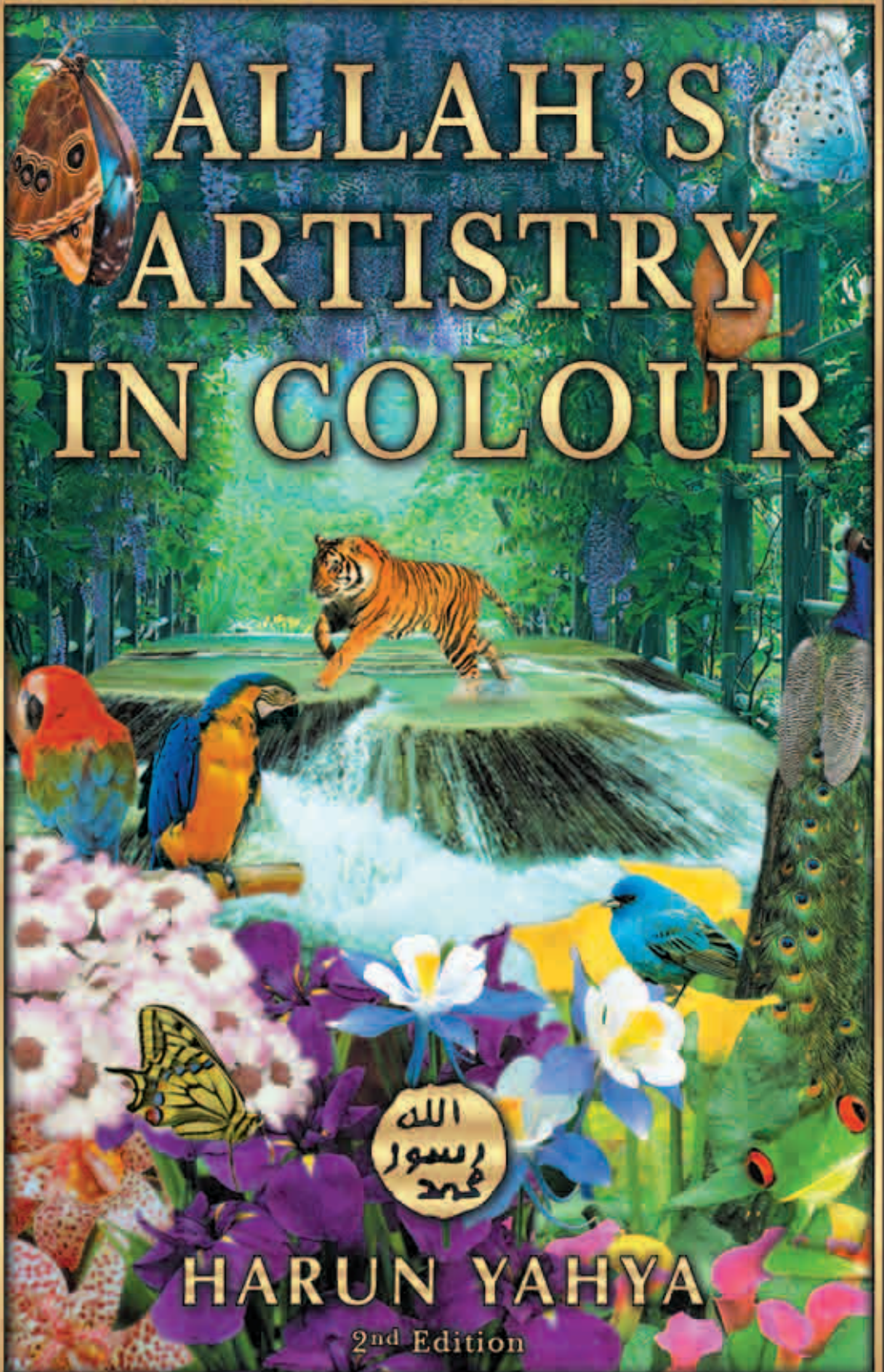
ALLAH'S ARTISTRY IN COLOUR



HARUN YAHYA

2nd Edition

A watchful eye will immediately see that not only living beings but also everything else in nature is just the way it should be, each being in the most appropriate place for it. What's more, he will understand that everything has been given to the service of men. The blue, refreshing colour of the sky, the colourful appearances of flowers, the trees in bright green, the pastures, the moon, which lights up the world in pitch darkness, the stars and all the other beauties that we cannot count are manifestations of the artistry of Allah. Allah has created the universe and everything animate and inanimate therein flawlessly. Allah has control over all things; He is the Most Powerful, the Almighty.

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)

ABOUT THE AUTHOR

The author, who writes under the pen-name Harun Yahya, was born in Ankara in 1956. He studied arts at Istanbul's Mimar Sinan University, and philosophy at Istanbul University. Since the 1980s, the author has published many books on political, faith-related and scientific issues. His main focus has been the refutation of Darwinism and materialism, two modern myths presented under a scientific guise. Harun Yahya's books appeal to all kinds of readers, Muslims and non-Muslims alike, regardless of their age, race, or nationality, for they focus on one objective: to broaden the readers' perspective by encouraging them to think about a number of critical issues, such as the existence of Allah and His unity, and to display the decrepit foundations and perverted works of godless systems.

بسم الله الرحمن الرحيم

First Published by Vural Yayıncılık, İstanbul, Turkey in November 1999

First English Edition published in August 2000
Second English Edition published in August 2003

Published by:
Ta-Ha Publishers Ltd.
1 Wynne Road
London SW9 OBB
United Kingdom

Website: http://www.taha-publishers.com
E-Mail: sales @ taha-publishers.com

By Harun Yahya
Translated By: Mustapha Ahmad
Edited By: Abdassamad Clarke

A catalog record of this book is available from the British Library
ISBN 1-84200-016-0

Printed and bound by:
Secil Ofset in İstanbul
Address: Yüzyıl Mahallesi MAS-SIT Matbaacılar Sitesi
4. Cadde No:77 Bağcılar- İstanbul / TURKEY

Website: http: // www.harunyahya.com

Ta-Ha Publishers Ltd.
1 Wynne Road London SW9 OBB

ALLAH'S ARTISTRY IN COLOUR

HARUN YAHYA

ABOUT THE AUTHOR

Now writing under the pen-name of HARUN YAHYA, he was born in Ankara in 1956. Having completed his primary and secondary education in Ankara, he studied 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.

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 people's lack of faith. The Prophet's seal on the his books' covers is symbolic and is linked to the their contents. It represents the Qur'an (the final scripture) and the Prophet Muhammad (peace be upon him), last of the prophets. Under the guidance of the Qur'an and the Sunnah (teachings of the Prophet), the author makes it his purpose to disprove each fundamental tenet of godless 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, 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 godless 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, and Spain to Brazil. Some of his books are available in English, French, German, Spanish, Italian, Portuguese, Urdu, Arabic, Albanian, Russian, Serbo-Croat (Bosnian), Polish, Malay, Uygur Turkish, and Indonesian.

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 characterised 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, thanks to 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 chaos, 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 emphasise 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 twentyfirst century will attain the peace, justice, and happiness promised in the Qur'an.

TO THE READER

- 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 ensure that everyone of every age and from every social group can easily understand them. Thanks to their effective, lucid narrative, they can be read at a one sitting. Even those who rigorously reject spirituality are influenced by the facts these books document and cannot refute the truthfulness of their contents.

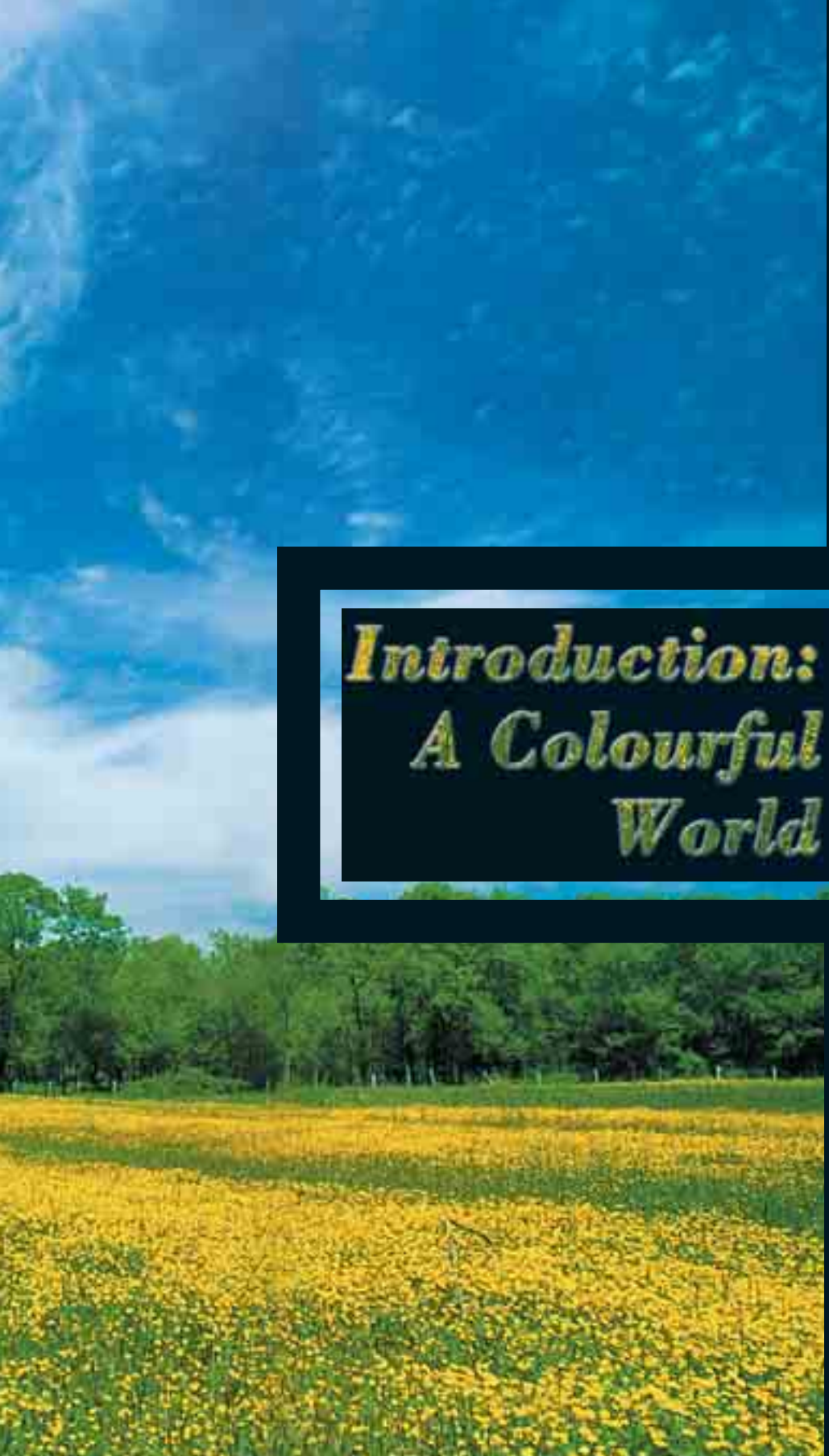
- This and all the other books by the author can be read individually, or discussed in a group. Readers eager to profit from the books will find discussion very useful, letting them relate their reflections and experiences to one another.

- 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.

Contents



Introduction: A Colourful World

Have you ever thought what it would be like to live in a world without colour? Free yourself for a moment from your experience, forget all that you've learned and start using your imagination. Try to visualise your body, the people around you, the seas, the sky, trees, flowers, in short everything in black. Imagine that there is no colour around you. Try to think how you would feel if people, cats, dogs, birds, butterflies, and fruits had no colour at all. You would never want to live in such a world, would you?

Most people may never have thought about what a colourful world they are living in or wondered how such a diversity of colour has come to exist on earth. They may never have given a thought to how a world without colour would be. This is because everyone who sees was born into a world full of colour. However, a model of a black and white, colourless world is not impossible. On the contrary, the really amazing thing is our living in a bright, colourful world. (In the following chapters, we will discuss in detail why the existence of a colourful world is so amazing)

A colourless world would normally be thought of as having only black, white and shades of grey. However, black, white and shades of grey are also colours. In this respect, it is difficult to imagine colourlessness. To describe colourlessness, one always feels the need to mention a colour. With statements such as "it was colourless, completely dark", "there was no colour in her face; it was completely white" people try to describe colourlessness. In fact, these are not the descriptions of colourlessness, but of a world of black and white.

Try, just for a second, to imagine that all of a sudden, everything loses its colour. In such a situation, everything would mix with everything else and it would become impossible to distinguish one object from another. It would become impossible to see, for example, an orange, red strawberries or colourful flowers on a brown wooden table, for neither would the colour of the orange be orange, nor that of the table brown, nor that of the strawberries red. For a person, it would be quite annoying to live, even for a short time, in such a colourless world, which is even difficult to describe.

We always see a world full of colour.

When the pictures above and below are compared, it will be better understood how nice it is to see a world full of colour. Colours are one of the greatest blessings that Allah has bestowed upon people in the world.

Colour has a crucial role in man's communication with the outside world, in the proper functioning of his memory, and in his brain's fulfilment of its learning functions. This is because humans can develop appropriate connections between events and places, people and objects only through their external appearances and colours. Neither hearing nor touch alone suffice to define objects. For humans, the external world only means something when it is seen as a whole with its colours.

Identifying objects and our surroundings are not the only benefits from the diversity of colours. The perfect harmony of colour in nature gives the human soul great pleasure. In order to see this harmony and derive pleasure from every detail of it, man has been equipped with a pair of eyes, which have a very special design. In the world of animate beings, human eyes are the most functional and can perceive colours in their smallest details, so much so that the human eye is sensitive to millions of colours.[1] Evidently, the visual apparatus in humans that works so perfectly has been specially designed to see a world full of colour.

The only being on earth that can understand the existence of such an order in the universe is man because he has the power to reflect and reason. Hence, in the light of all the foregoing, we conclude the following:

Every detail, pattern and colour in the heavens and the earth have been created for humans to acknowledge and so to appreciate this order and reflect on it. The colours in nature have been arranged in such a manner as to appeal to the human soul. Perfect symmetry and harmony prevail within colour, both in the worlds of animate and inanimate beings. This situation will certainly evoke some questions in the mind of someone who reflects, such as:

What makes the earth colourful? How do the colours, which make our world so extraordinarily beautiful, come into being? To whom belong the design of the diverse colours and the harmony between them?

Is it possible to say that whatever exists might have come into existence by purposeless changes brought about by a chain of coincidence?

Certainly, no one would claim such an absurdity. Uncontrolled coincidences cannot create anything, let alone billions of colours. Just observe the wings of a butterfly or colourful flowers of any kind, each of which looks like a wonder of art. It is surely impossible for sound reason to at-

tribute all these to unconscious processes.

We can have a better understanding of this fact if we take an example. When one sees a painting depicting trees and flowers in nature, one would not claim nor even think that the harmony of colour, the organised patterns and the conscious design in this painting could have come into existence by coincidence. If someone came along and said, "the paint boxes were overturned by the wind, mixed, and with the effect of rain etc., and after a long period of time this beautiful painting was formed", it is certain that nobody would take him seriously. There is a very interesting situation here. Although nobody would attempt to put forward such an unreasonable claim, some people can nevertheless claim that the perfect colouring and symmetry of nature came about by such an unconscious process. Nevertheless, evolutionists produce theses that it is the workings of coincidence to explain this subject and they produce various researches. They do not hesitate to put forward baseless claims on the issue.

This is obvious blindness, with which it is difficult to come to terms. Still, someone who escapes from this blindness through exercising his faculty of thought will understand that he actually lives in an extremely miraculous environment on the earth. He would also fully acknowledge that such an environment furnished with the most appropriate conditions for the survival of humankind could not have come into existence by chance.

Just as a man who reflects, acknowledges the moment he looks at a painting that it has a painter, so will he understand that the multicoloured, harmonious and extremely picturesque environment around him also has a Creator.

This Creator is Allah, Who has no partner in creation, Who creates everything in full harmony, and Who placed us in this world overflowing with numerous beautiful things embellished with millions of colours. All the things Allah creates are in perfect harmony with each other. Allah describes the uniqueness of His artistry in creation in the Qur'an as follows:

> **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)**


What Is Colour?
How Is It Made?

Some details have an important place in the minds of humans and they never change. Let us begin with trees, which are very familiar to us. The colour of trees is most often either green or shades of green. It is well known that during autumn, leaves change colour. Similarly, the colour of sky is either blue, shades of grey when cloudy or yellows and reds at sunrise and sunset. The colours of fruit never alter; the rich and varied colours of the apricot and of the cherry are set, and are always familiar to us. Every living being and every object held under light has a colour. Have a careful look at the things around you. What do you see? The table, the chairs, the trees you see through your window, the sky, the walls of your house, the faces of the people around you, the fruit you eat, the book you are reading at this minute… Each one of them have distinct colours. Have you ever thought how it is that all these colours have been formed and arranged?

Let us examine in general what is required for the formation of colours that play significant roles for life. (These points will be discussed later on in detail). For the formation of a single colour, for example, red or green, each of the following processes has to take place and, importantly, in the following sequence.

1. The first condition required for the formation of colour is the existence of light. In this respect, it will be useful to start with examining the properties of the light coming from the sun. For the formation of colours, the light coming from the sun to the earth must have a certain wavelength to produce colours. The proportions of this light, called "visible light", to all other light rays emitted by the sun is one in 10^{25}. This hardly believable, tiny proportion of the light rays that are necessary for the formation of colour reach the earth from the sun.

2. In fact, most of the sunrays diffused by the

sun across space bear some characteristics harmful to the eye. For this reason, the light arriving on earth must take such a form that it can be easily perceived by the eye and not harm it. For this, the rays must pass through a filter. This giant filter is the "atmosphere" which surrounds the earth.

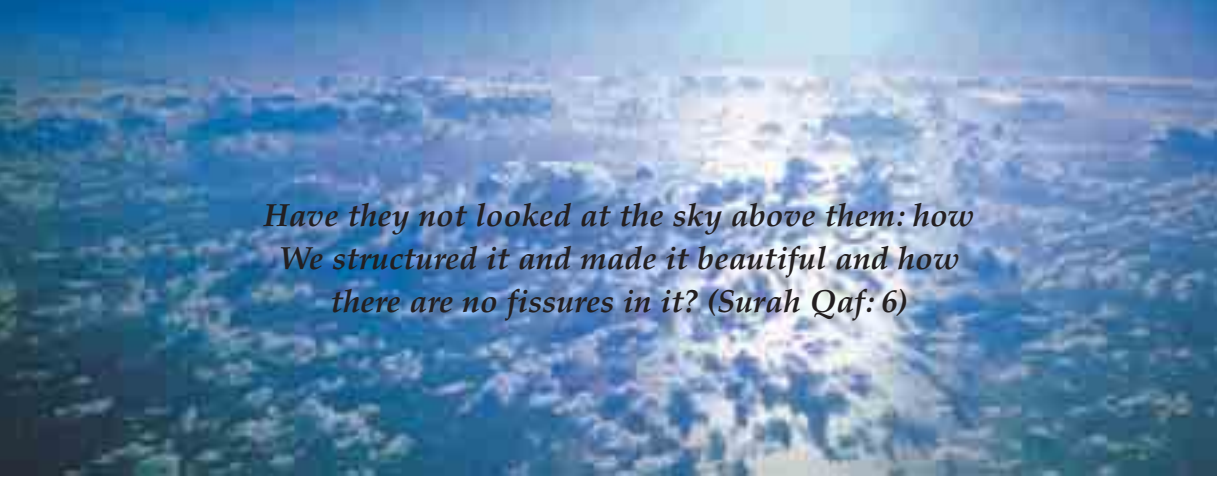
3. The light passing through the atmosphere is spread over the earth, and on hitting the objects it encounters, it is reflected. The objects on which light falls must not be of a type that do not absorb light but reflect it. In other words, the structural quality of the objects must also be in harmony with the light reaching the earth so that colour can form. This condition is also fulfilled and a new light wave is reflected from the objects on which the light coming from the sun strikes.

4. Another essential step in the process of colour formation is the need for a perceiver to perceive the light waves, which is the eye. It is essential that the light waves be in harmony also with the organs of sight.

5. The rays coming from the sun must pass through the lens and the layers of the eye and be converted into nerve impulses in the retina. Then these signals must be conveyed to the vision centre of the brain, which is responsible for making sense of sight.

6. There is a last step that has to be fulfilled for us to "see" any colour. The last stage in the formation of colours is the interpretation of the electric signals,

The importance of colours in man's life is indisputable as every object acquires a meaning with its colours. Imagine that none of the colours you see in this photograph on the left (including black and white) exist at all. Certainly, you would not be able see any of the objects in the photograph. For the formation of even a single one of these numerous colours present on these objects, quite a few factors must be fulfilled, all at the same time. Allah has made the formation of colours dependent on the existence of a very detailed system.



Through its special layers, the atmosphere absorbs most of the harmful rays arriving from the sun or space. Allah has designed each one of these layers for the sake of life on earth.

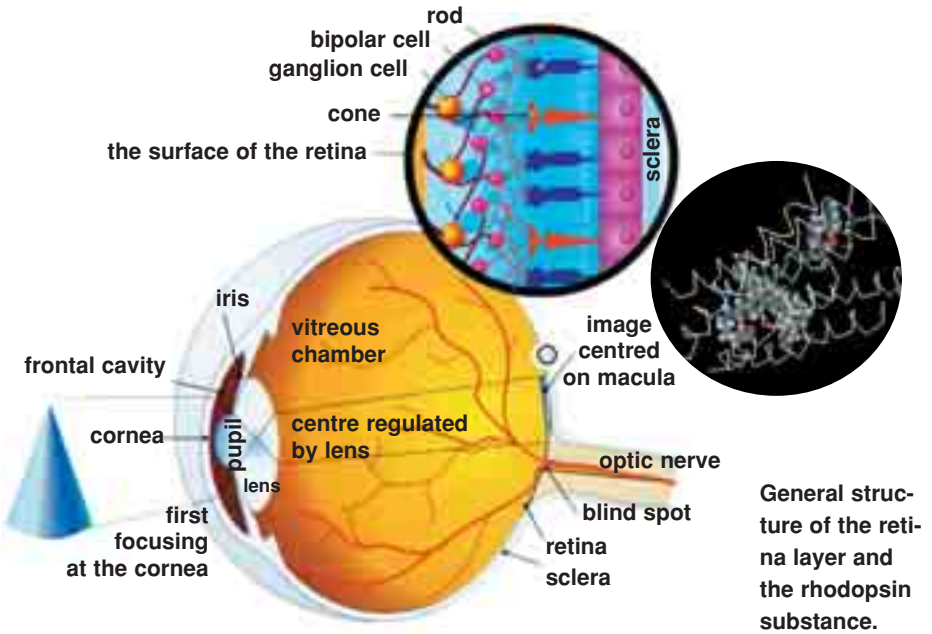
which arrive at the vision centre of brain, as "colour" by very special nerve cells located there.

As seen, for the formation of a single colour, a very detailed and interdependent sequence of processes is required.

All the information we have about colour indicates that every process that takes place during the formation of colour is set on very delicate balances. Without these balances, we would inevitably be left in a fuzzy dark world instead of a clear colourful one, and would even lose our ability to see. Let us suppose that of the above-mentioned items, only one – the nerve cells that perceive the electric signals generated by the retina – does not exist. Neither the sunlight being within the visible spectrum, nor the other parts of the eye being completely functional, nor the existence of the atmosphere would be adequate and compensate for this lack.

The Role of Retina in Seeing

Let us examine the retina closer and in more detail. Let us suppose that the pigmentary substance called "rhodopsin", operating in the retina, is absent. Rhodopsin is a substance that ceases functioning under heavy light but is regenerated in darkness. The eye cannot see clearly in dim light unless sufficient rhodopsin is produced in the eye. The function of rhodopsin is to increase the efficiency with which the eye generates a nerve impulse from dim light. This substance is produced as much as required exactly when it is needed. When the rhodopsin balance is maintained, images become clear. What would happen if rhodopsin, which is



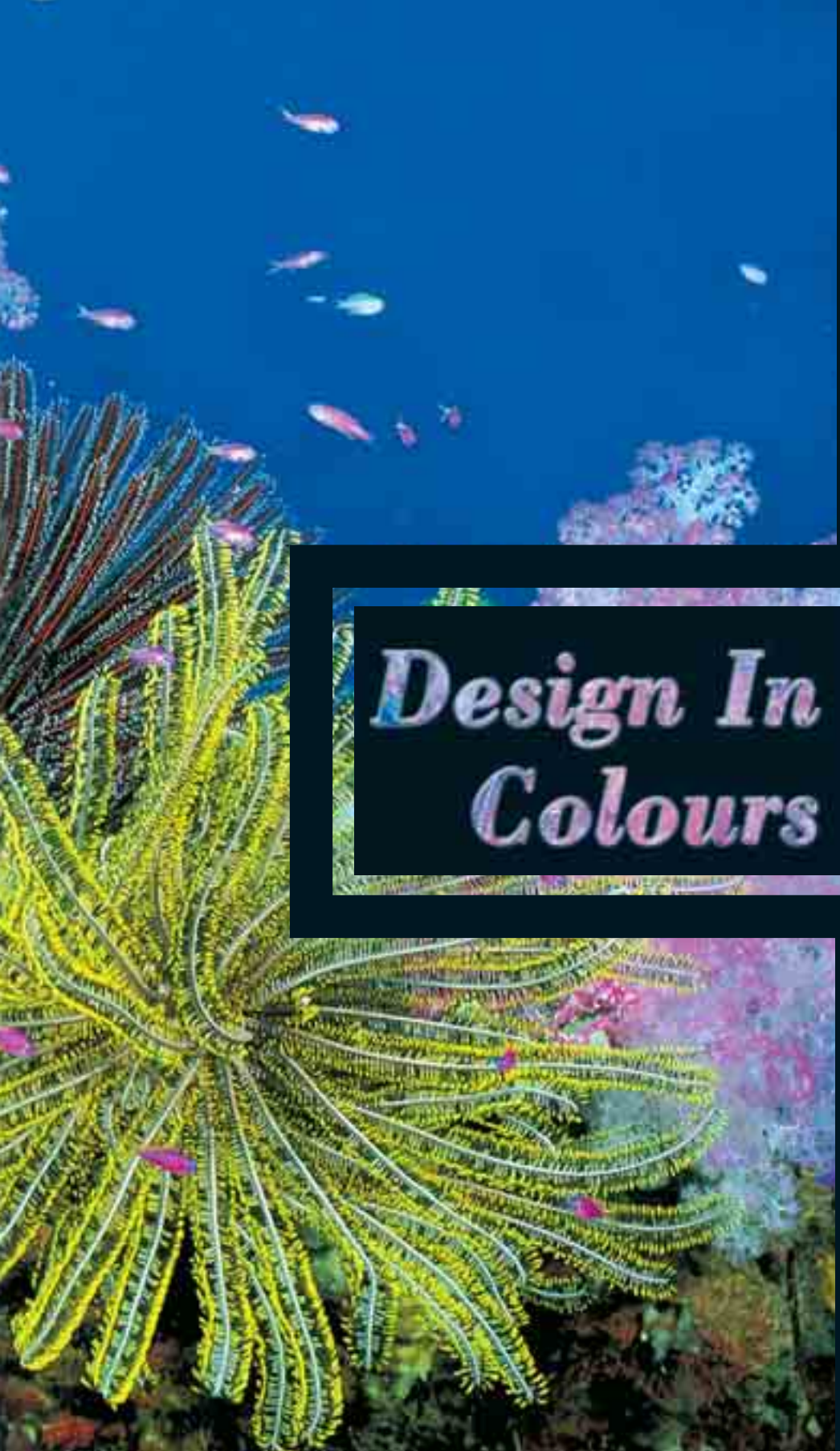
General structure of the retina layer and the rhodopsin substance.

very significant for the process of sight, did not exist? In that case, man would be capable of seeing only in bright light.[2] It is therefore evident that there is a perfect system within the eye, which has been designed down to the smallest detail.

Then, whose work of art is this system, which saves us from darkness and presents us a world full of colour?

Every stage mentioned thus far includes a series of processes, which require the existence of wisdom, will and power in their being brought into being. It is plain that there is no chance of such a chain of processes existing in such harmony having been formed by chance. It is also impossible for such a system to have been formed over time. The result would not change at all even if millions and even billions of years were allowed to pass. The systems to comprising a colourful world would never emerge by coincidence. Such perfect systems can come into being only as a result of special design, which is to mean that they are created. Allah possesses eternal power and wisdom that cover the whole universe. Examples of Allah's matchless artistry in creation stretch across the entire order of the universe. The unique design evident in the formation of colour is also an outcome of the peerless creation of Allah. Allah has power over all things.

(He is) the Originator of the heavens and earth. When He decides on something, He just says to it, 'Be!' and it is. (Surat al-Baqara: 117)


Design In
Colours

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. (Surat al-Baqara: 255)

Colour is a concept that helps us to identify the properties of objects and define them more precisely. Thinking about the colours of the objects around us, we simply come to notice what a variety of detailed colours we are surrounded by. Everything, animate or inanimate, has a colour. Living creatures of the same species have the same particular colours everywhere in the world. No matter where you go, the colour of the flesh of the water-melon is always red, kiwis are always green, seas are always shades of blue and green, snow is white, lemons are yellow, the colour of elephants is the same in any part of the world as also the colours of trees. They never change. This goes for artificially produced colours as well. Wherever you go on the earth, if you mix red with yellow, you will get orange or if you mix black and white you will get grey. The result is always the same.

At this point, it may be useful to think somewhat differently. First, let us think by asking the question of how the colours of objects are made. We can explain this by an example. Imagine that you walk into a store and see fabric of different designs and models, the colours of which are extremely harmonious with each other. Surely, those fabrics did not come there by chance; conscious people drafted their designs, determined their colours, subjected them to a number of dying processes, and after putting them through many other intermediate stages, they displayed them in that store. In short, the existence of these fabrics depends on the people who designed and manufactured them. When you see them, you do not say that they came there by chance, or that their designs were formed by coincidence as a result of paints spilt over the fabrics. In fact, no man of reason would make such a claim. Indeed, there is a conscious Will that presents us the views we see in nature all the time, the butterflies, flowers,

multi-coloured places under the sea, trees, and clouds etc., just in the way these fabrics are presented to us. The diversity in the universe is the consequence of a special design. This design is manifested in every stage from the formation of light to its becoming a colourful image in our brain. This is one of the greatest evidences of the existence of an Owner, that is, a Designer of the design in colours. Surely, Allah, Who possesses an infinitely superior wisdom and power of creation, creates all the colours and designs in the universe that man admires.

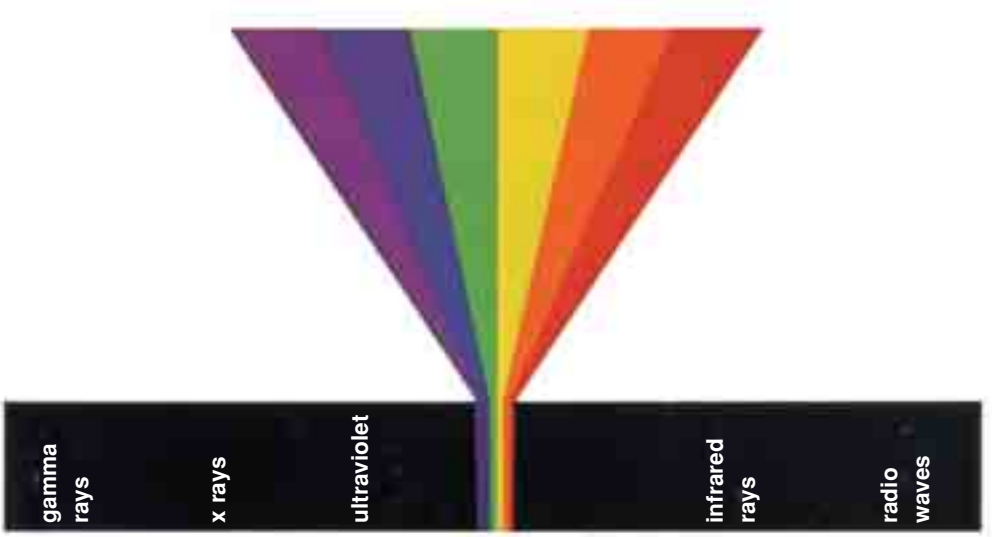
No one would claim that the fabric seen in the picture came there by coincidence, and has no designer. Similarly, it cannot be claimed that rainbows, butterflies, flowers, sea creatures, and clouds, in short, everything on earth has no designer. The designs of the colours and forms of all these things belong to Allah, Who creates without any preceding example.

The stages of colour formation were briefly listed earlier. In this chapter, the superior design evident in colour will be examined under separate headings in accordance with the progression from light to eye and brain.

1. Light, Life and Colour

The sun is only one of the billions of medium size stars in the universe. What makes the sun the most important star of the universe for us is its size, its relationship to the planets moving around it and the particular rays it emits. If just one of these characteristics of the sun were different from current values, there would be no life on earth. Indeed, the sun has the ideal values for life to originate and be maintained on earth.[3] This is why scientists describe the sun as the "source of life" on earth.

Sunlight is the only source of heat, heating the earth in the most appropriate way, and light, helping plants with their photosynthesis. It is well known that heat and photosynthesis are essential for life. In addition, the existence of daylight and a colourful world depend on the rays emit-



The wavelengths of the rays coming from space may be of very different types, ranging from radio waves, which have the longest wavelengths, to gamma rays, which have extremely short wavelengths.

All the conditions essential for the existence of life on earth, directly or indirectly, depend on light coming from the sun. In the structure of sunrays, on the other hand, there is a design dependent on very delicate balances.

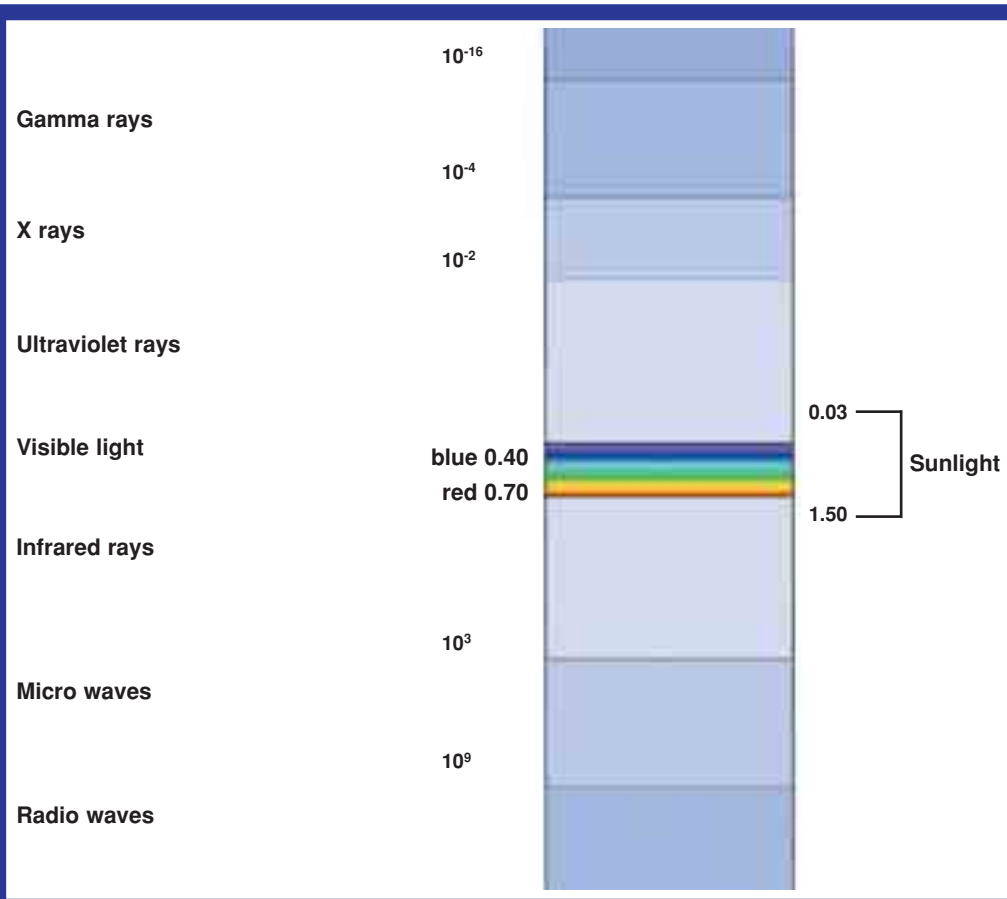
ted from the sun. In this case, the question of how these rays, the ultimate energy source for the earth, come into existence comes to mind. Surely, that these rays, which are the key to life on earth, serve such important purposes and, at the same time, have all the necessary characteristics for this, cannot be attributed to coincidence. The reason for this will be better understood when the structure of light is examined.

The energy emitted by the stars moves in waves through the void of space. Similarly, both light and heat are emitted by the sun, which is a star, as energy in the form of waves. The movement of this energy the stars emit can be compared to that of the waves caused by a stone thrown into a lake. Just as the waves in the lake have different lengths, so do heat and light have different wavelengths as they diffuse.

At this point, it would be useful to give some information about the different wavelengths of light in the universe. The stars and other light sources in the universe do not emit the same kinds of light. These differ-

ent rays are classified according to their wavelengths and frequencies. These different wavelengths are spread over vast areas. For example, the shortest wavelength is 10^{25} times smaller than the longest wavelength (10^{25} is a very big number consisting of number 1 followed by 25 zeros)[4]

In the whole spectrum, the total rays emitted by the sun are squeezed into a very short interval. 70% of the different wavelengths the sun emits lie within a narrow interval ranging from 0.3 micron to 1.50 micron. (A micron is 10^{-6} m) Examining why sunrays are restricted to such a narrow interval, we come to an interesting conclusion: the rays that make life, and colour, possible on earth are only those present in this interval.



The arrangement within light astonishes scientists. Although too many rays come from space, sunrays, as seen in the schema above, are restricted to a very narrow interval. This is precisely the interval that is needed for life.

British physicist Ian Campbell, who defines this superior design as "incredibly astonishing" in his book *"The Energy and the Atmosphere"*, draws attention to this point:

> That the radiation from the sun (and from many sequence stars) should be concentrated into a minuscule band of the electromagnetic spectrum, which provides precisely the radiation required to maintain life on earth, is very coincidence. [5]

The greater part of this small range of radiation emitted by the sun from the electromagnetic spectrum, a spectrum having a width where the longest wavelength is 10^{25} times large than the shortest, is named "visible light". The rays that lie below and above this interval, on the other hand, reach the earth as infrared and ultraviolet rays. Let us now briefly examine the properties of these two kinds of rays.

Infrared rays reach the earth in the form of heat waves. Ultraviolet rays that contain higher energy, on the other hand, may have a damaging effect on living beings. Infrared rays pass through the atmosphere, and provide heat, which makes the earth a place suitable for life. Ultraviolet rays, on the other hand, can reach the earth only at a certain rate. If this rate were a little higher than its current level, it would harm the tissues of living beings and cause mass deaths, while if it were a little lower, then the energy needed for living beings would not be provided.

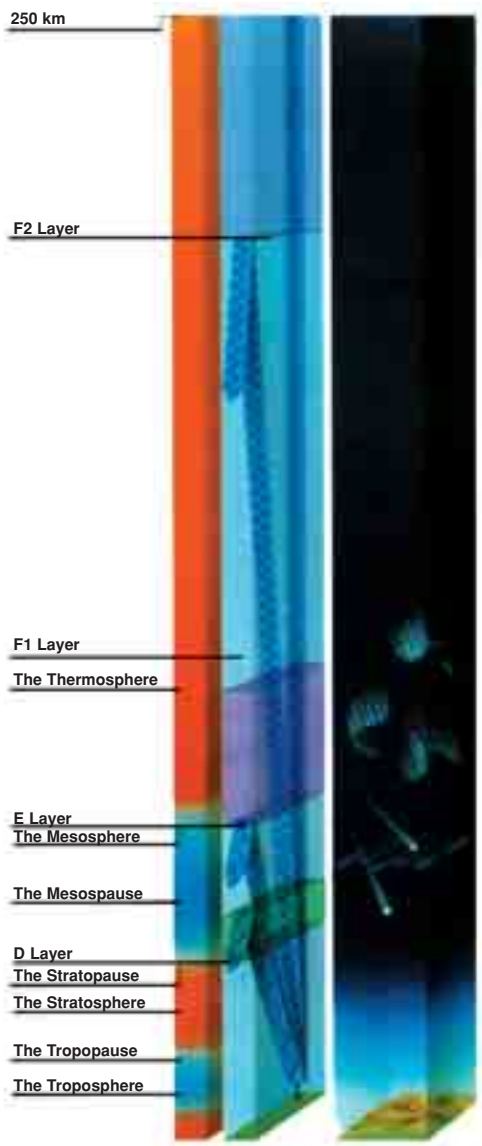
These points are details crucial for life. As understood from the functions and uses of the rays emitted by the sun, there is order and control in every existing system in the world. Surely, it is impossible for such a system, the delicate balances of which we briefly dwelled upon, to have been formed by coincidence.

Examining another element of this flawless system, we once again see the impossibility of its coming into existence as a consequence of coincidence.

2. The shield protecting the earth: The Atmosphere

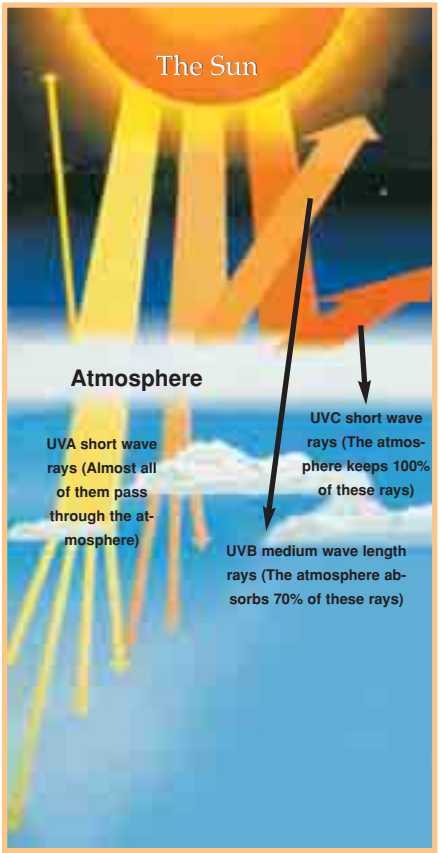
In previous pages, we mentioned that some of the sunrays are harmful for life on earth. In order to avert this harmful effect, a solution is needed.

Let us put our heads together and find a solution to this problem by developing an efficient system to filter sunrays. We should also take cognisance of the fact that this system should be a multifunctional one, which will protect the world from the harmful effects of the sun, ensuring that this is maintained permanently, not requiring maintenance, and also capable of preventing some other possible threats to the earth. Certainly, in such a situation, several alternative solutions will surface. Yet, nothing put forward will be as efficient and versatile as the present filter that now covers the earth: the atmosphere. The atmosphere of the earth is one hundred percent successful at filtering harmful rays and Allah specially designed it in order to protect the world.



The layers of the atmosphere

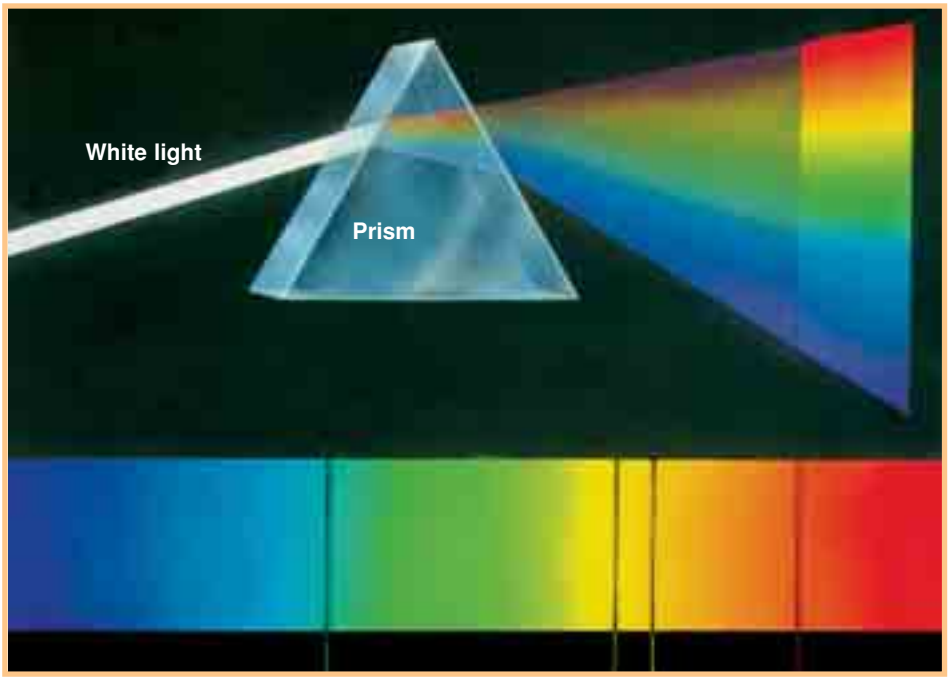
By means of specific layers of the atmosphere, sunrays reach earth only in required amounts because the atmosphere processes the sunrays specifically according to their wavelengths. Our atmosphere is like a giant refining plant designed for filtering these rays. This gigantic refining system that has no equal on the earth has been carrying out these processes because of its special design. Allah draws attention to the creation of the skies as follows, (the Arabic word for 'heaven – sama' is also the word for 'sky'):



The atmosphere lets only necessary rays reach the earth while reflecting other harmful rays back into space.

The creation of the heavens and earth is far greater than the creation of mankind. But most of mankind do not know it. (Surah Ghafir: 57)

The rays coming from the sun are quite specific. It is necessary for them to possess properties enabling them to pass through the atmosphere and reach the earth. Similarly, the atmosphere, too, has to have a special structure to allow these rays to pass through. Otherwise, neither the existence of the atmosphere nor the structural appropriateness of the rays will be of any use. Because of the ray-permeable nature of the atmosphere, the rays coming from the sun easily reach the earth. There is another important point that needs mention. Whilst letting only visible light and the near infrared rays required for life pass through, the atmosphere prevents all other destructive rays from reaching earth. The atmosphere of the earth serves as a very important "filter" for the destructive rays coming from the sun or from non-sun sources, that is, from other zones in space.[6]



The material densities, that is, the densities of atoms in space and of the atmosphere are different from each other. For this reason, when light enters the atmosphere, it spreads out more and becomes diffuse because it hits more atoms. The eyes of living beings can see a colourful world only by perceiving these rays that come after being diffused, or in other words, weakened by the atmosphere. In outer space environment where there is no atmosphere, light is so strong as would harm the eyes. Apart from this, near infrared rays also spread out in the atmosphere and warm the earth.

Michael Denton, a renowned astronomer, states this as follows:

> Even the atmospheric gases themselves absorb electromagnetic radiation very strongly in those regions of the spectrum immediately on either side of the visible and near infrared. Note that the only region of the spectrum allowed to pass through the atmosphere over the entire range of electromagnetic radiation from radio to gamma rays is the exceedingly narrow band including the visible and near infrared. Virtually no gamma, X, ultraviolet, far-infrared, and microwave radiation reaches the surface of the earth.[7]

It is apparent that there is a highly developed design in the structure of the atmosphere. Out of a spectrum whose width is hinted at by this figure of 10^{25}, the sun emits only those rays that are useful to us and neces-

sary for a colourful world, and the atmosphere mainly allows harmless and indeed useful rays to reach the earth. In addition, due to the properties of the gases present in the atmosphere, the eyes of living beings, which are directly exposed to sunlight, are protected against any harmful effects. All these are evidence that Allah has created everything in due proportion.

> **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)**

3. Light Striking Matter

Light coming from the sun reaches the earth at a speed of 300,000 km per second. Owing to the speed of light, we always see a world full of colour. How, then, is this uninterrupted image made?

Passing through the atmosphere at enormous speed, light reaches the earth and strikes objects. When light strikes an object at this speed, it interacts with the atoms of the object and reflects at different wavelengths

The rays coming from the sun consist of particles called "photons", which move in waves. When photons hit the electrons of the atoms making up physical objects on earth, the electrons emit light rays of particular wavelengths, which "correspond to certain colours". When sunlight falls on a leaf, for example, this means that the photons of light have hit the atoms of the pigment molecules existing on the surface of the leaf. On impact, the electrons of the leaf's atoms are activated. As a reaction, the atoms of the leaf emit photons. Thus, the photons representing "the colour" of the leaf begin to travel towards our eyes.

corresponding to different colours. In this way, the book you are now holding, its lines, pictures, the view you see when you look outside, trees, buildings, cars, the sky, birds, cats, in short everything your eyes see, reflect their colours.

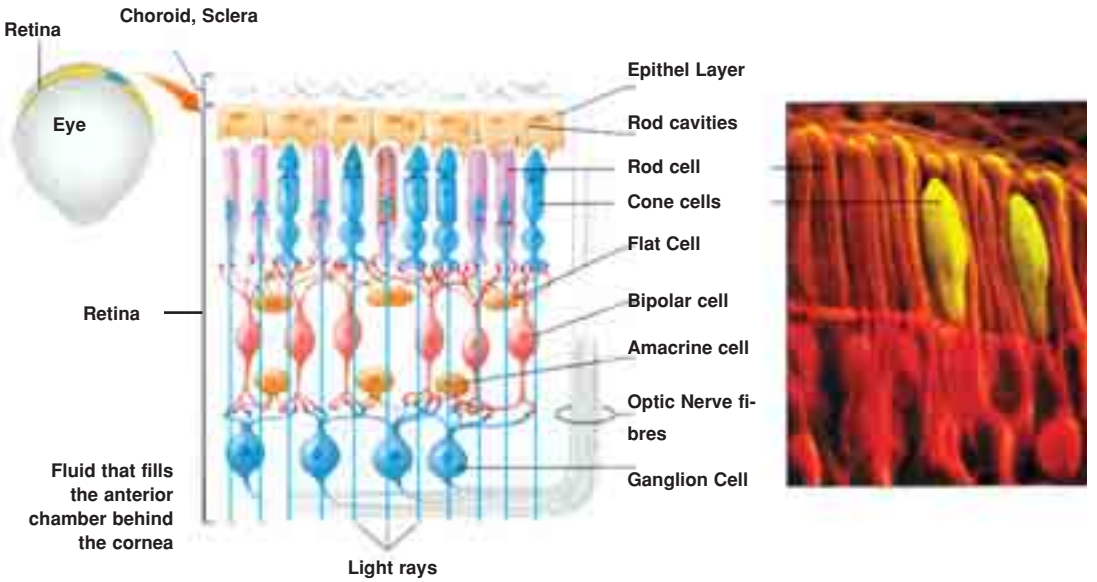
The molecules enabling these colours to be reflected are pigment molecules. That is, the colour reflected by an object depends on the pigment molecules present in that object. Every pigment molecule has different atomic structures. The atomic numbers as well as the types and the sequences of atoms in these molecules are different. Light hitting such diverse pigments is reflected in different shades of colour. However, this is not enough for the formation of colour. For reflected light possessing a certain colour quality to be perceived and seen, it has to reach a visual apparatus capable of perceiving it.

4. Light Coming to the Eye

For rays reflected by objects to be perceived as colour, it is necessary for them to reach the eye. The existence of the eye alone is not sufficient. After reaching the eye, the rays ought to be converted into nerve signals that reach a brain working in harmony with the eyes.

Let us think about our own eyes and brains as the closest example. The human eye is a very complex structure that consists of many different organelles and parts. As a result of the simultaneous and harmonious operation of all these parts, we see and perceive colours. The eye, with its tissues and organelles such as lachrymal glands, cornea, conjunctiva, iris and pupil, lens, retina, choroid, eye muscles and lids, is a matchless system. In addition, with its extraordinary nerve web that establishes its connection to the brain, and extremely complex vision area, the eye, as a whole, has a very special structure, the existence of which cannot be attributed to coincidence.

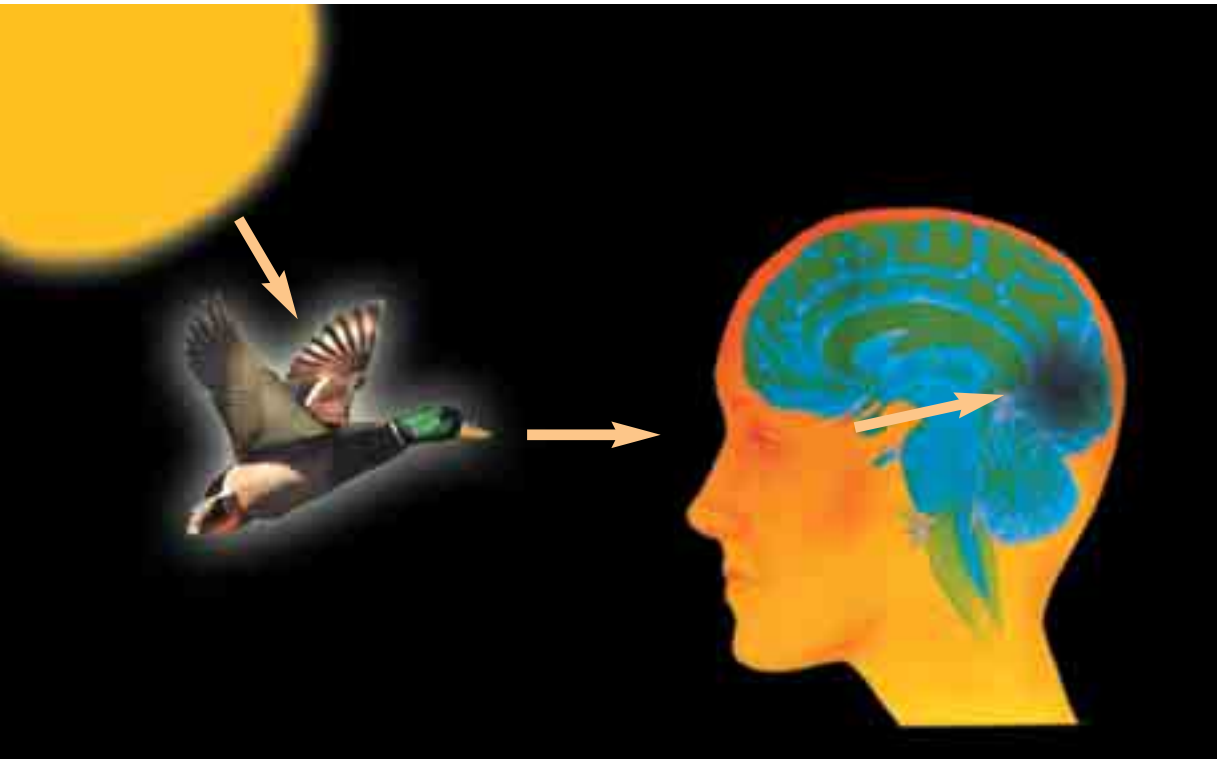
After a short introduction to the eye, let us also look at how the event of seeing takes place. Light rays coming to the eye first pass through the cornea, then the pupil and lens, and finally reach the retina.



On the left, we see the connections between the nerve cells in the retina. The complex interconnections between the different layers of cells help the nerve cells to move together and interact with each other. On the right is a close-up of cone cells. While short cone cells help us to see the world as coloured, long rod cells help us to see shapes and movements.

The perception of colour begins at the cone cells in the retina. There are three main cone cell groups that strongly react to certain colours of light. These are classified as blue, green and red cone cells. The colours red, blue and green, to which cone cells react, are the three primary colours existing in nature. With the stimulation of cone cells, which are sensitive to these three colours, at different degrees, millions of different colours appear.

The cone cells convert this information pertaining to colour into nerve impulses through the pigments they contain.[8] Next, nerve cells connected to these cone cells transmit these nerve impulses to a specific area in the brain. The place where the multi-coloured world that we view throughout our lives is formed is this area in the brain measuring a few centimetre squares.



Everything we see in the outside world is perceived in the brain. Colourful flowers, birds, the sky, mountains, the people around us, in short, every single detail in the world is projected to us inside our brain. In fact, the brain is an entirely dark place. He Who enables us, in this dark place, to see, to feel, to touch, to hear, that is, to perceive all the details of the outside world, in short, makes us watch everything, is Allah, Who has created the whole universe. Allah has power over all things.

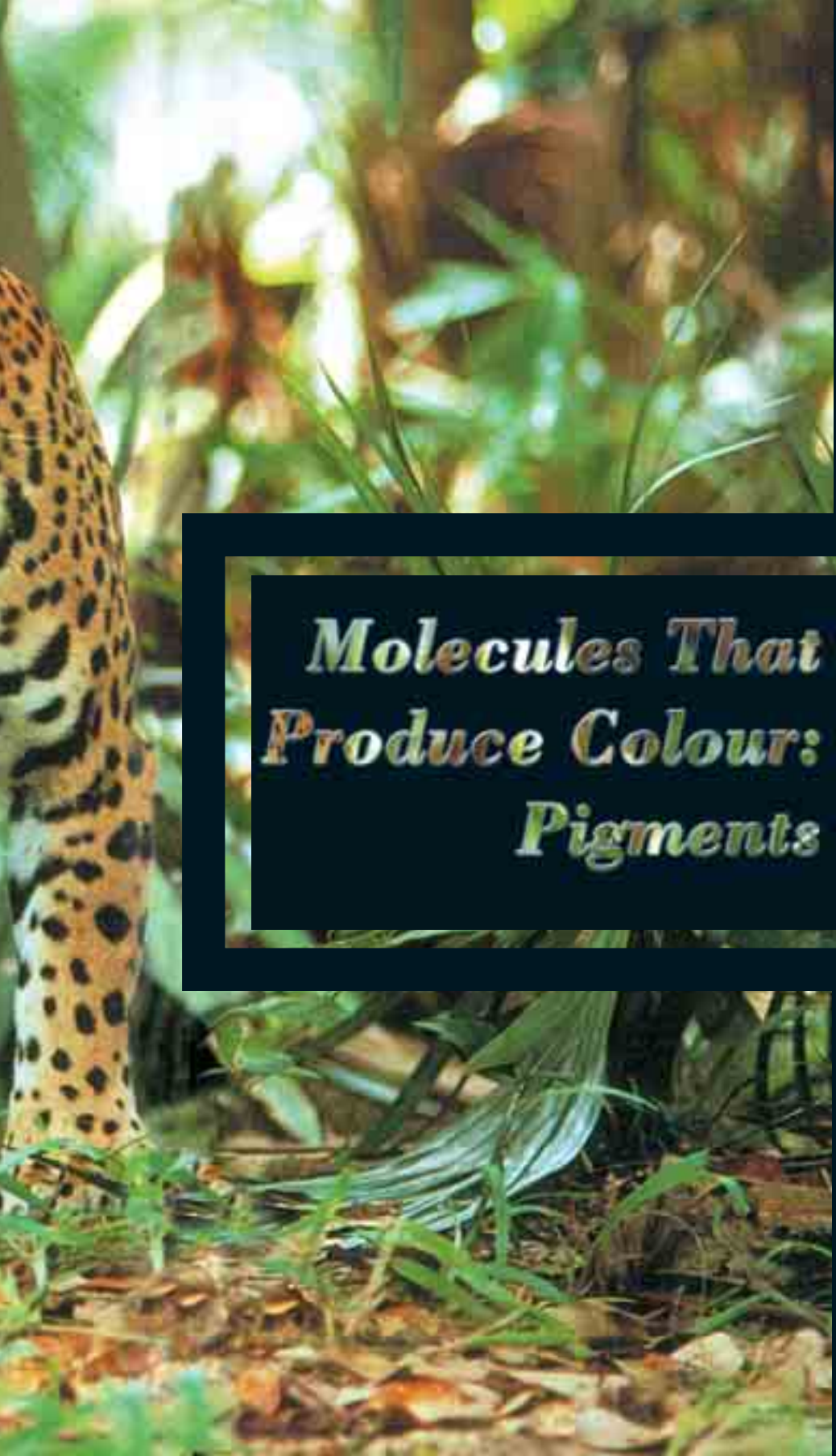
5. A Colourful World in Our Dark Brain

The final stage in the formation of colour takes place in the brain. As mentioned in the previous chapter, nerve cells in the eye convey the images converted into nerve impulses to the brain and everything we see in the outer world is perceived in the vision centre of the brain. At this point, we are confronted with an amazing fact: the brain is a piece of meat that is completely dark inside. Nerve impulses coming from images created on the retina by objects are deciphered in the brain, which is completely dark inside. Images of the objects, with their colours and all other properties,

are formed as perceptions in this visual centre. How does this process of perception take place in such a piece of soft meat?

A lot of question marks remain as to how colours are perceived. Chromatists are still unable to answer those questions such as how nerve impulses are transmitted to the brain via optic nerves and what kind of physiological effects this creates in the brain.[9] All they know is that the perception of colours as realities takes place within us, that is, in the centre of vision in our brain.[10] (For detailed information, see the chapter *The Secret Beyond Matter*)

In fact, most of the processes carried out by the brain have not yet been elucidated. The explanations of the subject are largely based on theories. However, the brain has been fulfilling all its functions perfectly since the moment man came into existence, just as it does today. People's experiencing a three dimensional world, along with all its colours, designs, sounds, smells and tastes, in a piece of meat weighing nearly one kilogram is made possible only by the perfect creation of Allah. Everyone finds this matchless miracle of creation ready at birth. Man has no control whatsoever, neither in the formation of its functions, nor in their continuity, nor at any other stage.



Molecules That Produce Colour: Pigments

In previous chapters, we mentioned that because of the different atomic properties of the pigmentary molecules, objects reflect light rays differently; hence, different shades of colour are produced. Have another look around you. The different colours in your range of vision indicate the existence of a similar number of pigments, because the colour of everything we see in our surroundings depends on the pigments present in the composition of that matter. The green colour of plants, the colour of skin, the colours of animals, in short all colours stem from the structural characteristics of the pigments contained in those objects or living things.

What is Pigment?

Pigments, existing both in our eyes and in the outer surface of objects, are special molecules that bring about colour. A certain energy is needed for pigment molecules to be activated. Certainly, just as in all other stages in the formation of colour, there is again perfect harmony between pigments and light. "The invisible light" reaching the earth has been specially designed for the "pigment" molecules, which are known as colour molecules, in living things.

Moreover, human eyes also have a structure compatible to this purpose. The reason why the cone cells that lie in the retina of our eye perceive three main colours – red, green, and blue – is because of the special pigment molecules they contain. The most crucial task these pigments perform so that we see a coloured world is convert the energy of "colour" in light into nerve impulses. This means that everything we know as colour is an end-result of these pigments transmitting the wavelength of light reaching to them to the brain as nerve impulses.[11]

The energy levels of visible light correspond to some of the energy levels needed for activating pigment molecules that are found in the skins of living beings, or in the scales, feathers, or furs covering their skins, and thus their colours are formed.

As seen, pigments, which are present both in the vision centres and

The reason for colour diversity in the leaves of flowers is the reaction to light of pigment molecules present in their structure.

in the bodies of living beings, are in perfect harmony with other bodily systems. Absence of a particular kind of pigment molecule or its presence in an amount less than required in the vision centre of a living being causes it to be unable to distinguish colours in its environment.

The question is: how do these special molecules develop in the skins of living beings? We can give an answer to this question by asking some further questions. Have living beings come to possess these colours by acknowledging the properties of a special light spectrum reaching the earth and choosing special pigment molecules accordingly? Certainly the possibility of the occurrence of such a coincidence is zero. These specific molecules have been placed in the skin of living beings by conscious design. It is obvious that neither could living beings carry out such a process, nor could random coincidence bring about such a formation. The harmony in question is one, which could only come about because of One Who Wills creating it, One Who keeps everything under control. Allah has created each living being with very sophisticated characteristics peculiar to it. Everything, animate or inanimate, has pigments suitable to it. Pigments absorb light selectively according to their molecular structure. Every pigment does not react to light in the same way. For this reason, it cannot set off the same chemical reaction and form the same colour.

We can give chlorophyll, the pigment molecule that causes plants to look green, as an example. These pigments absorb certain wavelengths

coming from the sun and reflect light having the wavelength that corresponds to green colour. Chlorophylls, the pigment molecules in plants, reflect the photons that look green due to their wavelengths. At the same time, the energy they receive from sunlight enables the plants to produce carbohydrates, one of the prime food sources of all living beings.[12] Different pigment molecules reflect particular colours at certain wavelengths according to their own molecular properties and hence cause different chemical reactions.

There are many kinds of pigments in nature. A few examples are sufficient to show that pigment molecules have been specially designed for life.

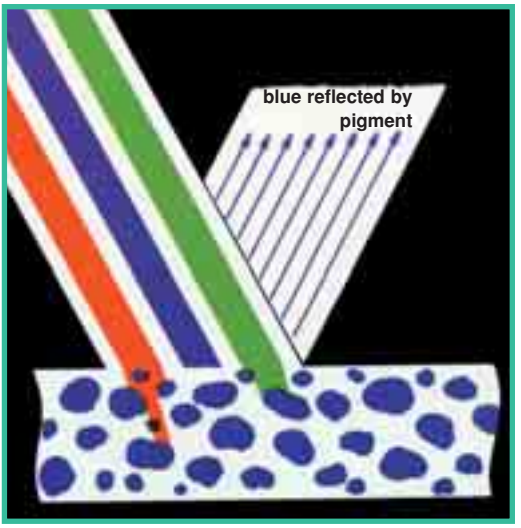
Examples of Pigment Types

Protective Colour Source: Melanin

The eyes of living beings are quite sensitive to light and are easily affected adversely. Still, we can safely look towards the sun and see our surroundings, thanks to the support systems Allah specially created. One of these support systems is a group of pigment molecules present in the eye.

As is well known, the colours of living beings' eyes vary. What give an

The pigment chlorophyll existing in plants is dominant over other pigments. Therefore, plants look green.



The light rays coming from the sun activate the pigments in the objects and therefore colours form. We may compare pigment molecules to sieves whose selectivity depends on the size of their pores. Just as in a sieve, the wavelengths which pigments select according to their structures – that means colours – vary.

Blood contains colourful pigments carrying oxygen in the body. These colours vary among living beings. For instance, while the colour of the blood of cuttlefish is light blue or colourless, the blood pigments of other animals and human beings are red. The redness of the hen's crest and the redness of most shrimps are caused by blood pigments.

eye its colours are, again, pigments. Melanin is one of these pigmentary substances present in the eye that gives the eye its colour. The same pigment also gives your skin and hair their colours. However, melanin provides more than colour. Researchers believe that melanin, which exists in the eye, offers both protection against the deleterious effects of sunrays, and vision enhancement. The substance melanin, nature's solution to the problem of hazardous light rays, absorbs higher energy light more strongly than lower energy light. So, it absorbs ultraviolet more strongly than blue, and blue more strongly than green.[13] In this way, melanin provides protection to the lens of the eye against ultraviolet. It provides near optimum protection to the retina by filtering different colours in proportion to their ability to damage the tissue of the retina – thereby reducing the risks

The big red eyes of the frog send warning signals to its predators. The reptile's eyes seen above have a colour that does not offset the camouflaging of the reptile. The eye of the owl on the right has a colour exclusive to its kind.

of macular degeneration. People with more eye-melanin have less occurrence of macular degeneration; people with less eye-melanin have greater occurrence of macular degeneration. About 15% of our original supply of melanin is lost from the eye by the age of forty and about 25% is lost by the age of fifty. The role melanin plays in eye protection is critical: ophthalmologists report that melanin in the eye reduces the risk of age-related macular degeneration.[14]

As understood, each one of the functions of the substance melanin demonstrates to us the special design of this substance.

The answer to the question of how such a perfect substance has come about is that it is impossible for such a multifunctional substance with such a perfect structure to have come into being by coincidence. Allah has created the substance melanin, like all other things in the universe, in a special way as to serve a beneficial purpose for people.

The Source of Lively Colours

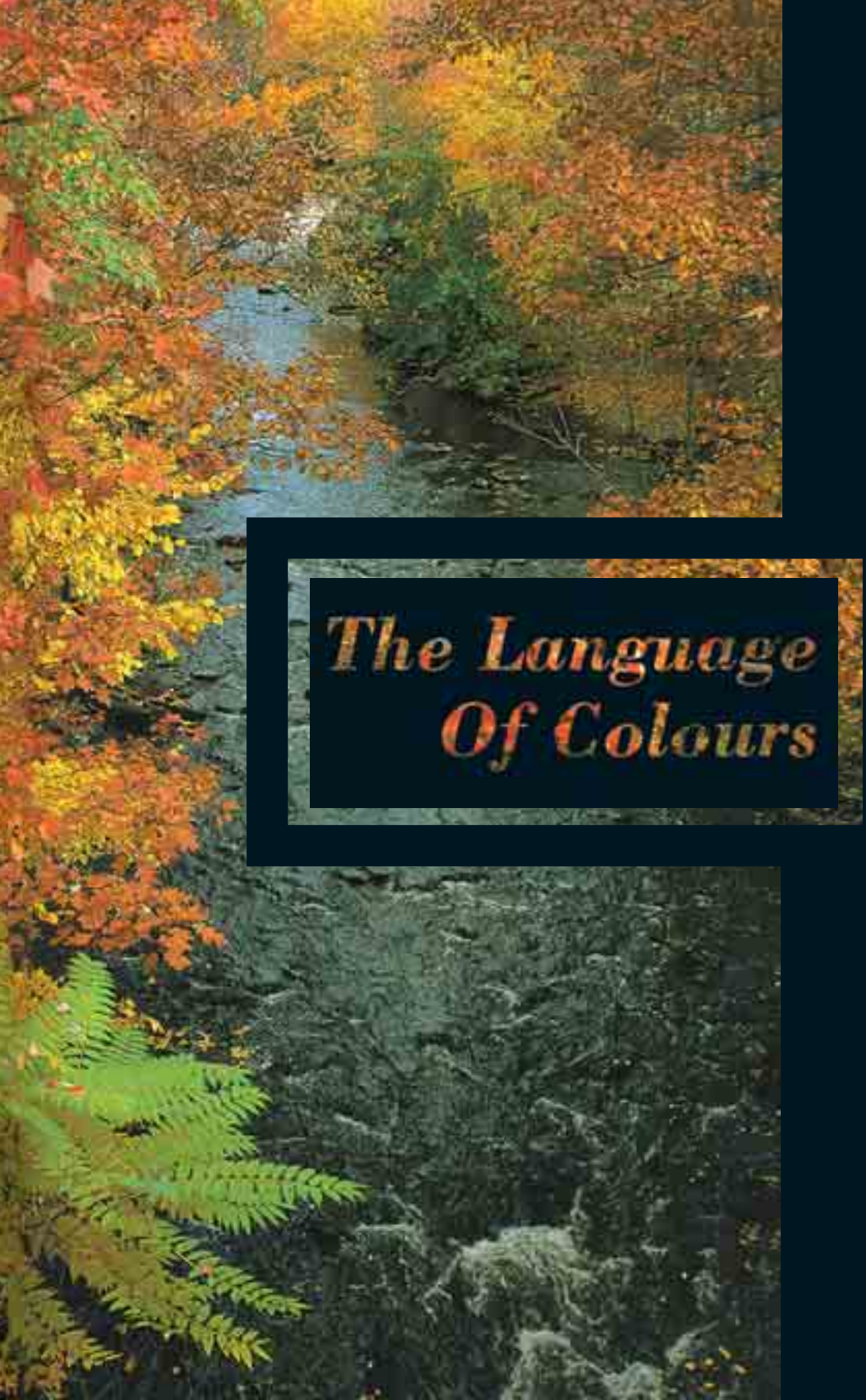
Carotenoids (and lipochromes) are pigmentary molecules, which are synthesised by plants and which reflect the colours yellow, red and orange. Animals can obtain these pigments only by feeding on plants.

Poisonous sponges, crinoidea, toxic sea-cucumbers and some molluscs are either partly or completely yellow, red or orange in colour as a result of carotenoids, which are also present in the yellow parts of butterflies' wings and in the beaks of birds. In certain insects, these are emitted by special glands, which are yellow or red in colour. Curiously, these compounds are usually pale green or even colourless and only take on a bright yellow colour in the blood of poisonous insects. The carotenoids are not only useful as warning coloration; in some insects they are themselves transformed into poisonous compounds, in which case they serve a twofold purpose of being both a weapon and a signal.[15] By means of this very special system that Allah has created, many living beings continue to thrive.

The sources of the lively colours present in the beaks of toucans are also pigmentary molecules.

Thus far, we have briefly examined only a few types of pigment existing in nature. The conclusion we have reached in light of this review is the presence of the perfect design that reveals itself in pigments, in the atoms forming these pigments and in all the resulting colours. Allah, the ultimate Owner of this exceptional design, Lord of the worlds, introduces Himself to us by the unique artistry in the colours He creates in nature.

> **Have they not travelled about the earth and do they not have hearts to understand with or ears to hear with? It is not their eyes which are blind but the hearts in their breasts which are blind. (Surat al-Hajj: 46)**


The Language
Of Colours

Just as colours are important for people in making sense of their surroundings, so are they indispensable for other living beings to survive.

Living beings have a "colour language" that works according to the light and the systems of perception they possess. Different colours bear different meanings for every living being. In order to survive, every living being has to know the language of colours used in its habitat, because vital functions can only be controlled by acknowledgement of this language.

So, how do living beings use this colour language?

First, the majority of living beings need the help of colours in order to find food. Second, the colours that exist on formations such as skin, scales and fur play an important role in the continuity of life due to their characteristics of absorbing or diffusing heat. In addition, living things use their colourings to protect themselves from their enemies. Owing to colours that harmonise with their habitat, they can camouflage themselves and hide from their enemies. Alternatively, their colourings and patterning may pose a discouraging image for their enemies. Colours also help animals to recognise their mates and chicks. A mother bird, for example, understands whether her chicks need food or not from the colours of their gapes. Similarly, the chick recognises its mother in this way and understands that the food has arrived.[16] As seen in these examples in nature, living beings need to know the meaning of colours in order to survive. In order to attain this knowledge correctly they need to possess proper systems of perception.

Mother birds feed their chicks according to the colours of their gapes.

If they did not have these systems, they would not be able to perceive their surroundings properly or carry out their vital activities. They would not be able to recognise their foods or discriminate their enemies. Therefore, in this latter case they would stand out

from the outside world and be an easy prey doomed to death.

Surely, no one can claim that such sophisticated systems might have come into existence by coincidence. Every system, every harmony, every design, every program, every plan, every balance must be created by a designer. There is certainly a higher will and power that has perfectly placed this harmony in living beings and the habitats in which they live. The owner of this power encompasses both the surroundings and the living being itself and the systems it uses with a higher knowledge. The owner of this power is Allah, Lord of the worlds.

When we examine living beings, we see how skilfully they employ the language of colours. Here are some examples of the language of colours, which has such an important place in the life of living beings:

Allah creates every colour on earth. The sky, mountains, crops, butterflies, red apples, oranges, parrots, pheasants, violet grapes, trees, in short, everything you see in your surroundings, possess these colours because Allah wills so. Allah states this fact in a verse as follows:

> **Do you not see that Allah sends down water from the sky and by it We bring forth fruits of varying colours? And in the mountains there are streaks of white and red, of varying shades, and rocks of deep jet black. And mankind and beasts and livestock and likewise of varying colours. Only those of His slaves with knowledge have fear of Allah. Allah is Almighty, Ever-Forgiving. (Surah Fatir: 27-28)**

Camouflage

Camouflage is one of the most effective defence tactics that animals use. Self-camouflaging animals are under some kind of protection because of their body structures, which are created in great harmony with their habitats. The bodies of these animals are so harmonious with their environments that when you look at their pictures, it is almost impossible to tell if they are plants or animals, or to distinguish an animal and a plant present in the same environment from each other.

The living creatures that adapt their colourings according to the environments in which they live have always attracted the attention of scientists. Research focuses on finding an answer to the question of how a living creature can look exactly the same as a creature that is of a completely different structure.

The seven heavens and the earth and everyone in them glorify Him. There is nothing which does not glorify Him with praise but you do not understand their glorification. He is All-Forbearing, Ever-Forgiving. (Surat al-Isra': 44)

Have you ever thought, for instance, how a frog, which, while walking in the garden, you took for a leaf, and then at the last moment skipped a step and avoided stepping on it, has it come to possess these patterns and colour? Camouflage is a very important defence mechanism for a frog. The frog that is unnoticed in its environment easily loses its enemies.

While a pink spider on a pink flower can successfully take on the flower's different shades of pinks of, another member of the same spider species can adapt to the colour of another flower, for instance, a yellow one, when it climbs on it.

While someone is looking at a branch, thinking there is nothing on it, a butterfly may fly away from it all of a sudden. This butterfly, which looked exactly like a leaf down to the dry, autumn-withered parts a second ago, is a perfect example of the miracle of camouflage.

As will be seen in the following pages, the similarity of living crea-

tures to the objects on which they rest prevents their enemies from noticing them. It is obvious that these camouflaging creatures have not made themselves, on their own initiative, look like leaves, branches or flowers. What's more, they are not even aware that they are protected because of these similarities. Nevertheless, they employ camouflage very skilfully in all our examples without exception. An insect having the same colour as a flower, a snake standing still as a tree's branch, a frog adapting to the colour of wet ground, in short, all self-camouflaging creatures are evidence proving that camouflage is a specially created defence tactic.

No living creature can perform such a task on its own or by coincidence. Certainly, He Who bestows upon living creatures the ability to camouflage themselves, and places the chemical processes in them by which they can carry out this colour change, is Allah, the All-Knowing, the All-Wise.

In the picture is a grasshopper imitating the bark of a tree. The camouflage employed by the grasshopper is so perfect that even the designs of the lichens on the tree are present on it. This is a perfect creation of Allah.

The Misumena varia species of crab spiders seen on the left can assume different colours ranging from yellow to white, depending on the flower on which they land.[17] The spider species seen above stops moving only when the colour and configuration of the plant are those best suited to hide it.[18]

Some insect species protect themselves from their enemies by means of group camouflage. For instance, Phiatids, a species of tropical Hemiptera found in Madagascar, has full and brilliantly coloured wings. When they are resting on a tree trunk, as in this photograph, they resemble an inflorescence.[19] This misleads the hunters that look for insects.

In the photograph on the left are two myriapods that have developed almost identical coloration to the plants on which they live. In this way, they are protected from their enemies.[20]

In the dry grass of the savannah, a hunting lioness is almost invisible, as the colours of the lioness tend to blend with the environment.
The cheetah is no easier to distinguish in the tall grass; this is because hundreds of small spots break up the lines of the animal's body. The bright sunlight emphasises the black spots of the cheetah, increasing the mottled or "broken" effect of the body's outline.[21]

The polar bear's dense, white fur, combined with layers of fat beneath the skin, protects him from the bitter cold. But the white fur serves another purpose – it serves as camouflage when the bear is hunting. In the same manner, white fur provides a good protection for rabbits that live in snow.

Camouflage does not only take place on the surface of the skin. The muscles of some species of frogs that live in the tropical forests of South America are coloured. The blood contains oxygen-conveying cells. Therefore, changes brought about by the need for camouflage not only take place on the surface of the skin but also within the body.[22]

Dead twigs and leaves become dark when wet. In the same manner, frogs and toads also change colour in wet weather, becoming darker. This change makes sure that they remain well camouflaged among the wet twigs and leaves.[23] It is not possible for this amazing harmony to be coincidental.

In the picture on the left is a land frog that changes its colour according to weather conditions.

A small, leaf-shaped frog blends in with the substratum of a forest in Malaysia. The frog is best camouflaged when viewed from above – that is, from the angle at which the predator is most likely to view it.[24] In the picture to the right is a frog of another species, which appears like part of the tree. It is quite difficult to distinguish both living things from the environment.

In the daytime, or during the hours when predators are most active, the majority of mimetic animals remain immobile. Even the slightest movement could betray their whereabouts. The sensory apparatus of a predator is extremely sensitive to movement. For instance, this Brazilian grasshopper is indistinguishable from the blades of grass upon which it has landed.[25]

Pictured to right is a stick insect. Stick insects camouflage themselves in order to escape their predators. Mimetic ability, however, is not confined to adult insects in myriapods; the eggs are also camouflaged. On the ground, they look very much like vegetable seeds.[26] It is impossible for a living creature to create colours in its body so as to be the same as its environment or to make its shape resemble that of another species. Allah, Who is their Creator, has given these features to all camouflaging creatures.

In the photographs grasshoppers are seen imitating leaves. A central vein and two symmetrical halves on two sides of this vein, which are present in the general structure of leaves, are also fully present in these grasshoppers as seen in the photographs.

The patterns on the grasshopper below are very similar to traces of a kind of parasitic fungus on leaves. In addition, since its long legs could betray a grasshopper's presence, the legs of some grasshoppers, as is the case with the grasshopper seen here, are almost transparent.[27] Surely, the animals themselves do not consciously choose to do these imitations that are so perfect as not to leave out the dry parts and folds of a leaf. Allah, Who creates everything perfectly, created the grasshoppers.

Mantises are among the most common predators in the forests and in the savannahs of the hottest regions of the globe. The entire body structure of a mantis is designed for predation. The nymph mantis, seen below, of the tropical forests of South America is almost identical to the dry leaves of the fern. If it were to rest on a green leaf, it would be easy to spot. Most species take great care to find suitable environments in which to lie in wait for their prey.[28] It is certainly not possible for this creature to have devised such a system on its own. He Who inspires all the creatures with how they are supposed to act is Allah, the Lord of the entire universe.

In the top left photograph is a mantis, which is almost invisible among the pink flowers. As opposed to the majority of other mantises, whose bodies have a long and narrow first segment or prothorax, in this Costa Rican species (the large photograph) this segment has a different design that makes it similar to the leaves on which the mantis lives.

Camouflage techniques of reptiles

What does a reptile do to protect itself against its predators in the wild? One of the easiest ways for these slow-moving creatures is definitely to conceal themselves. The best method of hiding is adaptation of the creature's body to its habitat. Colours and patterns usually serve as a lifesaver for many animals. For example, in the forest it is almost impossible to distinguish a Rhino Viper, a kind of tropical snake living in the rainforests of Africa, due to its skin being covered with blue, red, yellow, black and white geometric patterns. Interestingly, the colours of the snake match the surroundings in which it lives. This one-to-one relationship evokes some questions in the mind. How did these colours, which harmonise with the environment so well, emerge? Is it possible for this to have happened by chance, or to have been produced by the reptile itself?

It is almost impossible to distinguish the snake species that inhabits the tropical rainforests of Costa Rica from the tree on which it rests.

Certainly, it is not possible at all. It is impossible for a reptile first to analyse its environment, then to decide what kind of changes it needs to make in itself, and finally to determine a colour and pattern. Furthermore, it is totally illogical and unreasonable to claim that it might have set up a system in its body to carry out the chemical reactions that are necessary for such a change.

Even man, the only living being endowed with reason on earth, cannot change the colour of any part of his body. He cannot establish a system in his body to bring about such a change. In this case, there is only one explanation for the perfect resemblance of the colour of the reptile to the colour of its surroundings to such an extent that even the shades do not differ. An infinitely superior possessor of wisdom has designed this living creature. This design belongs to Allah, the Almighty. Allah is He Who knows best the needs of every living being.

The whip snake of South East Asia lives in trees and is covered with green scales. These scales, which cover the upper part of the snake's body, are camouflaged to look like the patina of lichens and algae that covers the trees.

The Australian leaf gecko usually lives near trees, and closely resembles bark. It rarely displays its pale abdomen. Even the lizard's eyes are well camouflaged. (left) In the case of this leopard gecko from Pakistan, only the upper body imitates the substratum upon which it might be detected. The abdomen is almost entirely white, because the small reptile is always careful not to reveal that particular part of its body. (above)[29]

The Most Famous Camouflaging Reptile: the Chameleon

Have you ever seen a chameleon changing its colour according to its surroundings? This is indeed something worth seeing. The chameleon has such an exceptional ability to camouflage itself that its deftness astonishes everyone. Although many other reptile species have the ability to change their colours, none of them is capable of doing it as rapidly as chameleons.

The chameleon uses red and yellow colour carriers, blue and white reflector layers and most importantly "chromatophores", skin cells that respond to variations in heat, light and the animal's mood.[30] If you put a chameleon in a very yellow setting, for example, you would see that the colour of its body instantly turns yellow and adapts to its surroundings. What's more, chameleons adapt not only to a single colour, but also to multicoloured substrata. The secret of their achievement is the colour cells, lying under the skin of this master of camouflage, which magnify and swiftly change place to adapt to the environment. Could a chameleon make such a perfect adaptation on its own? How do these creatures indistinguishably blend in with the environments in which they live, while even the most skilful artist has to work for hours to obtain the equivalent of a single natural colour?

It would surely be unreasonable to claim that a chameleon could perform such an act of its own volition. It is certainly not possible for a reptile to determine the appearance of its body, nor to place a system in its body to change its appearance. It would be just as nonsensical to claim that this creature has control over all the cells and atoms in its body, that it is capable of making whatever change it wishes on them and produce the required pigments. It is totally inconsistent and meaningless to claim that such an exceptional ability has come into being by chance. No mechanism in nature has the power of producing such perfect skill and granting it to the being that needs it. Just as all other living beings on earth, Allah also created chameleons. Allah demonstrates to us the uniqueness of His artistry in creation with these examples. Allah is the Almighty, the All-Wise.

> **Everything in the heavens and the earth glorifies Allah. He is the Almighty, the All-Wise. The kingdom of the heavens and the earth belongs to Him. He gives life and causes to die. He has power over all things. (Surat al-Hadid: 1-2)**

Chameleons are one of the best self-camouflaging animals. As seen in the photographs above, the cool shadow of a fern leaves a temporary imprint on the warm skin of the chameleon.

The squid and octopus can also change their colours rapidly. Sometimes it appears as if waves of colour are pulsating across their bodies. Lots of different things set off these changes – anger, the sight of food, fear, and the colour of the background.[31] Allah has created these beings along with the features that will help them to protect themselves under the sea. Allah is the All-Encompassing, the All-Knowing.



These snow grouse are examples of how camouflage can change according to season.

Colour Change According to the Environment

Do living creatures only make use of colour to protect themselves against their enemies? Definitely not. Some animals protect themselves also from cold and heat by means of enzymes giving colour to the hairs covering their bodies. In animals that live in cold regions, the hairs covering the tip of the legs, ear and nose, which are the most sensitive parts of the body, are dark coloured. Dark coloured hairs provide more heat energy for animals thus helping them to warm easier, just like humans who try to benefit from the sun better by wearing dark coloured clothes in winter. Colour change is very common in land animals. For example, in summer, the fur of the northern fox turns white, because their body temperature is high. In winters, however, as it becomes colder, their body temperature drops and a more suitable environment for the enzymes to work easily is provided. For this reason, in winters, the fur of the northern fox darkens. Rabbits, foxes, weasels, and polecats living in northern latitudes turn brown in summer and white in winter.

While some birds become completely white in winter months, they take on a new appearance in spring matching the colour of the ground and vegetation.

Warning Colours

Living creatures make use of colour for varied purposes. Using it as a mean of warning is one of these purposes. In the following pages, we will give some examples of this.

One of the most threatening frogs is the "poison arrow" frog. This small amphibian of the Dendrobates species has a poison known as "batracotoxin" within its skin, which is believed by some to be the strongest known poison in the animal kingdom. The frog's name is derived from the use made of it by certain Amazonian tribes. It is so poisonous that the Indians used it on the tip of their arrows while hunting.[32] The colour of the animal helps other animals to recognise that it is poisonous.

The members of the Sinanceidea species are fish with relatively small and compact bodies. They have no scales, and instead their skins are covered with wart-like protuberances, which perfectly camouflage the fish as they rest upon the seabed waiting for prey. These protuberances break up the outline of the body, which thus come to resemble rocks. Often these fish camouflage themselves even more by burrowing into the sand.[33]

In South America, there are many poisonous and non-poisonous snakes that share the same vivid coloration. They are all covered with yellow, red, and black rings. They are all called coral snakes. Some of them, the true coral snakes, are deadly. Others, which are called "false corals", only imitate the poisonous ones. The actual arrangement of the coloured bands distinguishes one from the other. The false coral snakes benefit from this similarity and are protected from their enemies.[34]

A papilionida extends its red, antenna-like osmeterium (above), an organ that some butterfly caterpillars release when they hear the enemy approaching. The movement of this brightly coloured extension frightens small birds.[35]

The fulgoridae are a species of often brightly coloured large homoptera that live in the tropics. Their heads extend out in the form of a hollow "horn". The species of fulgoridae has a horn-like growth on its head that imitates the open mouth (complete with teeth) of a crocodile. (Big picture) It is believed that the function of these horn-like extensions may also relate to courtship. The camouflage of the fulgoridae in repose as seen in the smaller picture resembles the bark of a tree. When disturbed, it opens its wings to reveal two large "eyes". This surprises its enemies and gives the animal the chance to run away.[36]

Some animals use hairs of different colours in certain parts of their body as alarm signs. For instance, when pronghorn antelopes sense danger, they broadcast warnings to each other with their buttocks. Each haunch carries a patch of white hair underlain by a disc of muscle. In case of danger, it contracts the muscle so causing the long hairs to spread out into a huge rosette, which reflects light with particular efficiency. When the muscle relaxes, the disc contracts immediately. So bright white flashes are produced that are visible to other pronghorns even kilometres away.[37]

A male frigate-bird in the Galapagos Islands inflates the scarlet pouch beneath its bill to attract a female. The males often gather in groups upon the mangrove, where they will later build their nests, and engage in this behaviour so that the females flying overhead can choose their partners. The scarlet colour of the pouch contrasts sharply with the black feathers on the upper part of the bird's body, which have a metallic sheen.[38]

Not all animals use their colourings for purposes of camouflage. Pheasant and peacock males use their coloured feathers to attract females of the species. When a male peacock spreads its tail feathers, a glorious scene is revealed.

By means of their colourings, living beings attract their mates for purposes of reproduction, or to warn or frighten their enemies or rivals. For instance, flowers, which need pollination for reproduction, are adorned with bright colours and complex patterns in order to attract insects that carry pollens.

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)

Colours in Birds

One of the most important features of the multicoloured feathers of birds is that they are lifeless structures. The reason why a feather maintains its colour exactly, even after it is shed, is that a fully developed feather is completely lifeless.

Rich colour diversity in birds is basically due to the presence of pigments in the feathers, which were stored during the initial development phases of the feather, or the light shifts which occur depending on the structural characteristics of the feathers.

Since these formations, which are made up of the substance keratin, are soon worn down by environmental conditions, they are regularly renewed. Yet, each time, the bird regains its colourful feathers. This is because the feathers of birds continue to grow until they fully reach the necessary length, and the characteristic colour and pattern of that specific kind.

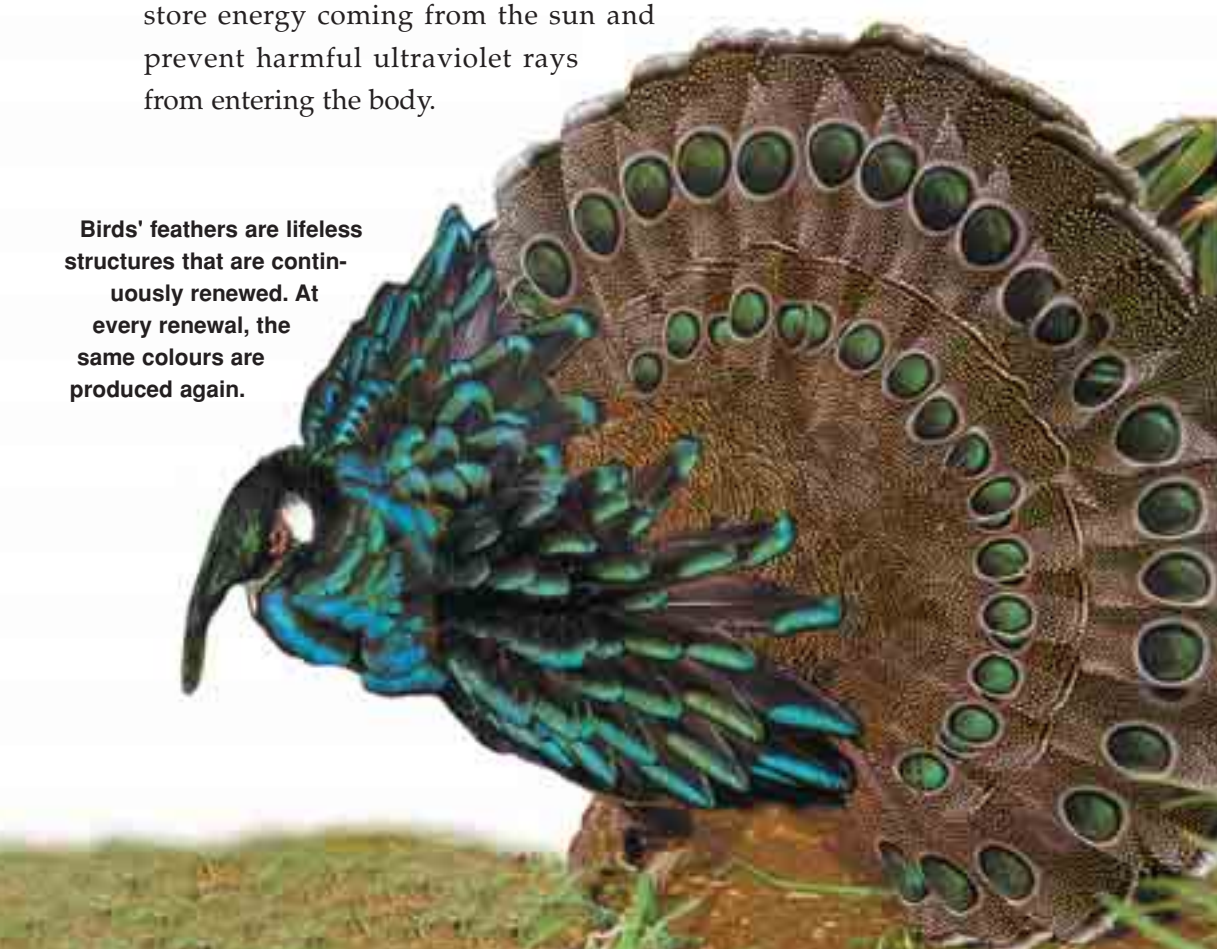
Due to their different structure, feathers can have an appearance similar to that obtained by a glass prism breaking light into different colours. Colours that are formed through refraction of light in this way are brighter and more metallic than those that are coloured by pigments. The colours of these feathers shift from blue to green, and from orange to red. Generally, the green, blue, and metallic colours in birds are formed through the reflection and refraction of light. Yet, some of the colours of feathers come from pigments.[39]

Every bird species has a different colouring. The reason for this colour diversity is due to the light shifts in feathers and the presence of a pigment substance, called keratin, in the structure of the feather.

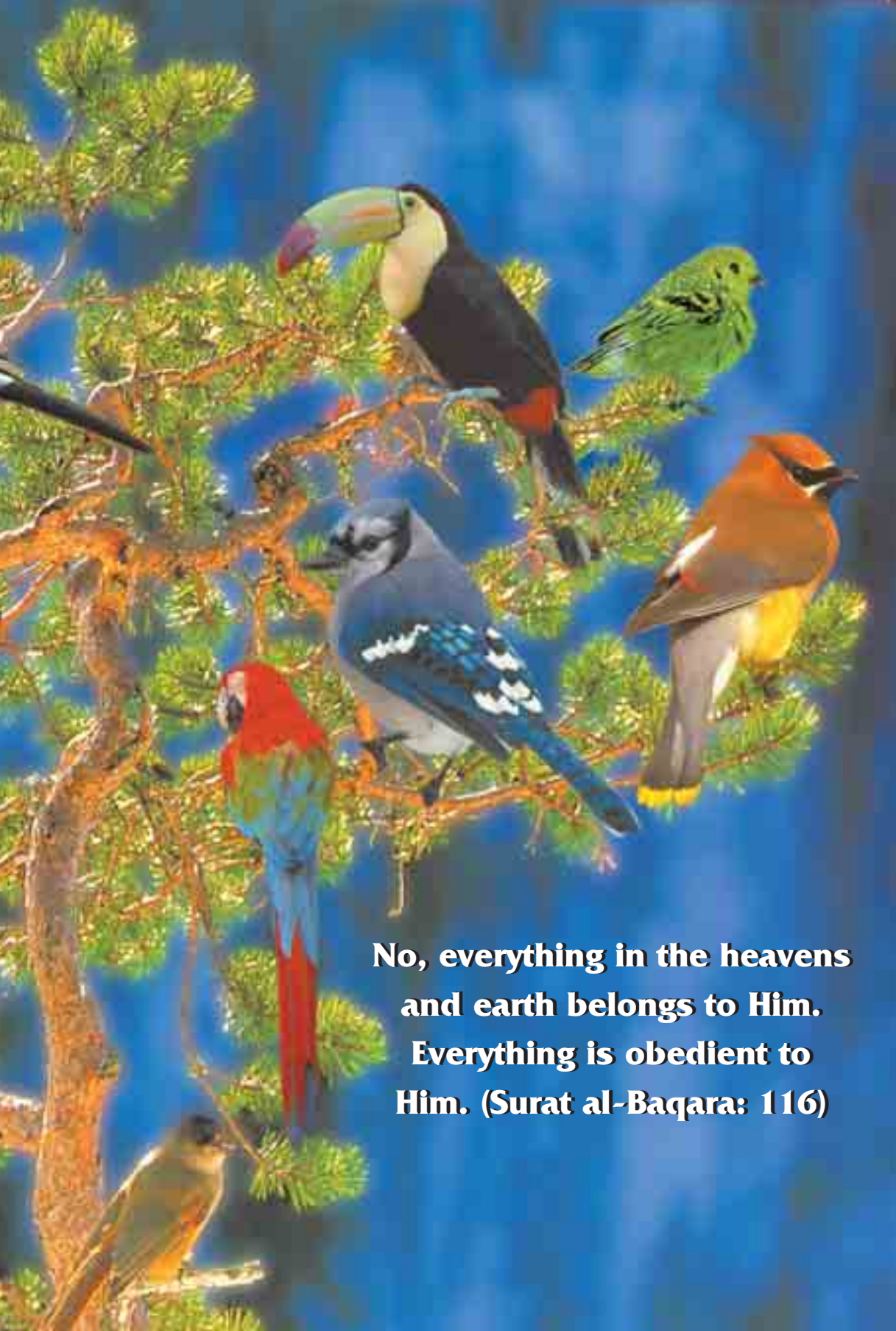
There are mainly three kinds of pigments in birds. These are melanin pigments that produce black, brown or dull yellow, lipochrome pigments that produce red, yellow or orange, and carotenoids. Blue, green and some other bright colours in birds are created by microscopic bubbles in the keratin of the feathers that refract the light. The feathers absorbing the full spectrum of light and only reflecting blue, on the other hand, creates the blue colour of some birds.[40]

Hormones also play an important role in colour change in birds. The colour difference between the male and female members of some species is caused by sex hormones. The different colourings and feather shapes of cocks and hens, for example, depend on the oestrogen hormone.

The colours of birds are important for their adaptation to their habitat as well as for male and female members' recognition of each other and the males' courtship of females in the mating season. In addition, pigments, which give colour to feathers, enhance the strength of the feathers, store energy coming from the sun and prevent harmful ultraviolet rays from entering the body.



Birds' feathers are lifeless structures that are continuously renewed. At every renewal, the same colours are produced again.



No, everything in the heavens and earth belongs to Him. Everything is obedient to Him. (Surat al-Baqara: 116)

Butterflies

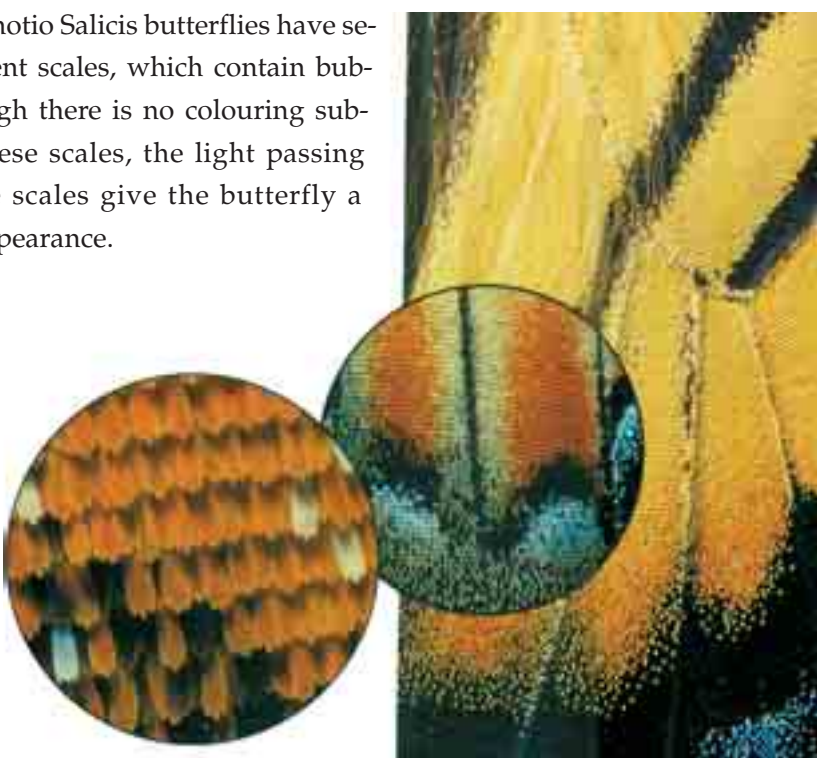
Formation of colour in the wings of butterflies is quite interesting. The light is reflected through the scales on the wings of a butterfly forming colours which are "actually non-existent" but which display an extraordinary symmetry and beauty. We just said that they are "actually non-existent", you wonder why?

Butterflies are known for the beauty of their wings that have surfaces that are relatively much wider than their thorax. How, then, do these spectacular patterns and colours in the wings of butterflies come about?

Butterflies have a pair of membranous wings, which are in fact transparent. Since these are covered with scales of varying thickness, the transparency of the membranous wings goes unnoticed. These scales increase the aerodynamic qualities of the butterflies' wings, and give them their colour. The scales, which are so delicate as to fall from their places as soon

as they are touched, have sharply-pointed ends sticking into the wings of the butterfly. In this way, the scales remain attached without falling off. Each of these tiny scales, which seem like overlapping shingles on a roof, take on a colour either by chemical pigments or by its structure which refracts the light falling onto it into rainbow colours as does a soap bubble.[41] In addition, laboratory research has shown that different colours depend on different chemical substances. The by-products of a colouring substance called pteridine, for example, create the pink, white, and yellow colours that are commonly seen in butterflies. Melanin, which is a very common colouring substance, exists in the black spots in the wings. Interestingly, the colours in the wings of butterflies are not always as they seem to be. For example, green scales are in reality a mixture of black and yellow scales. Recent research conducted on butterfly wings has demonstrated that pigments are synthesised in the scales and that the enzymes necessary for melanin production lie in the upper skin of the scales.

Colouring substances are not the only cause of these highly volatile colours in butterflies. The structure and the order of the scales on the wings of the butterfly cause various tricks of light, such as reflection, refraction, and finally the formation of colours of dazzling beauty. For instance, Stilpnotio Salicis butterflies have semi-transparent scales, which contain bubbles. Although there is no colouring substance in these scales, the light passing through the scales give the butterfly a satin-like appearance.



A close-up of the scales on the wings of butterflies

The large Indonesian butterfly (left) has two large spots resembling eyes on its wings, which it uses to startle its enemies. It is a satisfactory defence for these butterflies. Other species such as Monarch butterflies, on the other hand, take recourse to other methods (right). With their dark orange wings with black patterns, they send "bad taste" warning to their enemies.

The surface of the scales on the Argynnis butterfly's wings is unbelievably soft, which creates silvery reflections. In some butterflies, the different arrangement of two overlapping rows of scales may also create different reflections of light, for example, causing a butterfly to look blue instead of black or brown.

When we examine the structure of butterfly wings even by considering their colourings alone, we come across lots of wonders. The existence of such an extraordinary beauty is undoubtedly evidence of the exalted might and endless artistry of Allah, Who has created all these.

It also must be stated that besides their being created as adornment, the colours and patterns on the wings of butterflies have many other crucial functions for these creatures.

False Eyes of Butterflies

In many butterflies, there are round dark-coloured patterns that remind us of the eyes of a large creature. These eyes, which again consist of coloured scales on the wings, embody a most important defence mechanism for butterflies. Butterflies keep their wings closed when they rest. If they meet an enemy, or are disturbed by a slight touch, the wings in-

The butterflies seen in the photographs utilise camouflage both with colour and pattern. Allah created the eye motifs on the wings, not lacking even the sparkles in the eye.

stantly open, and large, bright, intensely coloured eyespots on the wing surface appear. In this way, the required message is delivered to the predator.

Camouflage of Butterflies

Butterflies' camouflaging skills are as impressive as their false eyes. It is as if camouflaging butterflies see the colour of the bush, make an evaluation of the environment, analyse it, and imitate the colour of the bush with the colours they produce in their bodies' highly effective systems. Another

The colours of the butterflies seen in the photographs are in fact very striking. However, both live in safety due to the harmonious they blend in with the substratum on which they pose.

species, aware of the tastes of its predator, gives warning signals to it by imitating colours that repel it by suggesting that the butterfly would taste bad or even be poisonous. It is by no means possible for a butterfly alone to perform these acts. We can make it clearer with an example:

Suppose that you are trying to produce a colour in a laboratory. If you have little knowledge of this subject, you will not be able to achieve the definite result that you wish, no matter how advanced your laboratory equipment or facilities. Then consider trying to achieve the quality of colours such as those of the butterflies, which, by developing the same colours and patterns as the environment, become almost invisible. You would not be able to develop even a single meaningful colour. The situation being so, it would be certainly an unscientific and irrational approach to claim that this glorious system in butterflies has come into existence by chance free of conscious design.

If there is a design somewhere, there is also a designer. The flawless design on the earth belongs to Allah, the Compassionate. What falls to people with reason is to reflect upon Allah's attribute of creating in detail. In Surat an-Nahl, Allah states as follows:

> **(He has made subservient to you) also the things of varying colours He has created for you in the earth. There is certainly a Sign in that for people who pay heed. (Surat an-Nahl: 13)**

The brown colour and spots under the wings of the blue Morpho butterflies provide an excellent means of camouflage for hiding in the bush. Butterflies may all of a sudden become invisible in the bush.

Black Spots that Absorb Light

In some butterflies, especially on the parts of their wings that are near to the body, there are large, dark coloured spots that consist of scales. These spots, placed on both wings symmetrically, have a very important function for butterflies. Butterflies make use of these spots in order to reach the body temperature that is required to fly. How do they do this?

Scales have the properties of modifying heat to minimum or maximum levels depending on their colours. We have all seen butterflies opening and closing their wings under the sun as if they are trying to find a certain angle. The black spots in their wings help those butterflies, which try to attract sunlight by this movement. A butterfly that needs to warm up its body opens and closes its wings so that the sunlight falls directly on these spots, and therefore warms up its body.

Butterflies that live in open lands exposed to sun have lighter colours while those that live in wooded areas have darker colours.

Some species of Lepidoptera butterflies have no scales on their wings, cannot reflect light, and so are transparent. Though it is possible to see these butterflies while they fly, it is almost impossible to locate them when they alight somewhere. This provides a perfect protection for the butterfly. Just as all other creatures, butterflies have also been created with

the systems with which they can meet all their needs. Moreover, all these are interdependent systems in which one cannot exist without the other.

Like all other creatures in the universe, Allah created butterflies too with all the details they possess and endowed them with all the systems they need.

Colours of the Undersea

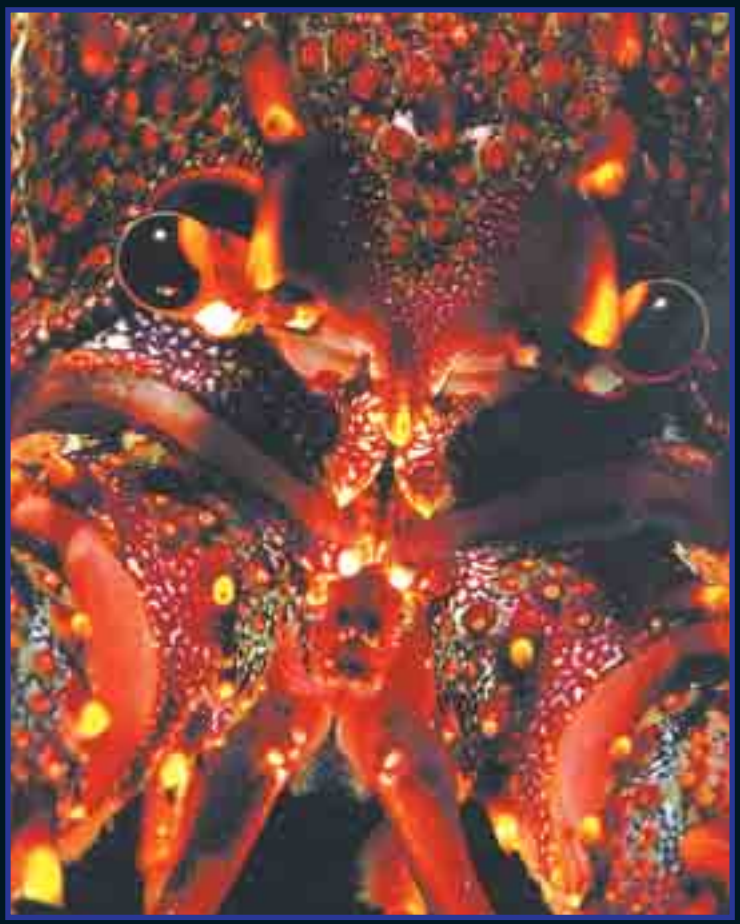
Life under the surface of the sea is very different from on land. All the features of sea-dwelling creatures are organised in such a way as to enable them to live in water in the easiest way possible. Humans cannot see in water as well as do fish, because the human eye does not have the features that would allow it to attain sharp eyesight underwater. The human eye does not have a lens system such as that of the fish, and is not spherical and hard like that of a fish, so it does not have as sharp sight underwater as the fish. It cannot allow as precisely as fish do for foreshortening of distances in the water due to refraction, as it cannot estimate the refraction of light in water.

The Trinidaian is only one of the colourful creatures of the deeps. These fish that live hundreds of metres below the surface of the sea display Allah's artistry in colour. Allah is also the Ruler of the seas.

Allah has created every living being with the most suitable characteristics for the environment it inhabits. Creatures living under the sea constitute only a small part of the examples of Allah's artistry in creation. Allah has no partner in creation and everything is under His control.

There is no other god besides Allah. Allah – He is the Almighty, the All-Wise. (Surah Al 'Imran: 62)

A shrimp moves undisturbed along the surface of a sea anemone. The transparency of these small crustaceans is extraordinary, because in most transparent animals some major part of the body still remains visible. For example, most cannot manage to conceal their digestive systems and the food contained inside them. In some species, only the tail and a part of the pincers are coloured. These small details of colour are useful in enabling the shrimp to "disappear"; the contrast between the transparent parts and the colourful markings is so pronounced that would-be predators are drawn to the markings themselves and are not able to perceive the over-all outline of the animal.[42]



The photograph on the left belongs to a rock lobster. This lobster, a perfect example of harmony in colour and design, is adorned with shades of red.[43] Above is a coral. Billions of corals lie together. They combine with each other by special secretions, and form a limestone skeleton. On this skeleton, they secrete a coloured substance: red, pink, and occasionally black or white.

In the depths of the sea, starting from 200 metres below the surface, there is no light at all. However, when reaching the bottom of the oceans, which are even deeper than the height of Everest, we come across a multicoloured world. The striped anemone fish, which live in anemone plants, seen in the photograph above, are also members of this world.

Sea cochlea (Nudibranches) is one of the most interesting animals of the underwater world. With their interesting designs and extraordinary colours, these animals are a species of cochlea without a shell. On the pictures above are examples of a few species. These creatures, which have soft bodies, are protected by a strong poison. Their striking colour warns their predators that they are very poisonous. They obtain their poison from the plants they eat.[44]

Spider crabs are remarkably diverse in size and shape. They range from gigantic Japanese Spider Crab, with metre-long legs, to the miniature coral-reef species seen above. Their patterns blend remarkably well will the poly-studded texture of their hosts.

The members of the Sinanceidea species are fish with relatively small and compact bodies. They have no scales; instead their skins are covered with wart like protuberances, which perfectly camouflage the fish as they rest upon the seabed waiting for prey.

One of the most curious and useful features of molluscs is their so-called "cloak" – the tissue that covers their bodies and forms a "second shell". As the photograph reveals, the cloak slowly covers the shell and interrupts the chromatic uniformity that could betray the animal's presence.[45]

The body of the seahorse (left) is covered with plaque-shaped bones. Seahorses are not very good at swimming. For this reason, they live by clinging to corals. Since seahorses can change their colour quickly, they are easily protected from their enemies.

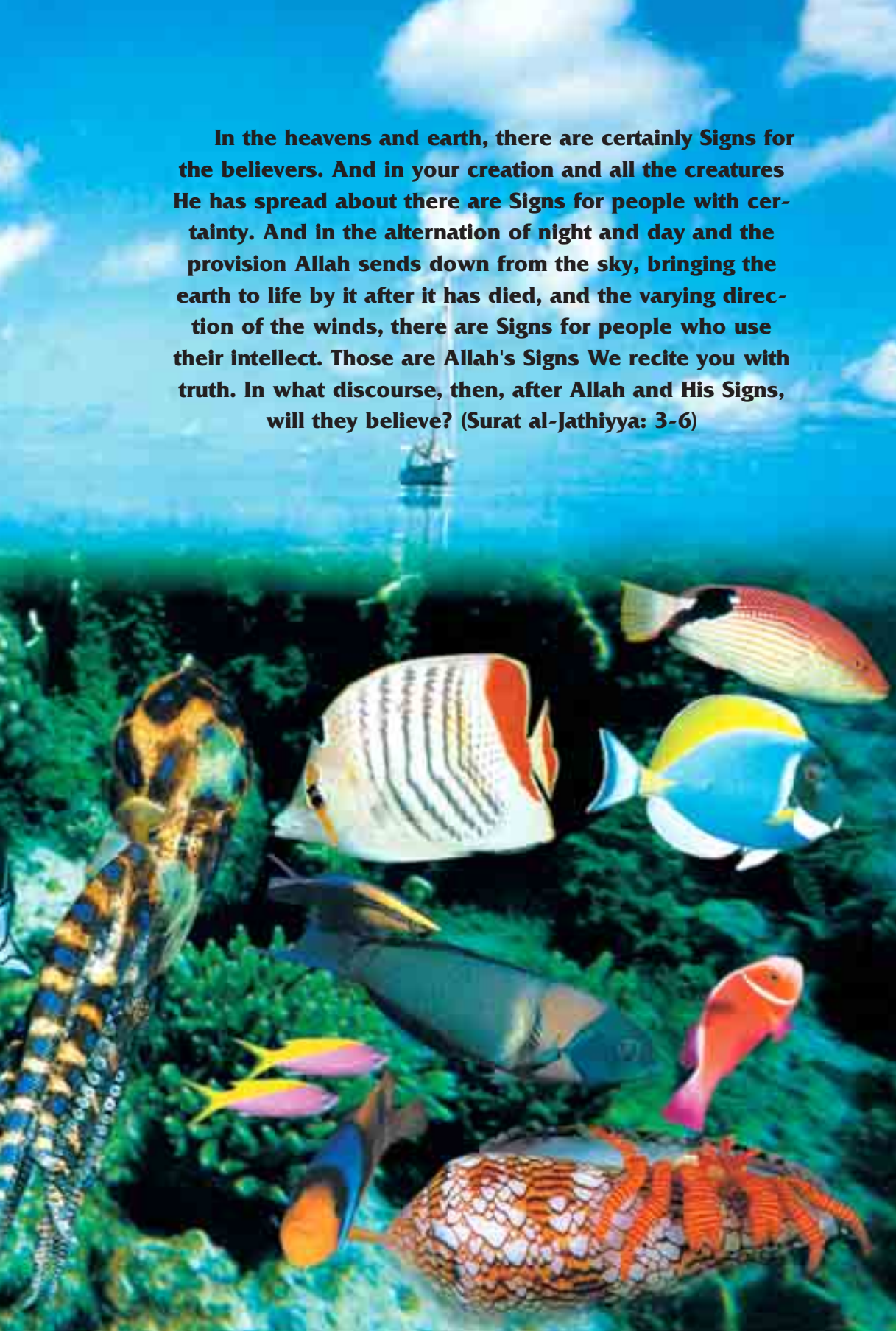
Scorpion fish live along the seabed in temperate or tropical zones and never venture out to open sea. They are carnivorous and feed on smaller fish. The long, fan-shaped pectoral fins are an excellent deterrent to the fish's enemies, and the red-and-white stripes make it difficult for their prey to see them against a backdrop of coral.[46] Scorpion fish have a very colourful appearance but can easily become invisible among the corals, which are also very colourful.

The members of the Soleidea species, such as soles and rhombuses (left), are extremely mimetic. Their benthic (i.e., bottom-dwelling) nature forces them to imitate the substratum as much as possible. The crocodile fish (right) uses its colour to hide from predators.[47]

An octopus, photographed at night, makes its skin flare to appear larger. This iridescent green colour is seen almost exclusively after dark.[48] Some species can become at one with the deep-sea underwater patterns.

Crinoids, seen on the left, are sea tulips in the shape of lilies. They have long, thin, flower-like spiked arms. There is poisonous mucus on their arms. They absorb the oxygen in water through their arms by filtering it.[49]

The mantis shrimp (seen above) is only one of the creatures of the undersea that has an interesting appearance and bright colours. Its protruding eyes are among the most complex eyes in nature.
Below are painted prawns, which live amid the spines of a poisonous sea urchin.[50]



In the heavens and earth, there are certainly Signs for the believers. And in your creation and all the creatures He has spread about there are Signs for people with certainty. And in the alternation of night and day and the provision Allah sends down from the sky, bringing the earth to life by it after it has died, and the varying direction of the winds, there are Signs for people who use their intellect. Those are Allah's Signs We recite you with truth. In what discourse, then, after Allah and His Signs, will they believe? (Surat al-Jathiyya: 3-6)

Design of Colours in Plants

If one does not reflect, one cannot see the miraculous characteristics of the living beings around one. So long as one does not think about how a butterfly with its membranous wings flies, how the flowers one sees have such diversity of colour, how the top branches of hundreds of metres tall trees remain green, one cannot grasp the subtleties of these. Even the extraordinary artistry in a flower may not capture one's attention.

As we examined throughout this book, however, perfect artistry is clearly displayed in all living beings from insects to birds, from plants to sea creatures. Certainly this artistry belongs to Allah Who is the Creator of all living things.

Let us think about plants, fruits, vegetables, flowers, and trees. Plants, each having different colours, fragrances and tastes, are evidence of the artistry in creation of Allah. Each plant you see around you or know from books has colours and patterns that are exclusive to its kind. The reproductive process of each is different, the proportions of nectar they contain and their fragrances are all different. Let us think about roses. There are red, white, yellow, orange, pink, white edged, double-coloured, even roses with wavelike colours. Certainly, it would be great blindness for a man who sees all this not to feel admiration for and not to glimpse the endless might of Allah, Who is the Creator of all these flowers. In the Qur'an, Allah refers to those who fail to appreciate the evidence of the creation they see as follows:

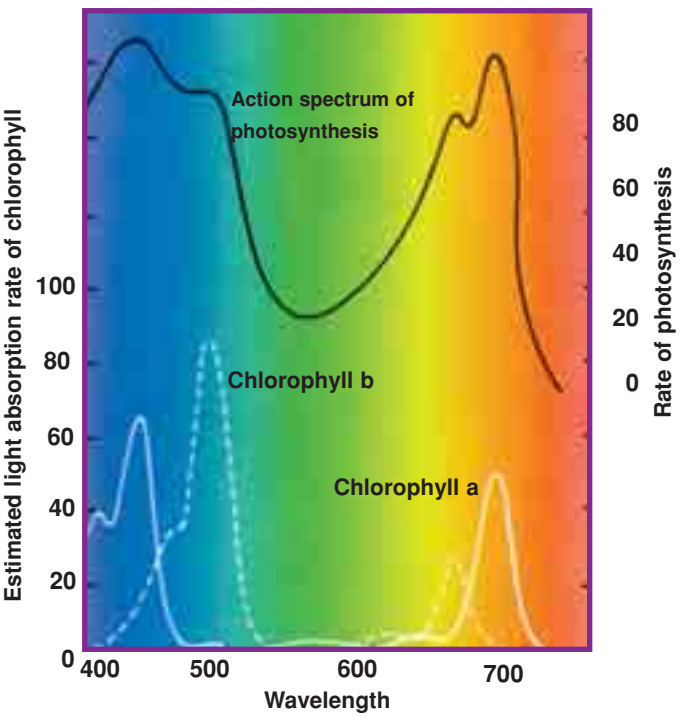
How many Signs there are in the heavens and earth! Yet they pass them by turning away from them. Most of them do not have faith in Allah without associating others with Him. (Surah Yusuf: 105-106)

Have you ever thought about why plants are green?

As is obvious, the colours prevailing in the world of plants are green and shades of green. Chlorophyll is the main substance producing green. Chlorophyll, a very important substance, is a pigment contained in the chloroplasts scattered out in the cytoplasm of the plant cell. These pigments absorb light coming from the sun easily, but only reflect the colour green. In addition to giving the colour green to leaves, this feature also causes the fulfilment of a crucial process called "photosynthesis".

In photosynthesis, plants utilise sunlight, which consists of the combination of different colours. One of the most important properties of the colours in sunlight is that their energy levels are different from one another. This assortment of colour called the spectrum, which is obtained by the refraction of colours in a prism for example, has red and yellow tones at one end, and blue and violet tones at the other end. Colours with the highest level of energy are those colours at the blue end of the spectrum.

The difference in the energy levels between colours is very important for plants, because they need large amounts of energy to make photosynthesis. For this reason, during photosynthesis, plants absorb those sunrays of the highest energy levels towards the ultraviolet end of the spec-



The dashed and solid white curves below illustrate the absorption spectrum of chlorophylls a and b. The black curve at the top illustrates the effectiveness of various wavelengths of light in powering photosynthesis. The figure reveals how closely the combined absorption spectra of chlorophylls a and b resemble the action spectrum of photosynthesis. [51]

Chlorophyll is the main substance producing green in plants. Allah makes this substance a cause for the nourishment of plants and the sustanence of all other living creatures.

trum, i.e. violet and blue, as well as the colours that are more towards the infra-red (heat) end of the spectrum, i.e. red, orange and yellow. Leaves carry out all these processes through the chlorophyll pigment existing in the chloroplasts.[52]

For a plant to photosynthesise, the energy levels of the light particles that are absorbed by the substance chlorophyll must be adequate. The process of photosynthesis begins when a plant, with the energy it receives from light particles, breaks the water molecules into oxygen and hydrogen molecules. Hydrogen reacts with carbon in the carbon dioxide gas to form the sap of the plant, which is essential for the plant to survive. In other words, the plant produces its own food. Unused oxygen, on the other hand, is released to the air. Most of the oxygen we breathe in the atmosphere is produced that way.

As a result of the process of photosynthesis in plants, they produce carbohydrates, one of the main food sources for other living things. The substances produced during photosynthesis are extremely important for plants themselves as well as for animals and humans, because plants are the main source of food of all living things on earth.

Everywhere in the world, the same kinds of flowers have the same colours and patterns that are exclusive to their kinds, and this fact rarely changes.

As we have seen, besides providing an aesthetic appearance, the green colour of plants is also extremely crucial for the survival of both plants and other living creatures. Allah makes the substance chlorophyll a cause for the nourishment of plants and the sustenance of all other living creatures.

How do the Different Colours in Plants Come About?

As mentioned before, the colour reflected by each object depends on the pigment molecules that object has. The basic pigment molecule in green plants is the substance "chlorophyll" as earlier stated. In addition to this, there are other pigments producing other colours in plants, and these different kinds of pigments form the extraordinary colour diversity we see in plants.

For example, in addition to chlorophyll, there are also carotenoid pigments in plants. Some of these pigments, which we have examined in detail before, are yellow and give colour to ears of corn, lemons, goldenrod and sunflowers. Other carotenoids are much more red than yellow; these are found in beets, tomatoes, roses, and carrots. Carotenoids are also present in green leaves. Then one might wonder: why do leaves not look red, yellow or orange but are mostly in shades of green? The reason is that the green of the chlorophyll is so strong that other colours cannot be seen.[53]

However, changes occur in the autumn. As the hours of daylight become shorter, plants stop making chlorophyll, and the strength of the pigments producing the colour green decreases, causing the green colour of leaves to fade. The carotenoids, becoming visible now, colour the leaves brown, yellow, and red.

Also in the autumn, a group of pigments called "anthocyanins" form in the outer layers of certain leaves. These pigments, which are bright red and blue, combine with the others to give leaves the crimson and purple hues we occasionally see.[54]

Information about all the pigments giving colour to a plant is coded in the DNA of that plant. For this reason, a plant species bears the same characteristics no matter where on the earth. For example, everywhere in the world the colour of oranges is the same; their shape and the structure of their peels are the same. The colour of the transparent membrane, which lies inside the peel of the orange, and which constitute little sacs filled with orange coloured, perfumed sugared water, never change anywhere in the world. Bananas are everywhere yellow, tomatoes are red, and roses, violets, and carnations are all the same colours wherever they are.

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)

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

It is Allah Who created the heavens with no support – you can see them – and cast firmly embedded mountains on the earth so that it would not move under you, and scattered about in it creatures of every kind. And We send down water from the sky and make every generous species grow in it.
(Surah Luqman: 10)

Rainbows in which the colour spectrum can be seen in a neat order are in fact an illusion of colour. Rainbows are formed by sunlight refracted through raindrops.

In nature, there is a diversity of colour that changes according to the seasons. Mountains, trees, lakes, rivers, in short, all nature is evidence of the unparalleled artistry in colour of Allah.

All of the fruits and vegetables you see in these pictures, which have different shapes and colours, grow in the same dry soil and are watered with the same water. Yet, each of them has a colour, taste and smell, particular to its kind. Allah has created each one of them uniquely and bestowed them upon us.

In autumn, different pigments in the leaves are released and shades of yellow and red dominate the colour of the plants.

Wherever you go in the world, you will not see a naturally growing strawberry with a different colour. Everywhere in the world, the DNA of strawberries contains the characteristics that make them the strawberry we know. The colour, smell and taste of a strawberry are always the same. It is a unique, unparalleled order. Certainly, it cannot be claimed that such a system has come into existence by sheer chance.

The owner of this matchless artistry that prevails all over the world is Allah, Who has infinite wisdom. Allah has power over all things.

Have you ever thought how such diversity of colour comes about in plants although they all grow in the same soil and are watered with the same water?

In Surat ar-Ra'd, Allah draws attention to the fact that although all watered with the same water, different crops come out of the soil:

> **In the earth there are diverse regions side by side and gardens of grapes and cultivated fields, and palm-trees sharing one root and others with individual roots, all watered with the same water. And We make some things better to eat than others. There are Signs in that for people who use their intellect. (Surat ar-Ra'd: 4)**

As Allah has drawn to our attention, let us ponder, by looking at the vegetables and fruits around us, how different crops come out of the same soil. For example, let us look at melons, watermelons, kiwis, bananas, cherries, eggplants, tomatoes, grapes, peaches, and green beans. When you peel the dark yellow skin of a banana, out of it comes a banana of a lighter yellow with its matchless fragrance. The red, green or yellow peel

of an apple has a smooth sheen. Humans cannot imitate the quality of the taste and smell, an aroma particular to it, of its sweet juice.

Then, the question may occur to one: how do all those flowers, trees, vegetables and fruits have so many different colours although they come out of the same arid soil? This is evidence of the endless knowledge of Allah and His creating without any preceding model. It is impossible for man to create a new colour. All colours produced by people are only copies of the originals existing in nature. However, Allah is the Originator, and the creation of all the colours describing the living creatures on earth is His. Allah's artistry in creation is matchless. One of the names of Allah, the All-Powerful, is al-Musawwir – the One Who forms His creatures in different forms. Allah creates everything He creates in the most perfect forms.

> **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: 24)**

The colours and appearance of all plants on the earth have been created in such a way as to appeal to the human soul. In fruits and vegetables, there is a matchless diversity of colour. On the other hand, when we think of flowers and trees we again see the same aesthetic appearance and diversity of colour.

There is also a totally unequalled colour and pattern design in flowers. Each of the hundreds of thousand kinds of flowers has been furnished with particular characteristics exclusive to its kind. Today, the perfumes, patterns and colours produced by men are all imitations of their original counterparts in nature. For instance, the purple colour of the leaves of violets, which are soft like velvet, and the smoothness of the surface of their leaves are matchless. Velvet fabrics are produced in imitation of the texture of violets but a similar quality can never be achieved.

With this approach, no matter what plant we examine on the earth, the conclusion we arrive at is that it is a perfect creation. Allah, Who has no partners in creation, creates plants for men with different tastes, fragrances, colours and forms. What falls to us is to reflect on the signs Allah creates and to be grateful.

A Topic Evolution Cannot Explain: Harmony And Symmetry

On the earth we inhabit and in the wider universe in which the earth is located great harmony prevails. Even by looking out of the window, we see many examples of this harmony. In the clouds, in the sky, trees, flowers, animals and in similar examples, perfect order and symmetry is apparent.

When we look at nature, we see that every plant and every animal have their own particular colours and patterns exclusive to their kind. Furthermore, each of these colours and patterns have different meanings for living things: an invitation to mate, expression of aggression, a warning against danger and many notions like these acquire a meaning among animals from the perception of colours and patterns.

The theory of evolution, which claims that everything has come into being by random coincidence, has reached a total impasse because of the artistry, diversity of colours and harmony exhibited in nature. Charles Darwin, the founder of the theory in the form in which we have it today, also had to confess the situation he faced because of the design evident in living beings. Darwin stated that he could not understand why the colours of living creatures have particular meanings:

> My difficulty is, why are caterpillars sometimes so beautifully and artistically coloured? Seeing that many are coloured to escape danger, I can hardly attribute their bright colour in other cases to mere physical conditions. If any one objected to male butterflies having been made beautiful by sexual selection, and asked why should they not have been made beautiful as well as their caterpillars, what would you answer? I could not answer but should maintain my ground.[55]

Again Charles Darwin expresses the conflict he came into with his own theory as follows:

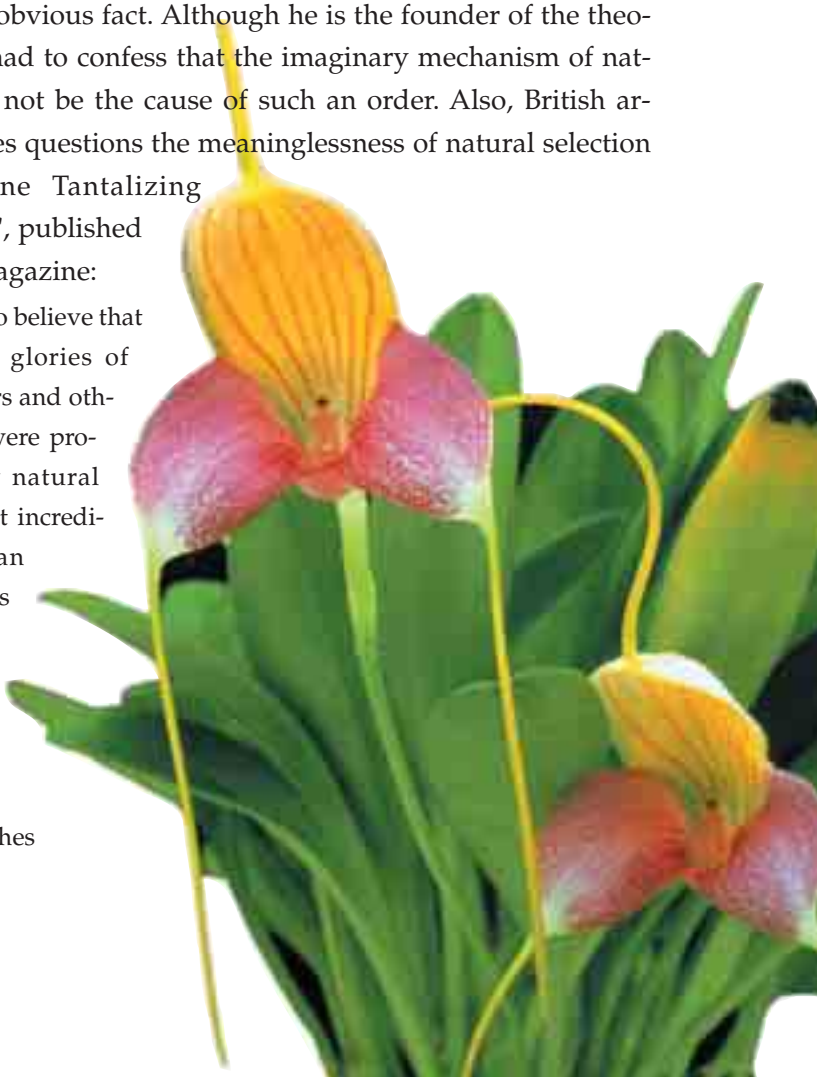
> I value the cases of bright-coloured, incubating male fishes, and brilliant female butterflies, solely as showing that one sex may be made brilliant without any necessary transference of beauty to the other sex; for in these cases I cannot suppose that beauty in the other sex was checked by selection.[56]

Certainly, it is impossible for colours, order and symmetry in nature to have come into being by natural selection. At this point, it would be

useful to have a closer look at the concept of "natural selection" put forward by the Darwinian theory of evolution. As is well known, natural selection is one of the imaginary mechanisms of the theory of evolution. It holds that those best fitted to their environment will survive, while those who are weak and unfit for environmental conditions will be eliminated. According to the claims of evolutionists, a beneficial change occurs in a member of a species through a random mutation in its genes. That creature is selected from among all others of that species by the mechanism of survival of the fittest, and thus what was a random mutation is transferred in larger amounts to the next generation.

It is definitely not possible for colours, patterns and the symmetry in the patterns of living beings to have been created through such a mechanism. This is a very obvious fact. Although he is the founder of the theory, Darwin himself had to confess that the imaginary mechanism of natural selection could not be the cause of such an order. Also, British archaeologist J. Hawkes questions the meaninglessness of natural selection in his article "Nine Tantalizing Mysteries of Nature", published in *New York Times* magazine:

> I find it difficult to believe that the extravagant glories of birds, fish, flowers and other living forms were produced solely by natural selection; I find it incredible that human consciousness was such a product. How can man's brain, the instrument which created all the riches



> of civilization, which served Socrates, Shakespeare, Rembrandt, and Einstein, have been brought into being by a struggle for survival among hunters of wild game in the Pleistocene wilderness?[57]

As understood from those confessions of evolutionists, they know that their theory is in crisis. It is unreasonable to defend the idea that a cell, which supposedly came into existence coincidentally as a result of lightning and rains on the earth, turned into multicoloured living things over time. Suppose a scientist to take a single cell of a bacterium for instance, provide the most suitable laboratory conditions, use all the equipment required, spend effort on having this cell evolve over millions of years (though this is not possible, let us suppose it is); what would he acquire in the end? Would he ever transform a bacterium into a peacock with its dazzling colours, or into a leopard with perfect patterns on its skin, or into a rose with its red velvet-like leaves? Of course, intelligent people can neither imagine such a thing nor make such a claim. Yet, this is exactly the claim of the theory of evolution.

The "Colour" Impasse of Evolution

Let us verify with an example that it is impossible for the colours of living beings and systems of transformation of colour to come about by natural selection. Let us take chameleons for an example. Chameleons are animals capable of adapting to the colours present in the environment and changing their colours according to the surroundings. While resting on a green leaf, they assume a green colour, while moving onto a brown branch, their skin changes to brown in a very short time. Let us think together over how this process of colour change takes place.

A living creature changes its colour as a consequence of highly complex processes taking place in its body. It is impossible for a man to change either his own colour or another living being's colour, because the human body is not equipped with the proper systems for such an operation. Nor is it possible for a human to develop such a system on his own because it is not like a piece of equipment to be developed and installed. In short, for a living creature to be able to change its colour, it is imperative for this creature to come into being with such a colour change mechanism.

Let us think about the first chameleon on the earth. What would happen if

It is Allah Who determines the colours of all living beings in nature.

this creature did not have the ability to change colour? First, the chameleon would be easy prey since it could not hide. Besides, since it would be easily recognised, hunting would be very difficult for it. This would finally cause a chameleon devoid of any other defence mechanism to die or starve and, after a while, to become extinct. Yet, the existence of chameleons in the world today evidently proves that such an event has never taken place. So, chameleons possessed this perfect system from the first moment they appeared on earth.

Chameleons are one of the creatures that change colour most rapidly according to their surroundings. It is certainly not possible for a chameleon to make a system so complex as changing the colour of its body cells in such a short time on its own. This system present in chameleons is a product of matchless design. And this design belongs to Allah, the most Wise.

Evolutionists claim that chameleons have developed this system over time. This would make some questions occur to our minds: why have chameleons chosen to develop such a complex system such as changing colour instead of an easier defence mechanism? Why has it chosen changing colour while there are so many kinds of defence mechanisms? How has such a mechanism, providing for all the chemical processes necessary for colour change, been formed in the chameleon? Is it possible for a reptile to think of such a mechanism and then develop the necessary systems in its body? More, is it possible for a reptile to encode the information necessary for colour change in the DNA present in its cells?

Unquestionably, this is impossible. The conclusion to be drawn from the answers given to such questions as above will be one and the same: it is impossible for a living creature to develop such a complex system that allows it to change its own colour.

Not only systems of colour change, but also the diversities of colour and pattern in living beings deserve focus. It is impossible for the bright colours in parrots, the diverse colours in fish, the symmetry in the wings of butterflies, the fascinating patterns in flowers and the colours of other living things to have been formed on their own. Such perfect patterns, colours and figures, which serve very important purposes in the lives of

living things, are concrete evidence of creation. It is obvious that there is a superior design in the formation of the colours around us.

Let us make it clear with an example: let us suppose that we are designing a product consisting of squares. Even to draw one of them, we need to make a small calculation and make sure that all four sides are linear and equal and the square has 90-degree angles at the corners. We can draw the square only after making some calculations and adjustments. As seen, even drawing a single square requires some knowledge and skill.

And mankind and beasts and livestock are likewise of varying colours. Only those of His slaves with knowledge have fear of Allah. Allah is Almighty, Ever-Forgiving. (Surah Fatir: 28)

Let us apply the same reasoning to living creatures around us and ponder on them. There is perfect harmony, order and plan in living beings. A person who appreciates the necessity of knowledge and skill in drawing a simple square, will understand right away that origination of the order, harmony, colours and design in the universe is also a product of infinite knowledge and skill. Therefore there is no reasonable or

Allah bestows the colours and patterns on these insects.

scientific ground for claiming that a system such as the universe has come into existence by chance. Allah, the Most Powerful, has created the entire universe. Allah is the One Who fashions everything He creates most beautifully.

The Symmetry in Nature Cannot Originate by Chance

One of the most striking points producing harmony in the universe is symmetry. Living things have symmetric structures. Anything we see in nature, a seed for instance, a fruit or a leaf we examine will show us symmetry in their structure. Let us take a leafy plant. Leaves wind around the body of the plant like a spiral. This is a certain type of symmetry. Similarly, an observable order rules in the arrangement of the grains of a seed and in the design of the veins of the leaf.

Butterfly wings are another example of the symmetry in nature. On both wings of a butterfly are the same shades of colour and patterns. A pattern on one wing is also present on the other in exactly the same place.

We can see many other examples of symmetry around us, a few of which we summarised above. The important thing however is that there is a common conclusion to be drawn from all the given examples. There is a matchless order, or to be more exact, a magnificent artistry displayed in living things. One of the greatest evidences of the fact that the universe could by no means have come into being by coincidence is this subtle order and artistry. In his book titled *"The Theory of Evolution and Bigotry"*, Prof. Cemal Yıldırım states this fact although he is an evolutionist himself:

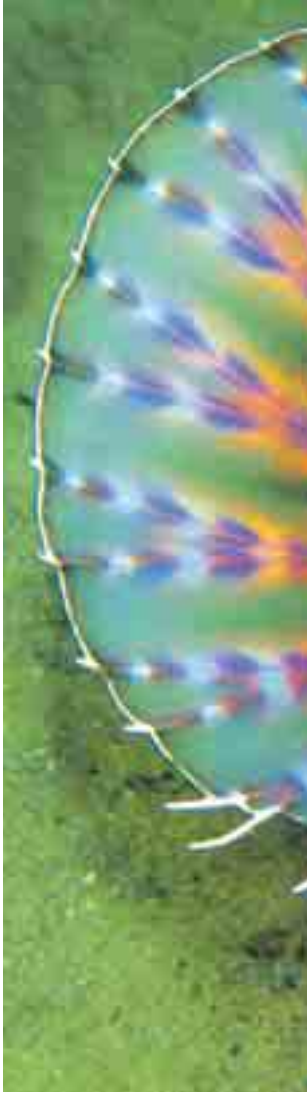
> "It is far from being convincing to attribute this order in living things, which seems to have a particular purpose, to chance or coincidence".[58]

Allah created everything in the universe within a larger order. Allah has control over all things.

> **Your God is One God. There is no god but Him, the All-Merciful, the Most Merciful. 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: 163-164)**

There is perfect symmetry in nature, which could by no means have originated by chance.

Conclusion



When a wise and conscientious person looks around, he will immediately see the fact of creation. This is so because Allah has created everything for us to know Him and ponder upon what He created.

For a person who has developed this understanding, it would be completely irrational to claim that the delicate balances constituting life came about by "chance". For each interdependently working piece forming this order has an extremely important role in the overall process. The colours of living things, which are the subject matter of this book, are one of the most important components of the order in the universe.

As seen in the examples given so far, the colours, patterns, spots, and even lines on the creatures in nature have a meaning. Colours, sometimes used as a means of communication, sometimes as a warning for predators, have a vital importance for living beings. This is so much so that the lightness or darkness of that creature's shade of colour, and even the direction of its lines have been specially determined.

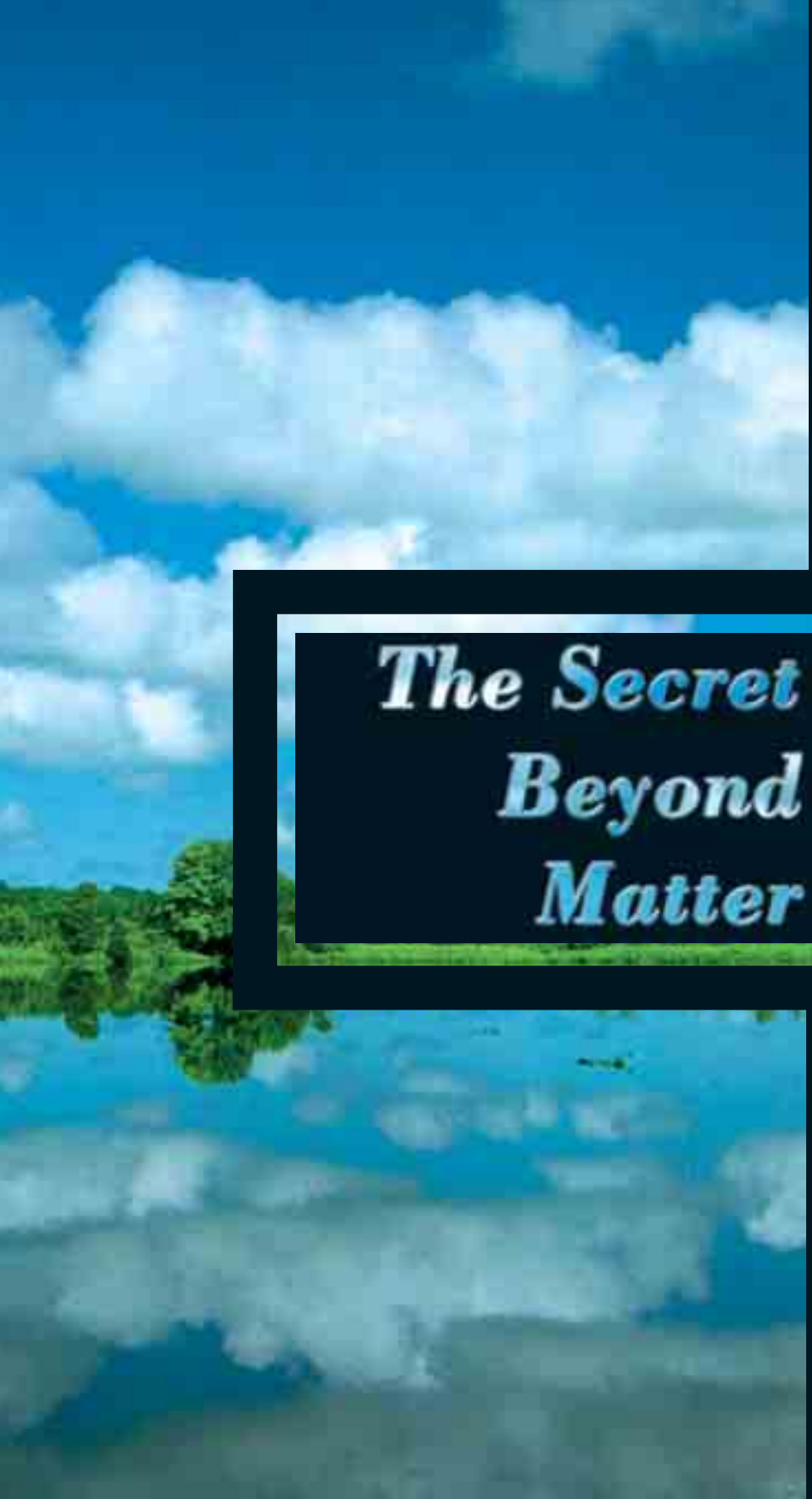
A watchful eye will immediately see that not only living beings but also everything else in nature is just the way it should be, each being in the most appropriate place for it. What's more, he will understand that everything has been given to the service of men. The blue, refreshing colour of the sky, the colourful appearances of flowers, the trees in bright green, the pastures, the moon, which lights up the world in pitch darkness, the stars and all the other beauties that we cannot count are manifestations of the artistry of Allah.

Allah has created the universe and everything animate and inanimate therein flawlessly. Allah has control over all things; He is the Most Powerful, the Almighty.

The symmetry and order evident in the fish in the photograph is surely the masterpiece of a Creator. This Creator is Allah, the Almighty.

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)

After all the subjects covered in this book, what falls to someone who has a grasp of the might and the endless artistry of Allah, is to turn towards the real owner of all these beauties and to lead a life that will please Him alone.


The Secret
Beyond
Matter

From the moment a person comes into existence, he is subject to the steady indoctrination of the society. A part of this indoctrination, possibly the foremost part of it, holds that reality is all that can be touched with the hand and seen with the eye. This understanding, which is quite influential in society, is transmitted unquestioned from one generation to another.

A moment of thought, without being subject to any indoctrination, would however make one realise an astonishing fact:

From the moment we come into existence, all the things surrounding us are simply what our senses present to us. The world, human beings, animals, flowers, the colours of these flowers, odours, fruits, tastes, planets, stars, mountains, stones, buildings, and space; in brief, all things are perceptions our senses present us. To further clarify this subject, it will be helpful to talk about the senses, the agents providing information to us about the exterior world.

Our perceptions of sight, hearing, smell, taste and touch, all function similarly to each other. Images of taste, odour, sound, sight, and solidity we receive from objects we assume have existence in the external world are all transmitted by neurons to the relevant centres in the brain. Hence, what the brain receives are nerve impulses. For instance, during the process of seeing, light clusters (photons) that travel from the object to the eye pass through the lens at the front of the eye where they are refracted and fall inverted on the retina at the back of the eye. The nerve impulse generated by the retina is perceived as an image in the visual centre of the brain after a series of processes. And we, in a part of our brain called the visual centre, which takes up only a few cubic centimetres, perceive a colourful, bright world that has depth, height and width.

A similar system operates in all the other senses. Tastes, for instance, are turned into nerve impulses by special cells in the mouth and on the tongue and transmitted to the relevant centre in the brain.

An example will further clarify this subject. Let's assume that at the moment you are drinking a glass of lemonade. The coolness and solidity of

the glass you hold is converted into nerve impulses by special cells under your skin and transmitted to the brain. Simultaneously, the odour of the lemonade, the sweet taste you experience when you sip it and the yellow colour you see when you look at the glass are all transmitted to the brain in the form of nerve impulses. The noise you hear when you put the glass on the table is similarly perceived by your ear and transmitted to the brain as an electrical signal. Sensory centres in the brain, which are essentially different yet work in co-operation with each other, interpret all of these perceptions. As a result of this interpretation, you assume yourself to drink a glass of lemonade. In other words, everything takes place in the sensory centres in the brain while you think that these perceptions are solid.

However, at this point you are simply deceived since you have no evidence to assume that what you perceive in your brain has a material correlate outside your skull.

The subject that has been explained so far is obvious and is proved true by science today. Any scientist would tell you the way this system works and that the world we think we live in is in reality an aggregate of perceptions. An English physicist, John Gribbin states with relation to the interpretations the brain makes that our senses are like the interpretation of stimuli coming from the external world, as if there is a tree in the garden. He goes on to say that our brain perceives the stimuli that are filtered through our senses, and that the tree is only a stimulus. He then asks: So, which one is real? The tree that is formed by our senses, or the tree in the garden?[59]

No doubt, this is a reality that requires profound reflection. Up until now, it is entirely possible you assumed that everything you see in the outer world has an absolute reality. However, as science also verifies, there is no way to prove that objects have material correlates in the outer world. The subject briefly explained here is one of the most momentous you can come to realise in your life.

Millions of Colours in a Pitch Dark Place

When we consider this deeply, we encounter quite astonishing matters. The brain, in which our sensory centres are located, is only a piece of meat weighing 1,400 grams. And the skull, a mass of bones, protects this piece of meat. This is such a protection that no light, noise, or odour of any kind can penetrate through it. The inside of the skull is pitch-dark and completely insulated from any light and odour.

However in this dark space, we perceive a colourful world with millions of different tastes, odours and voices. How then does this happen?

What makes you feel the light in pitch-darkness? What makes you

We see everything around us as coloured inside the darkness of our brains, just as this garden looks coloured from the window of a darkened room.

feel the odour in a place completely insulated from every kind of odour? Alternatively, what makes you feel other feelings? Who creates all of these senses for you?

In fact, every moment a miracle happens. As mentioned above, all perceptions of the room we are in, for instance, are transformed into nerve impulses and transmitted to our brains. The sensations transmitted to the brain are interpreted as the image of the room. In other words, you are, in truth, not inside the room you assume you are in; on the contrary, the room is inside you. The location of the room remains in the brain, or rather let us say, the location in which it is perceived in the brain is a tiny, dark and quiet spot. However, the vast landscapes you see on the horizon somehow also fit into this tiny spot. You perceive both the room you are in and the vast landscape in the same place.

Moreover it is again our brain that interprets and attributes meaning to the signals that we assume to be the "external world". For example, let us consider the sense of hearing. It is in fact our brain that transforms the sound waves in the "external world" into a symphony. That is to say, music is also a perception created by our brain. In the same manner, when we see colours, what reaches our brains are merely nerve impulses of different characters. It is again our brain that transforms these signals into

When we are inside a room we suppose ourselves in a restricted place, and when at a seaside in a very broad place. This, in some measure, is only an illusion, because, in truth, we experience both settings in a very narrow place within our brain.

colours. There are no colours in the "external world". Neither is the apple red nor is the sky blue nor the trees green. They are as they are just because we perceive them to be so. The "external world" depends entirely on the perceiver.

Even the slightest defect in the retina of the eye causes colour blindness. Some people perceive blue as green, some red as blue, and some all colours as different shades of grey. At this point, it does not matter whether the object outside is coloured or not.

The prominent thinker Berkeley also addressed this fact:

> At the beginning, it was believed that colours, odours, etc., "really exist", but subsequently such views were renounced, and it was seen that they only exist in dependence on our sensations.[60]

In conclusion, the reason we see objects coloured is not because they are coloured or because they have an independent material existence outside ourselves. The truth of the matter is rather that all the qualities we ascribe to objects are inside us and not in the "external world".

This is perhaps something of which you have never thought until today.

What is There Outside Us?

So far we talked about the fact that we live in our skulls and perceive nothing more than that which our senses perceive. Now let's proceed a step further: "Do the things we perceive have an actual existence or are they imaginary?"

Let's start by asking: is there a need for the external world in order to see or hear?

No. There is no need for the external world in order to see or hear. Stimulation of the brain in any form triggers the functioning of all the senses, forming feelings, visions and noises. The best example explaining this is the dream.

While dreaming, you lie on your bed, in a dark and quiet room, your eyes shut tight. Nothing reaches you from outside for you to perceive, nei-

ther light nor noise. However in your dreams, you experience many of the things you are likely to experience in daily life, just as vividly and clearly as in the waking state. In your dreams, you also wake up and hurry to work. Alternatively, in your dreams you go on holiday and feel the summer sunshine.

Besides, during the course of your dreams, you feel no doubts about what you see. Only on waking up do you realise that it was all a dream. In your dreams, you fear, feel anxious, happy or sorry. Simultaneously, you experience the solidity of matter. However, there exists no source producing these perceptions. You are still in a dark and quiet room.

Descartes states the following about this astonishing fact of dreams:

> In my dreams, I see that I do various things, I go various places; when I wake up, however, I see that I have not done anything, gone anywhere, and that I peacefully lie in my bed. Who can guarantee to me that I do not dream also at the time being, and even more, that my whole life is not a dream?[61]

In this case, just as we experience our dreams as real and only realise that it was a world of fancy when we awake, we cannot claim that what

In our dreams, we can dream ourselves on a tropical island. We live that moment with all its reality. No one can convince us that we are dreaming at that moment. It is not until we awake that we understand we were dreaming.

we experience when awake is real. So, it is entirely probable that, we may well at any time be awoken from life on earth, which we think we are living right now, and start experiencing real life. We have no evidence with which to deny it. On the contrary, the findings of modern science raise serious doubts about the assertion that what we experience in our daily lives has actual existence.

In this case, we come face to face with an obvious matter: while we think that this world in which we live exists, there is no ground on which to base this supposition. It is entirely possible that these perceptions do not have material correlates.

Are Our Brains Separate from the External World?

If the thing we acknowledge as the material world merely comprises perceptions shown to us, then what is the brain, by which we hear, see and think? Isn't the brain, like everything else, a collection of atoms and molecules?

Like everything else we consider "matter", our brains are also perceptions, and are surely not exceptions. After all, our brains are also pieces of meat that we perceive through our senses. Like everything we assume to exist in the outer world, they are only images for us.

So, who perceives all these? Who sees, hears, smells and tastes?

All these bring us face to face with something obvious: a human being who sees, feels, thinks and is conscious is more than just the sum of the atoms and molecules which make up his body. What makes a person a human being is actually the spirit Allah grants him. Otherwise, attribution of consciousness and all human attributes and skills to a piece of meat of 1.5 kg would be definitely irrational, not to mention that this piece of meat is only an illusion.

> **He Who has created all things in the best possible way. He commenced the creation of man from clay; then produced his seed from an extract of base fluid; then formed him and breathed His Spirit into him and gave you hearing, sight and hearts. What little thanks you show! (Surat as-Sajda: 7-9)**

Allah is the Being Nearest to Us

Since a person is not an accumulation of matter but a "ruh – spirit", who is it that presents, or to put it more accurately "creates" and presents, the collection of perceptions called "matter" to our spirits?

The answer to this question is explicit: Allah, Who "breathes" His spirit into human beings, is the Creator of everything surrounding us. The only source of these perceptions is Allah. Nothing exists but what He creates. In the following verse, Allah relates that He perpetually creates everything and that otherwise, nothing would exist:

> **Allah keeps a firm hold on the heavens and the 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)**

As a result of the steady conditioning people are exposed to from the time they are born, they may be unwilling to accept this fact. Yet, no matter how they avoid hearing or seeing it, this is an obvious fact. All the images shown man are creations of Allah. Moreover, not only the external world but also all the actions one claims as one's own happen only by the will of Allah. Any action independent and separate from the will of Allah is out of the question.

> **… Allah created both you and what you do. (Surat as-Saffat: 96)**
>
> **… you did not throw when you threw; it was Allah Who threw... (Surat al-Anfal: 17)**

As a result of all these we understand that the only absolute being is Allah. There is nothing but Him. He encompasses everything in the heavens, earth and everything in between. Allah relates in the Qur'an that He is everywhere and that He encompasses all things:

> **What! Are they in doubt about the meeting with their Lord? What! Does He not encompass all things! (Surah Fussilat: 54)**
>
> **Both East and West belong to Allah, so wherever you turn, the Face of Allah is there. Allah is All-Encompassing, All-Knowing. (Surat al-Baqarah: 115)**
>
> **What is in the heavens and in the earth belongs to Allah. Allah encom-**

passes all things. (Surat an-Nisa: 126)

When We said to you, "Surely your Lord encompasses the people with His knowledge." (Surat al-Isra: 60)

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)

Allah encompasses you from your front, back, right, left, that is, from every direction; He Who is witness to your every moment, everywhere, is totally in control of your inside and outside, and is nearer to you than your jugular vein is Allah, the Almighty, alone.

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)

NOTES

1. *Bilim ve Teknik Dergisi* (Journal of Science and Technics), March 1985, p.23
2. Jillyn Smith, *Sense and Sensibilities*, Willey Science Edition, p. 60-61
3. F.Press, R. Siever, *Earth*, New York:W.H.Freeman, 1986, p.4
4. Michael Denton, *Nature's Destiny*, The Free Press, 1998, p.51
5. Ian M.Campbell, *Energy and Atmosphere*, London: Wiley, 1977, p.1-2
6. *Enyclopedia Britannica*, 1994, 15th ed. Vol.18, p.203
7. Michael Denton, *Nature's Destiny*, The Free Press, 1998, p.55
8. *Bilim ve Teknik Dergisi* (Journal of Science and Technics), No: 366, p.81
9. *Bilim ve Teknik Dergisi* (Journal of Science and Technics), October 1986, p.6
10. *Bilim Teknik Dergisi* (Journal of Science and Technics), October 1986, s.6-9
11. Franklyn Branley, *Color, From Rainbows to Lasers*, Thomas Y. Crowell Comp., New York, p.23-28
12. *Temel Britannica Ansiklopedisi*, Vol 7, p. 16
13. http://www.netxpress.com/~ppt/story.htm
14. http://www.netxpress.com/~ppt/story.htm
15. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.110
16. David Attenborough, *The Life of Birds*, Princeton University Press, New Jersey, 1998, p.263
17. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.22
18. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.52
19. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.20
20. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.38
21. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.71
22. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.77
23. Jill Bailey, *Mimicry and Camouflage*, BLA Publishing Ltd., England, 1988, p.17
24. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.85
25. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.25
26. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.38
27. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.48-49
28. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.43
29. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.86-87
30. *International Wildlife*, September-October 1992, p.34
31. Jill Bailey, *Mimicry and Camouflage*, BLA Publishing Ltd., England, 1988, p.18
32. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.109
33. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.64
34. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.130
35. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.129
36. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.126
37. David Attenborough, *The Trials of Life*, Princeton University Press, New Jersey p.235
38. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.109
39. David Attenborough, *The Life of Birds*, Princeton University Press, New Jersey, 1998, p.158
40. David Attenborough, *The Life of Birds*, Princeton University Press, New Jersey, 1998, p.158
41. Ranger Rick, May 1999
42. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.55
43. *National Geographic*, October 1989, p.518
44. *The Guinnes Enyclopedia of Living World*, 1992, p.167
45. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.56
46. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.122
47. Marco Ferrari, *Colors for Survival*, Barnes and Noble Books, New York, 1992, p.62
48. Karl Roessler, *Coral Kingdoms*, Harry N. Abrams, Inc., Publishers, 1986, p.44
49. *National Geographic*, December 1996, p.118-120
50. Karl Roessler, *Coral Kingdoms*, Harry N. Abrams, Inc., Publishers, 1986, p.125
51. Solomon, Berg, Martin, Villie, *Biology*, Saunders College Publishing, 1993, p.192-193
52. *Temel Britannica Ansiklopedisi*, Vol. 7, p.16
53. Franklyn Branley, *Color, From Rainbows to Lasers*, Thomas Y. Crowell Comp., New York, p.37
54. Franklyn Branley, *Color, From Rainbows to Lasers*, Thomas Y. Crowell Comp., New York, p.38
55. Francis Darwin, *Life and Letters*,Vol.II, p. 275
56. Francis Darwin, *Life and Letters*,Vol.II, p. 305
57. J. Hawkes, Nine Tentalizing Mysteries of Nature, *New York Times Magazine*, 1957, p.33
58. Cemal Yıldırım, *Evrim Kuramı ve Bağnazlık* (The Theory of Evolution and Bigotry), Bilgi Yayınevi, January 1989, p.108
59. Taşkın Tuna, *Uzayın Ötesi* (Beyond Space), p.194
60. *Treaties Concerning the Principle of Human Knowledge*, 1710, Works of George Berkeley, vol.1, ed.A. Fraser, Oxford, 1871
61. Macit Gökberk, *Felsefe Tarihi* (History of Philosophy), p.263