust of the earth?... Why then is not every geological formation and every stratum full of such intermediate links?**⁸³

Darwin's Hopes Shattered

However, although evolutionists have been making strenuous efforts to find fossils since the middle of the nineteenth century all over the world, **no transitional forms have yet been uncovered.** All of the fossils, contrary to the evolutionists' expectations, show that **life appeared on Earth all of a sudden and fully-formed.**

One famous British paleontologist, Derek V. Ager, admits this fact, even though he is an evolutionist:

The point emerges that if we examine the fossil record in detail, whether at the level of orders or of species, **we find—over and over again—not gradual evolution, but the sudden explosion of one group at the expense of another.**⁸⁴

This means that in **the fossil record, all living species suddenly emerge as fully formed, without any intermediate forms in between.** This is just the opposite of Darwin's assumptions. Also, this is very

strong evidence that **all living things are created**. The only explanation of a living species emerging suddenly and complete in every detail without any evolutionary ancestor is that it was created. This fact is admitted also by the widely known evolutionist biologist Douglas Futuyma:

Creation and evolution, between them, exhaust the possible explanations for the origin of living things. Organisms either appeared on the earth fully developed or they did not. If they did not, they must have developed from pre-existing species by some process of modification. If they did appear in a fully developed state, they must indeed have been created by some omnipotent intelligence.⁸⁵

Fossils show that living beings emerged fully developed and in a perfect state on the Earth. That means that "the origin of species," contrary to Darwin's supposition, is not evolution, but **Creation**.

The Tale of Human Evolution

The subject most often brought up by advocates of the theory of evolution is the subject of the origin of man. The Darwinist claim holds that man evolved from so-called ape-like crea-

Evolutionist newspapers and magazines often print pictures of primitive man. The only available source for these pictures is the imagination of the artist. Evolutionary theory has been so dented by scientific data that today we see less and less of it in the serious press.



tures. During this alleged evolutionary process, which is supposed to have started 4-5 million years ago, some "transitional forms" between man and his imaginary ancestors are supposed to have existed. According to this completely imaginary scenario, four basic "categories" are listed:

1. Australopithecus
2. Homo habilis
3. Homo erectus
4. Homo sapiens

Evolutionists call man's so-called first ape-like ancestors Australopithecus, which means "South African ape." These living beings are actually nothing but an old ape species that has become extinct. Extensive research done on various Australopithecus specimens by two world famous anatomists from England and the USA, namely, Lord Solly Zuckerman and Prof. Charles Oxnard, shows that these apes belonged to an ordinary ape species that became extinct and bore no resemblance to humans.⁸⁶

Evolutionists classify the next stage of human evolution as "homo," that is "man." According to their claim, the living beings in the Homo series are more developed than Australopithecus. Evolutionists devise a fanciful evolution scheme by arranging different fossils of these creatures in a particular order. This scheme is imaginary because it has never been proved that there is an evolutionary relation between these different classes. Ernst Mayr, one of the twentieth century's most important evolutionists, contends in his book *One Long Argument* that "particularly historical [puzzles] such as the origin of life or of Homo sapiens, are extremely difficult and may even resist a final, satisfying explanation."⁸⁷

By outlining the link chain as Australopithecus > Homo habilis > Homo erectus > Homo sapiens, evolutionists imply that each of these species is one another's ancestor. However, recent findings of paleoanthropologists have revealed that Australopithecus, Homo habilis, and Homo erectus lived at different parts of the world at the same time.⁸⁸

Moreover, a certain segment of humans classified as *Homo erectus* have lived up until very modern times. ***Homo sapiens neanderthalensis* and *Homo sapiens sapiens* (man) co-existed in the same region.**⁸⁹

This situation apparently indicates the invalidity of the claim that they are ancestors of one another. The late Stephen Jay Gould explained this deadlock of the theory of evolution although he was himself one of the leading advocates of evolution in the twentieth century:

What has become of our ladder if there are three coexisting lineages of hominids (*A. africanus*, the robust australopithecines, and *H. habilis*), none clearly derived from another? Moreover, none of the three display any evolutionary trends during their tenure on earth.⁹⁰

Put briefly, the scenario of human evolution, which is "upheld" with the help of various drawings of some "half ape, half human" creatures appearing in the media and course books, that is, frankly, by means of propaganda, is nothing but **a tale with no scientific foundation.**

Lord Solly Zuckerman, one of the most famous and respected scientists in the U.K., who carried out research on this subject for years and studied *Australopithecus* fossils for 15 years, finally concluded, despite being an evolutionist himself, **that there is, in fact, no such family tree branching out from ape-like creatures to man.**

Zuckerman also made an interesting "spectrum of science" ranging from those he considered scientific to those he considered unscientific. According to Zuckerman's spectrum, the most "scientific"—that is, depending on concrete data—fields of science are chemistry and physics. After them come the biological sciences and then the social sciences. At the far end of the spectrum, which is the part considered to be most "unscientific," are "extra-sensory perception"—concepts such as telepathy and sixth sense—and finally "human evolution." Zuckerman explains his reasoning:

We then move right off the register of objective truth into those fields of presumed biological science, like extrasensory perception or the interpretation of man's fossil history, where to the faithful

[evolutionist] anything is possible – and where the ardent believer [in evolution] is sometimes able to believe several contradictory things at the same time.⁹¹

The tale of human evolution boils down to nothing but the prejudiced interpretations of some fossils unearthed by certain people, who blindly adhere to their theory.

Darwinian Formula!

Besides all the technical evidence we have dealt with so far, let us now for once, examine what kind of a superstition the evolutionists have with an example so simple as to be understood even by children:

The theory of evolution asserts that life is formed by chance. According to this irrational claim, lifeless and unconscious atoms came together to form the cell and then they somehow formed other living things, including man. Let us think about that. When we bring together the elements that are the building-blocks of life such as carbon, phosphorus, nitrogen and potassium, only a heap is formed. No matter what treatments it undergoes, this atomic heap cannot form even a single living being. If you like, let us formulate an "experiment" on this subject and let us examine on the behalf of evolutionists what they really claim without pronouncing loudly under the name "Darwinian formula":

Let evolutionists put plenty of materials present in the composition of living things such as phosphorus, nitrogen, carbon, oxygen, iron, and magnesium into big barrels. Moreover, let them add in these barrels any material that does not exist under normal conditions, but they think as necessary. Let them add in this mixture as many amino acids and as many proteins as they like. Let them expose these mixtures to as much heat and moisture as they like. Let them stir these with whatever technologically developed device they like. Let them put the foremost scientists beside these barrels. Let these experts wait in turn beside these barrels for billions, and even trillions of years. Let them be free to use all

kinds of conditions they believe to be necessary for a human's formation. **No matter what they do, they cannot produce from these barrels a human, say a professor that examines his cell structure under the electron microscope.** They cannot produce giraffes, lions, bees, canaries, horses, dolphins, roses, orchids, lilies, carnations, bananas, oranges, apples, dates, tomatoes, melons, watermelons, figs, olives, grapes, peaches, peafowls, pheasants, multicolored butterflies, or millions of other living beings such as these. Indeed, they could not obtain even a single cell of any one of them.

Briefly, **unconscious atoms cannot form the cell** by coming together. They cannot take a new decision and divide this cell into two, then take other decisions and create the professors who first invent the electron microscope and then examine their own cell structure under that microscope. **Matter is an unconscious, lifeless heap, and it comes to life with Allah's superior Creation.**

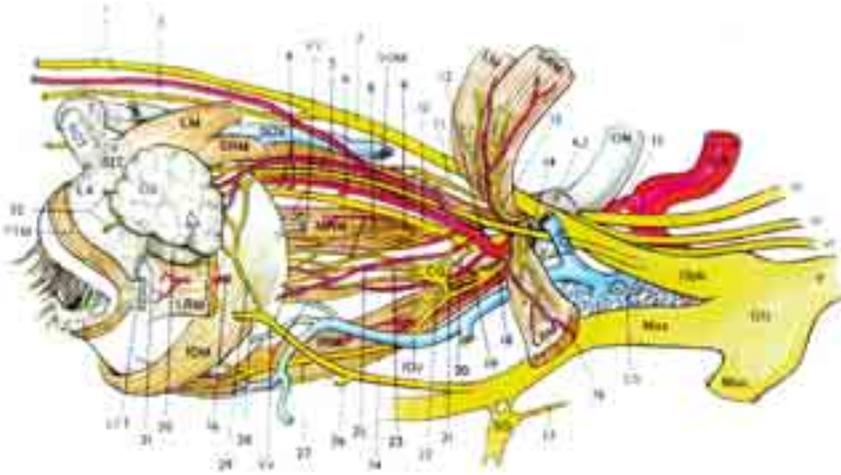
The theory of evolution, which claims the opposite, is a total fallacy completely contrary to reason. Thinking even a little bit on the claims of evolutionists discloses this reality, just as in the above example.

Technology in the Eye and the Ear

Another subject that remains unanswered by evolutionary theory is the excellent quality of perception in the eye and the ear.

Before passing on to the subject of the eye, let us briefly answer the question of how we see. Light rays coming from an object fall oppositely on the eye's retina. Here, these light rays are transmitted into electric signals by cells and reach a tiny spot at the back of the brain, the "center of vision." These electric signals are perceived in this center as an image after a series of processes. With this technical background, let us do some thinking.

The brain is insulated from light. That means that its inside is completely dark, and that no light reaches the place where it is located. Thus, the "center of vision" is never touched by light and may even be



All its components need to function together and perfectly if the eye is to see at all.

the darkest place you have ever known. However, you observe a luminous, bright world in this pitch darkness.

The image formed in the eye is so sharp and distinct that even the technology of the twentieth century has not been able to attain it. For instance, look at the book you are reading, your hands with which you are holding it, and then lift your head and look around you. Have you ever seen such a sharp and distinct image as this one at any other place? Even the most developed television screen produced by the greatest television producer in the world cannot provide such a sharp image for you. This is a three-dimensional, colored, and extremely sharp image. For more than 100 years, thousands of engineers have been trying to achieve this sharpness. Factories, huge premises were established, much research has been done and plans have been made for this purpose. Again, look at a TV screen and the book you hold in your hands. You will see that there is a big difference in sharpness and distinction. Moreover, the TV screen shows you a two-dimensional image, whereas with your eyes, you watch a three-dimensional perspective with depth.

For many years, tens of thousands of engineers have tried to make a three-dimensional TV and achieve the vision quality of the eye. Yes, they have made a three-dimensional television system, but it is not possible to watch it without putting on special 3-D glasses; moreover, it is only an artificial three-dimension. The background is more blurred, the foreground appears like a paper setting. Never has it been possible to produce a sharp and distinct vision like that of the eye. In both the camera and the television, there is a loss of image quality.

Evolutionists claim that the mechanism producing this sharp and distinct image has been formed by chance. Now, if somebody told you that the television in your room was formed as a result of chance, that all of its atoms just happened to come together and make up this device that produces an image, what would you think? How can atoms do what thousands of people cannot?

If a device producing a more primitive image than **the eye could not have been formed by chance**, then it is very evident that the eye and the image seen by the eye could not have been formed by chance. The same situation applies to the ear. The outer ear picks up the available sounds by the auricle and directs them to the middle ear, the middle ear transmits the sound vibrations by intensifying them, and the inner ear sends these vibrations to the brain by translating them into electric signals. Just as with the eye, the act of hearing finalizes in the center of hearing in the brain.

The situation in the eye is also true for the ear. That is, **the brain is insulated from sound** just as it is from light. It does not let any sound in. Therefore, no matter how noisy is the outside, the inside of the brain is completely silent. Nevertheless, the sharpest sounds are perceived in the brain. **In your completely silent brain, you listen to symphonies, and hear all of the noises in a crowded place.** However, were the sound level in your brain measured by a precise device at that moment, complete silence would be found to be prevailing there.

As is the case with imagery, decades of effort have been spent in trying to generate and reproduce sound that is faithful to the original. The

results of these efforts are sound recorders, high-fidelity systems, and systems for sensing sound. Despite all of this technology and the thousands of engineers and experts who have been working on this endeavor, no sound has yet been obtained that has the same sharpness and clarity as the sound perceived by the ear. Think of the highest-quality hi-fi systems produced by the largest company in the music industry. Even in these devices, when sound is recorded some of it is lost; or when you turn on a hi-fi you always hear a hissing sound before the music starts. However, the sounds that are the products of the human body's technology are extremely sharp and clear. A human ear never perceives a sound accompanied by a hissing sound or with atmospheric sounds as does a hi-fi; rather, it perceives sound exactly as it is, sharp and clear. This is the way it has been since **the Creation of man**.

So far, no man-made visual or recording apparatus has been as sensitive and successful in perceiving sensory data as are the eye and the ear. However, as far as seeing and hearing are concerned, a far greater truth lies beyond all this.

To Whom Does the Consciousness that Sees and Hears within the Brain Belong?

Who watches an alluring world in the brain, listens to symphonies and the twittering of birds, and smells the rose?

The stimulations coming from a person's eyes, ears, and nose travel to the brain as electro-chemical nerve impulses. In biology, physiology, and biochemistry books, you can find many details about how this image forms in the brain. However, you will never come across the most important fact: Who perceives these electro-chemical nerve impulses as images, sounds, odors, and sensory events in the brain? **There is a consciousness in the brain that perceives all this without feeling any need for an eye, an ear, and a nose.** To whom does this consciousness belong? Of course it does not belong to the nerves, the fat layer, and neurons comprising the brain. This is why Darwinist-materialists, who

believe that everything is comprised of matter, cannot answer these questions.

For **this consciousness is the spirit created by Allah**, which needs neither the eye to watch the images nor the ear to hear the sounds. Furthermore, it does not need the brain to think.

Everyone who reads this explicit and scientific fact should ponder on Almighty Allah, and fear and seek refuge in Him, for He squeezes the entire universe in a pitch-dark place of a few cubic centimeters in a three-dimensional, colored, shadowy, and luminous form.

A Materialist Faith

The information we have presented so far shows us that **the theory of evolution is incompatible with scientific findings**. The theory's claim regarding the origin of life is inconsistent with science, the evolutionary mechanisms it proposes have no evolutionary power, and fossils demonstrate that **the required intermediate forms have never existed**. So, it certainly follows that the theory of evolution should be pushed aside as an unscientific idea. This is how many ideas, such as the Earth-centered universe model, have been taken out of the agenda of science throughout history.

However, the theory of evolution is kept on the agenda of science. Some people even try to represent criticisms directed against it as an "attack on science." Why?

The reason is that this theory is an indispensable dogmatic belief for some circles. These circles are **blindly devoted to** materialist philosophy and adopt Darwinism because it is the only materialist explanation that can be put forward to explain the workings of nature.

Interestingly enough, they also confess this fact from time to time. A well-known geneticist and an outspoken evolutionist, Richard C. Lewontin from Harvard University, confesses that he is "first and foremost a materialist and then a scientist":

It is not that the methods and institutions of science somehow compel us accept a material explanation of the phenomenal world, but,

on the contrary, that we are forced by our a priori adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counter-intuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is absolute, so we cannot allow a Divine [intervention]...⁹²

These are explicit statements that **Darwinism is a dogma** kept alive just for the sake of adherence to materialism. This dogma maintains that there is no being save matter. Therefore, it argues that inanimate, unconscious matter brought life into being. It insists that millions of different living species (e.g., birds, fish, giraffes, tigers, insects, trees, flowers, whales, and human beings) originated as a result of the interactions between matter such as pouring rain, lightning flashes, and so on, out of inanimate matter. This is a precept contrary both to reason and science. Yet Darwinists continue to ignorantly defend it just so as not to acknowledge, in their own eyes, the evident existence of Allah.

Anyone who does not look at the origin of living beings with a materialist prejudice sees this evident truth: **All living beings are works of a Creator**, Who is All-Powerful, All-Wise, and All-Knowing. **This Creator is Allah**, Who created the whole universe from non-existence, in the most perfect form, and fashioned all living beings.

The Theory of Evolution: The Most Potent Spell in the World

Anyone free of prejudice and the influence of any particular ideology, who uses only his or her reason and logic, will clearly understand that belief in the theory of evolution, which brings to mind the superstitions of societies with no knowledge of science or civilization, is quite impossible.

As explained above, those who believe in the theory of evolution think that a few atoms and molecules thrown into a huge vat could produce thinking, reasoning professors and university students; such scientists as Einstein and Galileo; such artists as Humphrey

Bogart, Frank Sinatra and Luciano Pavarotti; as well as antelopes, lemon trees, and carnations. Moreover, as the scientists and professors who believe in this nonsense are educated people, it is quite justifiable to speak of this theory as "the most potent spell in history." Never before has any other belief or idea so taken away peoples' powers of reason, refused to allow them to think intelligently and logically, and hidden the truth from them as if they had been blindfolded. This is an even worse and unbelievable blindness than the totem worship in some parts of Africa, the people of Saba worshipping the Sun, the tribe of the Prophet Abraham (as) worshipping idols they had made with their own hands, or some among the people of the Prophet Moses (as) worshipping the Golden Calf.

In fact, Allah has pointed to this lack of reason in the Qur'an. In many verses, He reveals that some peoples' minds will be closed and that they will be powerless to see the truth. Some of these verses are as follows:

As for those who do not believe, it makes no difference to them whether you warn them or do not warn them, they will not believe. Allah has sealed up their hearts and hearing and over their eyes is a blindfold. They will have a terrible punishment. (Surat al-Baqara: 6-7)

... They have hearts with which they do not understand. They have eyes with which they do not see. They have ears with which they do not hear. Such people are like cattle. No, they are even further astray! They are the unaware. (Surat al-A'raf: 179)

Even if We opened up to them a door into heaven, and they spent the day ascending through it, they would only say: "Our eyesight is befuddled! Or rather we have been put under a spell!" (Surat al-Hijr: 14-15)

Words cannot express just how astonishing it is that this spell should hold such a wide community in thrall, keep people from the truth, and not be broken for 150 years. It is understandable that one or a few peo-

ple might believe in impossible scenarios and claims full of stupidity and illogicality. However, "magic" is the only possible explanation for people from all over the world believing that unconscious and lifeless atoms suddenly decided to come together and form a universe that functions with a flawless system of organization, discipline, reason, and consciousness; a planet named Earth with all of its features so perfectly suited to life; and living things full of countless complex systems.

In fact, in the Qur'an Allah relates the incident of the Prophet Moses (as) and Pharaoh to show that some people who support atheistic philosophies actually influence others by magic. When Pharaoh was told about the true religion, he told the Prophet Moses (as) to meet with his own magicians. When the Prophet Moses (as) did so, he told them to demonstrate their abilities first. The verses continue:

He said: "You throw." And when they threw, they cast a spell on the people's eyes and caused them to feel great fear of them. They produced an extremely powerful magic. (Surat al-A'raf, 116)

As we have seen, Pharaoh's magicians were able to deceive everyone, apart from the Prophet Moses (as) and those who believed in him. However, his evidence broke the spell, or "swallowed up what they had forged," as revealed in the verse:

We revealed to Moses: "Throw down your staff." And it immediately swallowed up what they had forged. So the Truth took place and what they did was shown to be false. (Surat al-A'raf, 117-118)

As we can see, when people realized that a spell had been cast upon them and that what they saw was just an illusion, Pharaoh's magicians lost all credibility. In the present day too, unless those who, under the influence of a similar spell, believe in these ridiculous claims under their scientific disguise and spend their lives defending them, abandon their superstitious beliefs, they also will be humiliated when the full truth emerges and the spell is broken. In fact, world-renowned British writer and philosopher Malcolm Muggeridge, who was an atheist defending evolution for some 60 years, but who subsequently realized the truth,

reveals the position in which the theory of evolution would find itself in the near future in these terms:

I myself am convinced that the theory of evolution, especially the extent to which it's been applied , **will be one of the great jokes in the history books in the future.** Posterity will marvel that so very flimsy and dubious an hypothesis could be accepted with the incredible credulity that it has.⁹³

That future is not far off: On the contrary, people will soon see that "chance" is not a deity, and will look back on **the theory of evolution as the worst deceit and the most terrible spell in the world.** That spell is already rapidly beginning to be lifted from the shoulders of people all over the world. Many people who see its true face are wondering with amazement how they could ever have been taken in by it.

*They said, "Glory be to You! We
have no knowledge except what
You have taught us. You are the
All-Knowing, the All-Wise."
(Surat al-Baqara: 32)*

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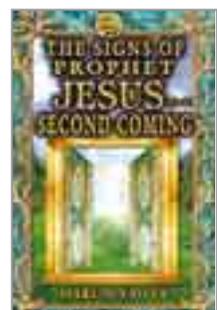
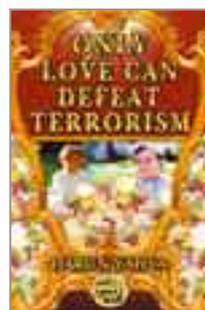
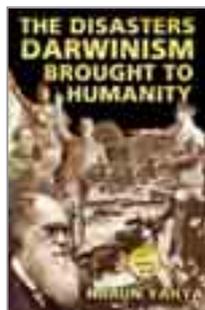
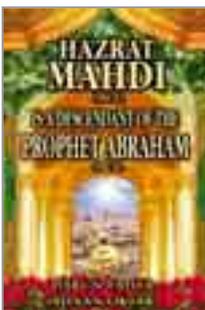
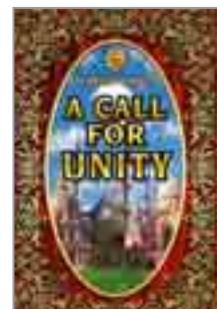
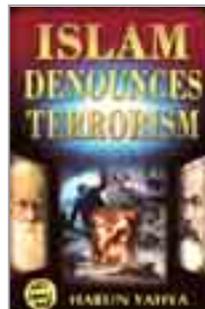
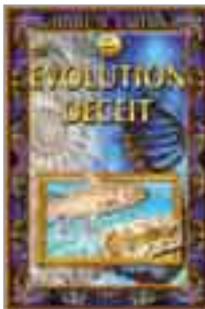
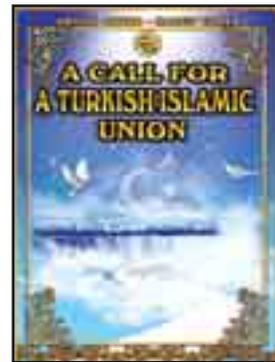
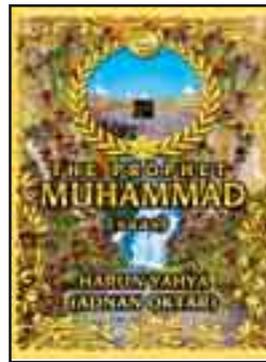
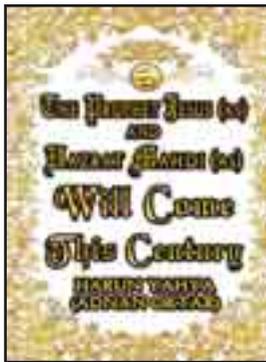
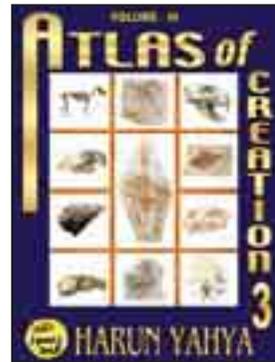
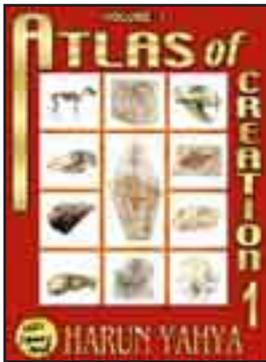


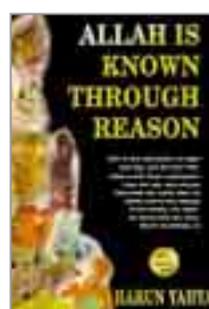
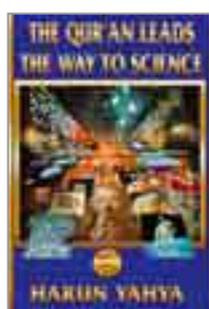
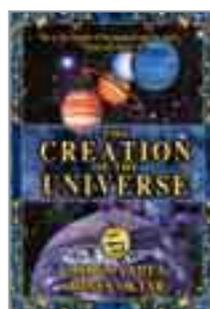
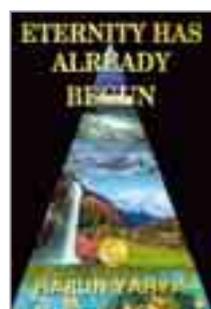
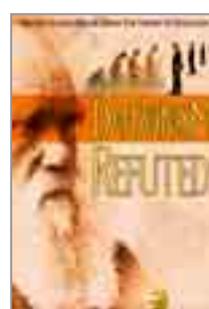
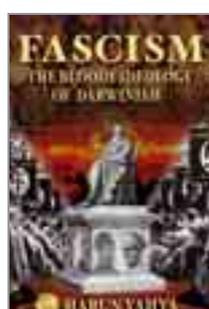
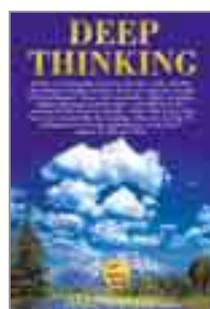
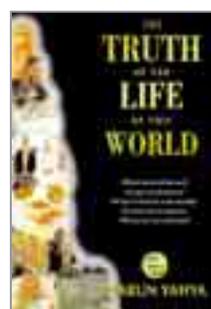
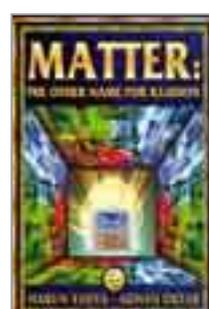
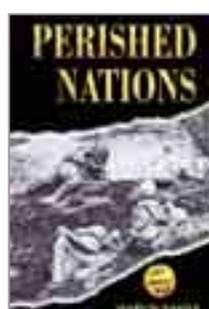
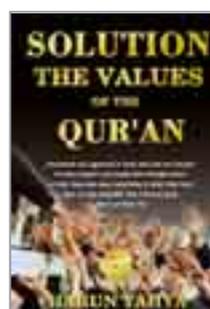
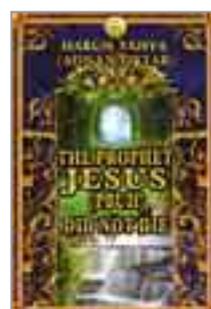
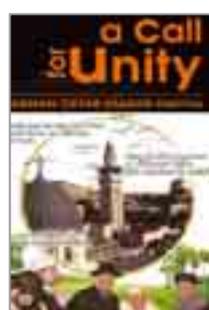
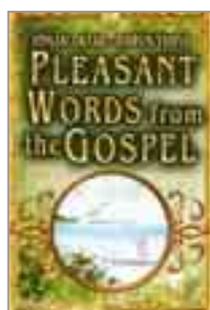
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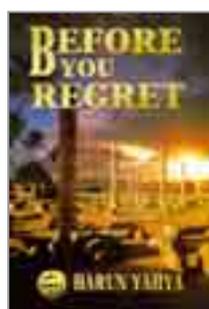
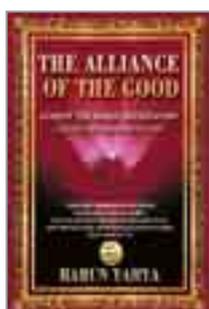
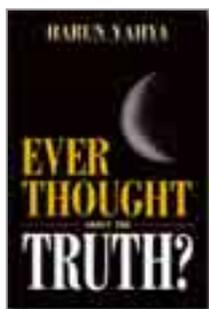
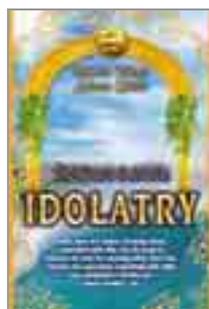
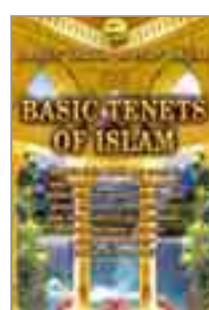
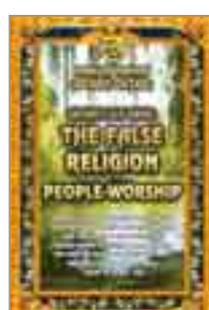
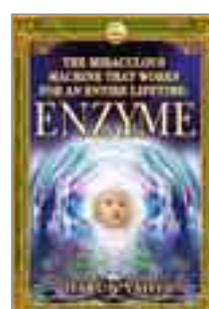
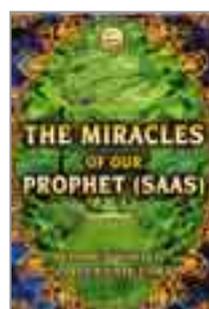
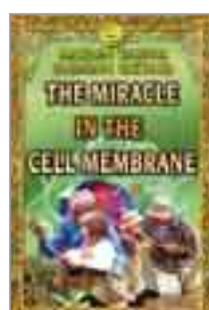
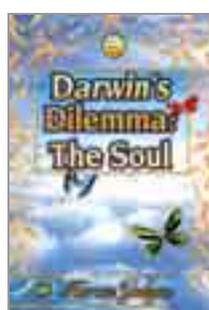
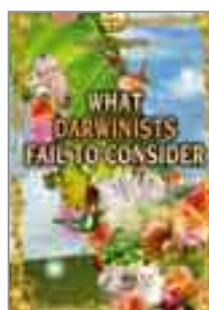
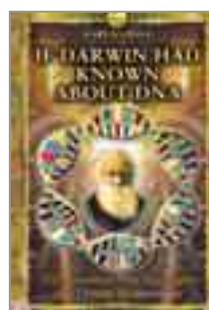
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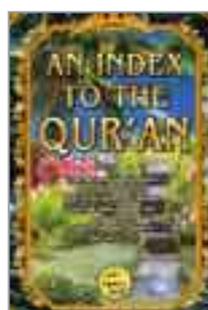
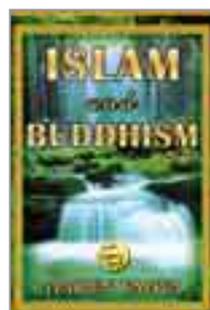
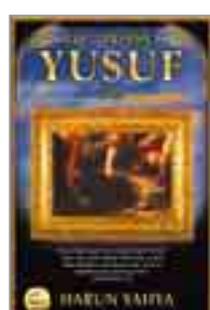
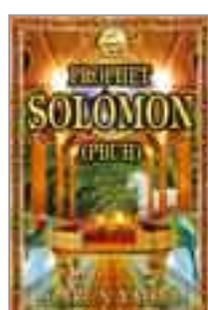
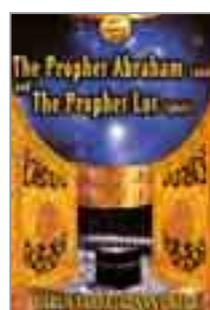
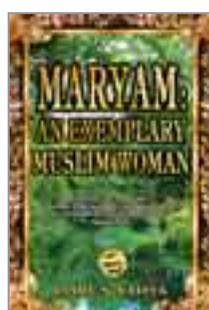
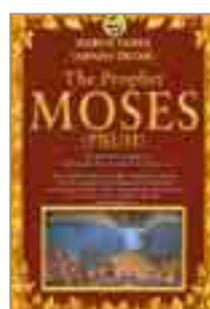
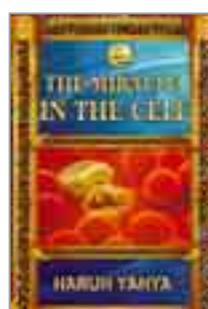
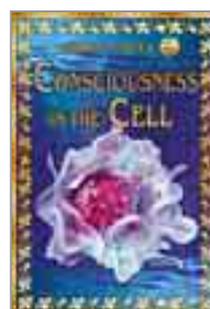
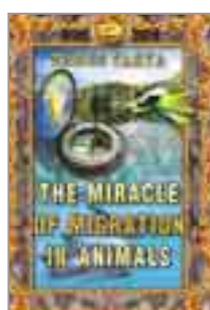
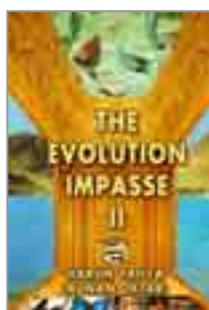


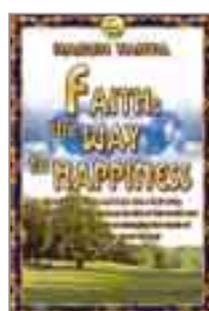
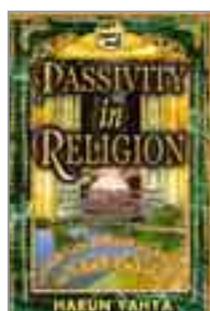
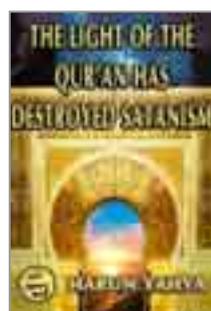
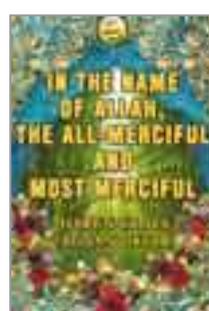
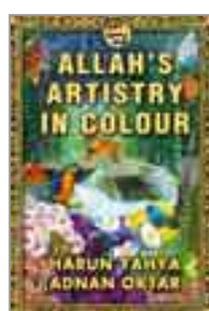
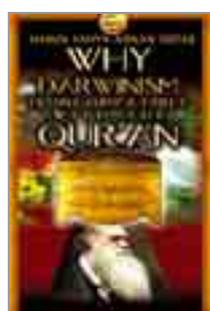
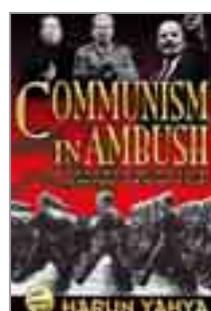
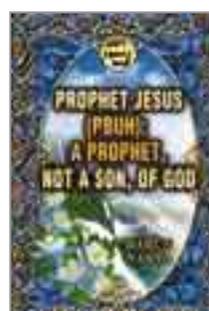
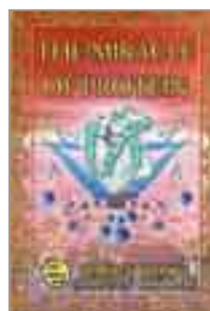
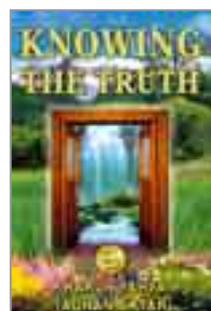
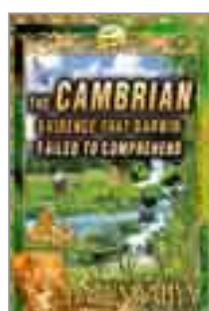
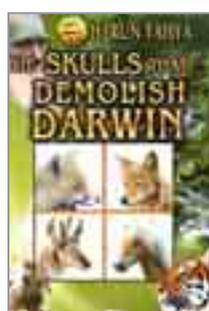
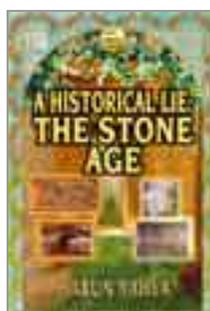
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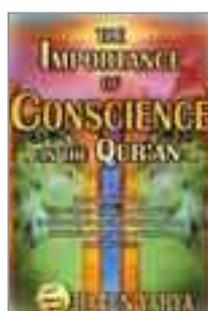
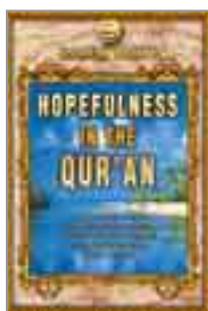
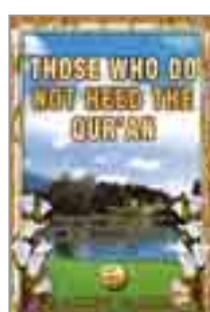
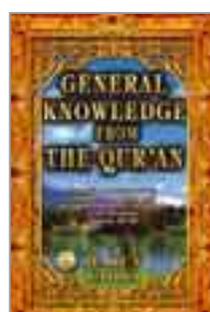
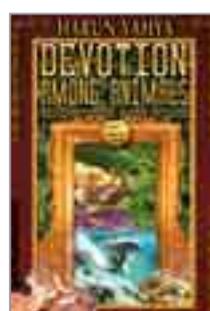
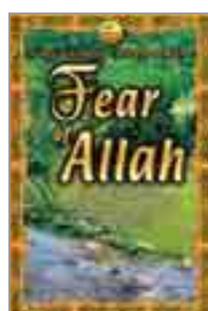
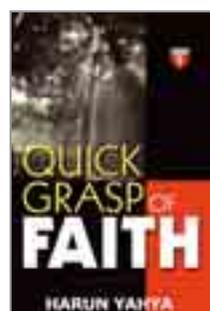
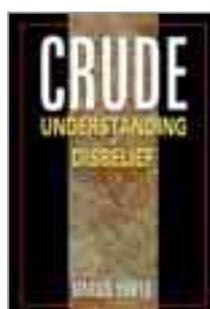
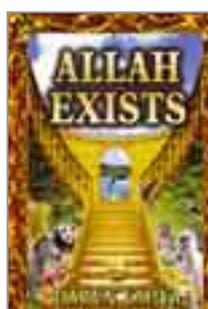
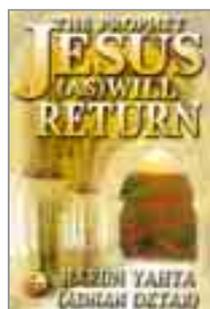
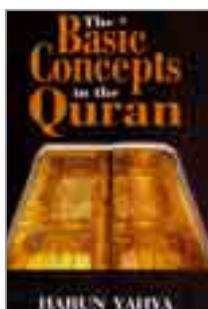


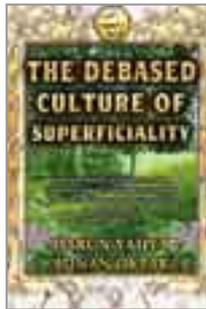
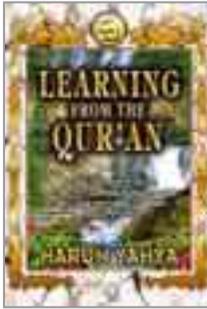




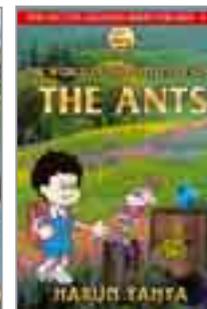
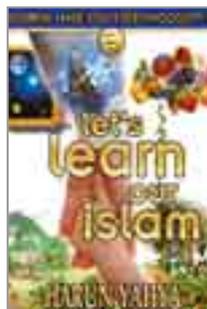
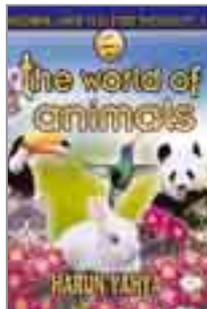
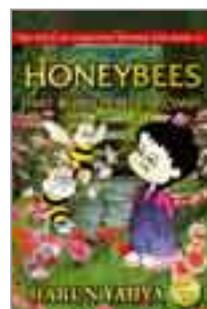
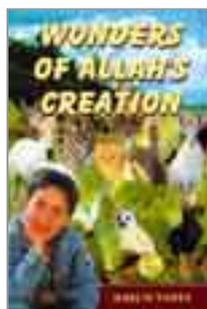
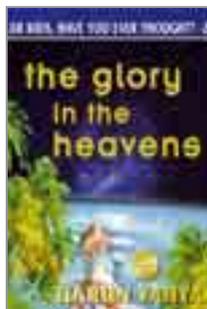
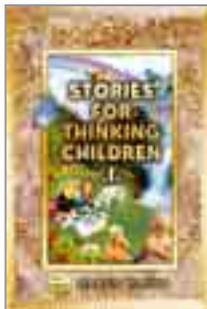








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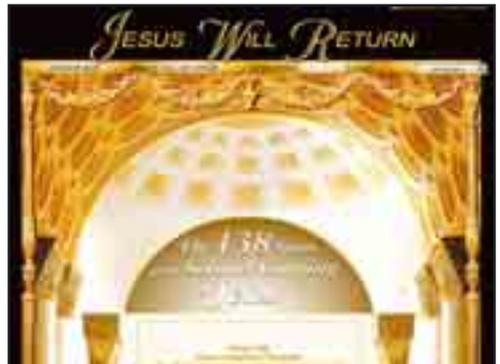
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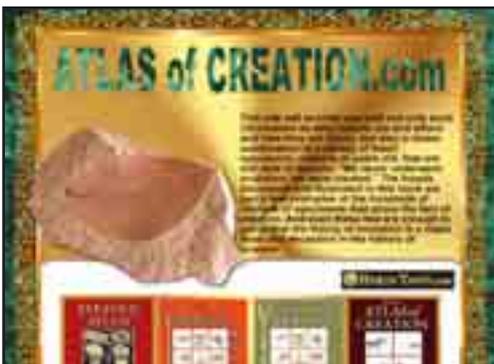
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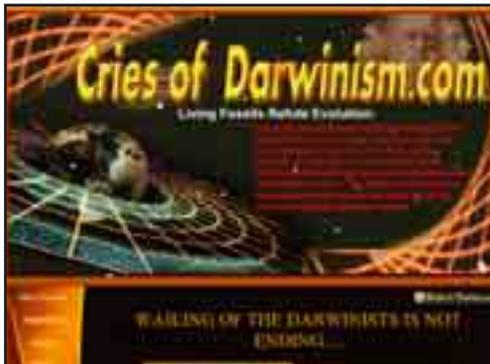
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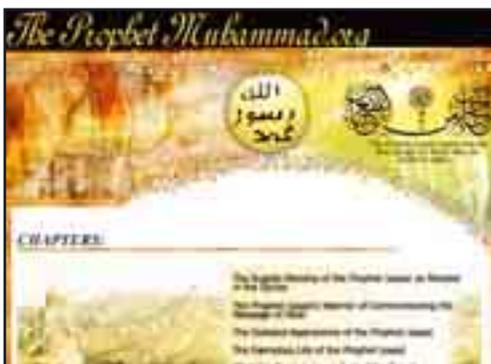
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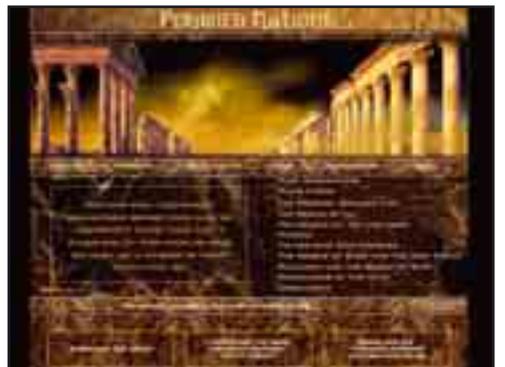
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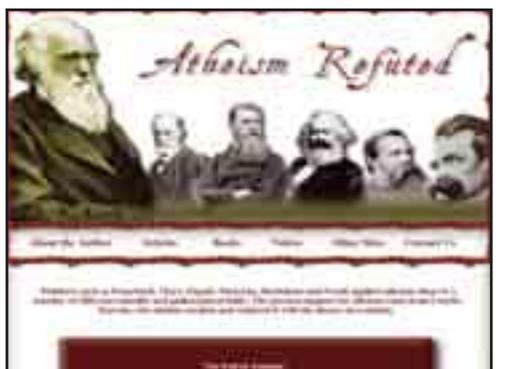
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