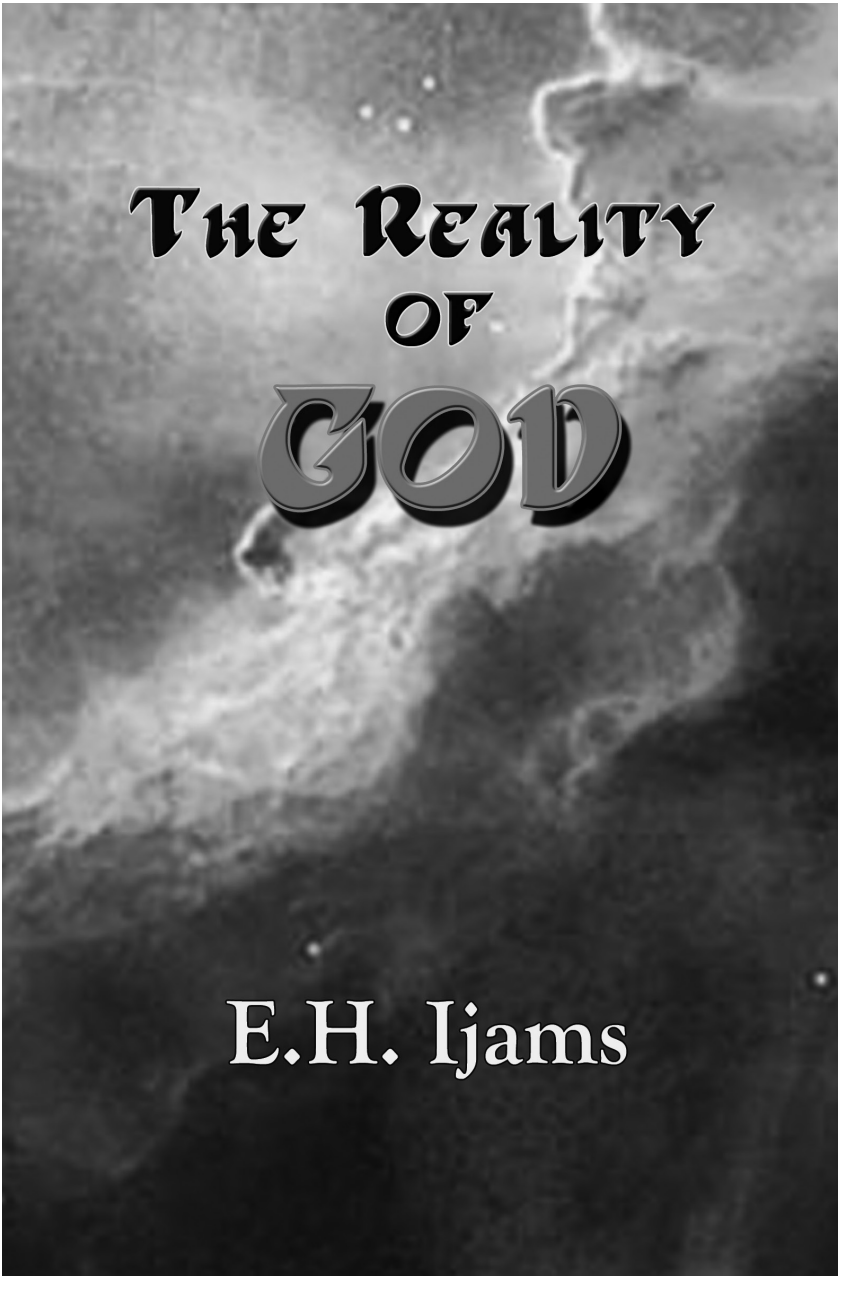
The Reality
of
God
E.H. Ijams

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Publisher's Statement

I was never privileged to meet brother Elvin H. Ijams, who lived from 1886 to 1982. I have read of his work, his great ability as a preacher and teacher, his love of truth, and his concern for the spread of the Gospel throughout the world. Without a doubt, his influence continues in the lives of many who knew and heard him.

My direct acquaintance with brother Ijams came through reading a book authored by him and printed in 1978, ***The Reality of God***. Even though at the time of my reading it was several years old, the message was compelling and relevant to the challenges in today's world. Believing the book to be out of print, we contacted brother Ijam's family — his grandson, Dr. David Ijams of Memphis, TN — and requested permission to reprint it.

Scientific details throughout the book offer convincing evidence of the existence and reality of God. The chapters dealing with Life in particular, and plant and animal life in general, are well done. But brother Ijams' thoughts concerning the supremacy of Christ, His glorious representation of God among mankind, and the continuing effect His life has had on the affairs of the world are powerfully written. ***The Reality of God*** is, in our opinion, a timeless book that needs to be kept in print, to convict and inspire present and future generations.

Betty (J.C.) Choate
Winona, MS
September 1, 2009

Foreword

This book is based on the premise that God is real, that He is a limitless, spiritual being, existing eternally as the One True God, infinite in knowledge, love and power.

As the central reality of all existence, God is to be served, adored and loved forever.

In the pages that follow we shall touch upon ten or more truths, evidences, revelations and inferences that singly or together provide strong bases for a sustaining faith in God's endless glory.

Not everyone professing belief in God has a rationally-based concept of divine reality. But weak faith is not due to lack of credible, intellectual data. By study and investigation, plus honesty of motive, New Testament theism becomes highly irrefutable.

By reason of "evidence of things not seen" (Hebrews 11:1) we believe God is real; that He is "Immanent" — which means He is "in the world, or universe". In addition, we believe God is "Transcendent" in relation to the universe — which is to say, "above and beyond" all physical boundaries.

In brief, these views express the thesis of the chapters that follow.

In closing this prefatory statement, I call attention to a few facts that not only reflect God's greatness but also His unique involvement with man. Somehow people, knowingly or unknowingly, are closely involved with God and His created order (John 3:16; Acts 17:24-28).

Twentieth-century people think very highly of themselves. "We have walked on the moon," and done 'the impossible' along a number of lines. We seem to think that man no longer has any real need for God.

But the 8th Psalm tells us that our great potential capacity for power and glory is a gift from the eternal Father. This is what the Psalmist says God has done for man: *"Thou has made him but little lower than God, and crownest him with glory and honor. Thou makest him to have dominion over the works of Thy hands; Thou hast put all things under his feet"* (Psalm 8:5,6).

But man in this sense, so important to God and so highly privileged under the "King Eternal", is uniquely capable of immeasurable degradation. Man under God attains immeasurable blessedness. Against God,

man is destined to absolute ruin unless he makes a complete reversal of choice. It is noteworthy that neither in exaltation on the one hand, nor degradation on the other, is man ever beyond God's dominion and power.

In a word, under all circumstances, God is the greatest factor in the immediate and the ultimate things of man.

In the greatness of His love, God has perfected a way to remove the guilt of sins forever. That perfect system of salvation is the Gospel of Christ. As God in the beginning gave man the potential capacity to accept or refuse the rule of his Creator, so He now offers eternal salvation in Christ. Not only is man given the ability to accept salvation but also the potential of achieving it. According to the last chapter of the Bible, *"whosoever will"* may take the *"water of life freely"* (Revelation 22:17).

Since the first condition attached to this universal offer of life is "faith", and since the main condition of the offer is "penitent faith", I believe the first and the greatest duty for Christians involved in evangelism is to make God and the New Testament Gospel known to twentieth century masses. Also, in view of the obvious dominance of materialistic atheism during this century, the first necessity in revitalizing Christianity is to begin and continue to proclaim the reality of God and to demonstrate the truth and power of His Gospel with fervent zeal.

E. H. Ijams

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Section One

God and Man: What Will Be "History's" Verdict?

When future historians come to characterize and evaluate the 20th century, what will they say? Will they point to its material greatness and its technological miracles as its greatest distinction? Will they hail it as the century when mankind made a breakthrough to a new and greater era?

Or will it be said that in spite of a great heritage and great opportunities, 20th century people took a suicidal road to faithlessness, license and decay? Will this be the century in which man lost himself? Or is it possible that man's loss of himself may yet be the most significant development of the 20th century?

The question is not wholly academic. Rising tension, crime, violence and moral illiteracy indicate that something very serious is happening to western people.

Chapter One
Introduction: God and Man: Humanity's Changeless Friend

"And Jehovah God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul" (Genesis 2:7).

"The eternal God is thy dwelling place, and underneath are the everlasting arms" (Deuteronomy 33:27).

"*Jehovah is my light and my salvation; whom shall I fear? Jehovah is the strength of my life; of whom shall I be afraid?"* (Psalm 27:1).

"...for in Him we live, and move and have our being" (Acts 17:28).

"...I am the first, and I am the last; and besides Me there is no God" (Isaiah 44:6).

The First and the Last

The scriptural texts above are typical of the hundreds of others in which Biblical writers so constantly expressed a positive, unequivocal, uncompromising certainty that God is changelessly real. Those who penned the books of the Bible had a way of speaking that amounts to a strong affirmation of God's existence. Though nearly every Biblical reference to God is indirectly an affirmation of His existence, it was never done to argue the point. God was an absolute fact to the men who wrote the Bible. They never argued the question of God's existence, because to them there was apparently no such question. To those who spoke by inspiration He was the central of all facts, the one absolute certainty!

In two places the Bible seems to say that God is "self-existent" (John 5:28; Exodus 3:13-15).

There is a sense in which God needs no proof, and there is a sense in which God, as a Spirit, cannot be legalistically proved. As an Infinite Spiritual Person He cannot be put on exhibition before finite people of limited physical sensibilities.

One theologian puts it like this: "What we mean by the proof of God's existence is simply that there are necessary acts of thought by which we

rise from the finite to the infinite, from the caused to the uncaused, from the contingent to the necessary, from the reason involved in the structure of the universe to a universal and eternal reason, which is the ground of all, from morality in conscience to a moral Lawgiver and Judge. Religion was not produced by legalistic proofs of God's existence.

If God is what His sublime attributes indicate, it means He is the Supreme Fact of all existence. As maker and ruler of the universe, He takes priority over every other reality. Existence is clearly unique because God is the heart and center of it. Since God is all-important, we would encourage every reader to be sure to give due heed to evidences of His existence. Faith is a must in man's relationship with God (Hebrews 11:6).

In a practical sense, the most important thing for the individual is to establish a right attitude and relationship to the God of all goodness and power. Achieving a right relationship can be accomplished with the Father's gracious help. *"Let the wicked forsake his way, and the unrighteous man his thoughts; and let him return unto Jehovah, and He will have mercy upon him; and to our God, for He will abundantly pardon"* (Isaiah 55:7).

This book seeks to stress evidences of God's existence and His infinite and eternal greatness. But the most important thing for each of us is to put God and His kingdom first in our lives. The key thing in the relationship of God and His people must be love. *"God is love"* (1 John 4:8) and He loves us. We should love Him. In fact, Jesus said that the greatest commandment is that we should love God with all our hearts, with all our souls and with all our minds (Matthew 22:37).

God is self-existent: He *"has life in Himself";* and, as affirmed earlier, that means He was not "made". He owes His existence to no being or power other than Himself.

God is the "Uncaused Cause" of all that belongs to the universe, of order, system and truth. As an Eternal Spirit, He fills the universe with His presence. God is infinite, invisible, and immortal, a spiritual personality (John 4:24).

Nothing else that exists is like God, except Himself. Nothing in the universe can ever be like God, except members of the Godhead — the Father, Son and Holy Spirit.

God Is Revealed in the Bible

The God of whom we write in this volume is the God who speaks to humanity through the inspired writers of the Bible.

In the books of the Old and New Testament, God is not revealed completely but to a marvelous extent. Over and over His greatness and glory are declared, and His goodness and love are demonstrated. Twenty or more attributes of perfection are ascribed to God by Bible writers, men who wrote as they were moved by the Holy Spirit (2 Peter 1:21).

Therefore, when we speak here of God, whether reference be to the evidences of God, to God's love, to His justice, or to His mercy, it is the perfect God of the scriptures of whom we are thinking.

He is the God who "is" and is eternally and inconceivably great. He is indeed the first and the last (Isaiah 44:6).

The Importance of God's Nature and Presence

As we have already mentioned, God is not only a fact, He is the Supreme Fact.

If God exists at all — and we believe He does — He exists everywhere; and that means He is here on earth, and yonder with the distant stars. Yet He is always closer to us than anything else, for *"in Him we live and move, and have our being"* (Acts 17:28).

God has been humanity's help in ages past. He is mankind's greatest hope for the years ahead.

God needs nothing that human beings can give Him. He needs nothing any principality or power can give. God seeks to bless and to help the people He has created to become what they were made capable of becoming.

God is man's opportunity. In a special way God loves the human race. He created people in His own image to share to some degree in His perfections. He is our greatest friend.

In view of this fact it is wisdom, is is not, to show love and loyalty to our truest friend and greatest benefactor? We urge diligent study of the evidences of God's reality; but we beg you not to stop with just believing that God is. Having made sure of God's immanence, *do* something about His nearness and goodness. Call upon Him for counsel and guidance. Take every problem to Him through Christ and the church.

Attributes of Infinite Personality

The Bible writers name more than twenty great attributes which characterize the infinite Personal Being we speak of as God. We shall notice twelve of these, those most easily understood and which most clearly reflect the measureless fitness of God to be a blessing to humanity. God is described as eternal, immortal, invisible. He is also described as omniscient, omnipotent, omnipresent. The Bible further declares that God is good, holy, righteous, and faithful. One all-important fact is this: God is a spiritual being. And above all, God is love. As a being whose very nature is love, He lives to bless; and in the long run, to make truth and goodness forever victorious in His boundless domain.

With these attributes, God is not only the Supreme Being, but the infinite, loving, heavenly Father, able to make all things work together for good according to His purpose (Romans 8:28). He is able to do far more for us than we are able even to ask or think. The sentences quoted at the head of this chapter use terms that mean that God is a living, spiritual presence who pervades all existence, including human bodies. This all-pervading spirit or presence puts Him in touch with every part and process of the universe. Nothing that requires power is too hard for God; and nothing is too far off for Him to reach, nor is anything too small to be governed by His laws.

God Is Perfect in Quality

Some of us believe that the God of the Bible is not only the greatest fact of all existence. He is, we think, the highest form of reality, the most energizing, the ultimate essence, the absolute perfect form of infinity, encompassing life, mind, love and spirit. As regards the perfection of God's being, nothing is lacking; and as regards His creative power, *"With God, all things are possible"* (Matthew 19:26).

Illimitable...Inconceivable... Indescribable

These descriptive terms from Adam Clarke about the breathtaking greatness of God's infinity will serve, we hope, both to increase reverence for the Lord Eternal, and to put us in a mood to think more understandingly of ourselves as representatives of mankind, the highest creation of God.

Speaking of the Divine Being, Clarke describes Him as illimitable in His immensity, inconceivable in His mode of existence, and indescribable in His essence; known fully only to Himself, because an infinite mind can

be comprehended only by Himself.

Humanity's Difficulties and Potentialities

Man, another name for humanity, is the greatest thing in the world. Earth's inhabitants need to think of themselves not only as great literally and potentially, but also as highly unique — possibly the most unique beings in all reality — except God. People are complex personalities, combining factors that are physical, psychic, and spiritual. Individuals also combine, in the same body, functions that are biological, psychological, sociological, moral and religious. We have conflicts, frictions, fears and illnesses within ourselves; we experience cruelties, perils, foes and powers without. No level of human society has ever been wholly free for long from lawlessness and decline. Man struggles to climb to what he believes are more satisfying things; but as he climbs, sooner or later, he slips, falters, loses his grip, misses the way — and too often — goes down for keeps.

Why? The trouble seems inherent in part in man's own nature. Human proneness to self-defeat is rooted in large part in what he thinks and feels, especially in what he thinks and feels about God. Instinctively, he wants to rise, be a power, and to be independent of God. Instead, this line of effort alienates him from God, and makes him his own enemy.

Always, since the loss of Eden, man has had problems; problems he alone has not been able to solve. One central problem never goes away. That great problem is — himself!

An Illusion of Mystery

Man's trouble is not that the causes of his self-defeat are wholly unknown. People generally know better than they do. It seems that, in yielding to perversity, the very desire to survive becomes impotent. Known controls and corrective disciplines are not applied. Again, why?

The strength of individuals and societies is built on strong incentives and even strong motives for self-disciplinary efforts. High endeavor is linked to high motivation. In other words, to hold in check the forces of decay and revolution, a strong sense of moral, religious and patriotic responsibility is necessary.

Extraordinary effort requires strong and durable motives.

People Need to be Under Authority

Men are not gods. Man was *"made a little lower than God"* (Psalm 8:5) and he has great potentialities; but he does not do well with too much independence.

People need an authoritative moral environment. Man needs a leader with inherent authority — "a senior partner", so to speak — someone over him, not as a tyrant to exploit him, but one with great wisdom and magnanimity, one with authority to veto and countermand the errant projects of man.

Man is at his best under firm, loving, righteous authority. Greatness is service, according to Jesus, not titles, pomp and self-exaltation. Christianity means denying one's self, taking up one's cross of duty and following the self-sacrificing example of Christ. Even though Jesus was the son of the Most High, He *"learned obedience by the things which he suffered"* (Hebrews 5:8).

The God that Man Needs

Man's primary spiritual need is not religion per se; not just some personal notion, theory, concept, idea or image which one can call "god". Humanity's great need is a religion that appeals to man's best, a religion that seeks to meet the deep-down moral and spiritual needs of people; a system that forbids all *"ungodliness and worldly lusts"* while commanding us to live *"soberly, righteously and godly in this world"* (Titus 2:12). People need a God who, while abundant in mercy and loving kindness, is also firm in judgment. The God we need will hold us responsible according to the measure of our capacities, opportunities and privileges.

In brief, Jehovah is the God we need. His religion involves and refines one's whole personality. It is aimed at transforming us from all that is shallow, selfish, brutish, envious and sinful. The New Testament makes it clear that the God of the Bible is deeply concerned about the inner lives of His people. Human character is shaped by the quality of our thoughts and motives. The real Gospel of Christ is designed to reach every area of personality.

This goal of developing, transforming and sanctifying our incentives and values is a process of quickening the conscience with the holiness of God; of feeding the mind with the truth of God; of purging the imagina-

tion with the beauty of God. It also includes opening the heart to the love of God; and aligning the human will with the purposes of God. Mankind needs God above everything else.

Beings of Opposite Possibilities

Unquestionably, the human family is inestimably important to the purposes of God. The Creator made man capable of a choice, with enough freedom of will to choose to obey or disobey his Maker. Notice Deuteronomy 30:19,20, which says in part *"...I have set before thee life and death, the blessing and the curse: therefore, choose life, that thou mayest live, thou and thy seed..."*

The Israelites used their choice to reject the offer of *"life and good"* in favor of *"death and evil"* (Deuteronomy 30:15). Man is here revealed as a dual being, a "contradiction" of opposites. He is capable of becoming very wicked, and has proved it in every generation. People are also capable of receiving good, and of becoming very, very great under God. And a minority of persons in each generation has proved humanity's capacity for greatness with God's help. Because God is a God of mercy and love, people of all nations and races are still free to choose life and good, greatness and glory.

New Testament Christianity is the God-prepared channel through which the greatness and excellence of God flows into human personalities.

If God Were Not

To realize to a degree how unutterably important is the fact that God is in His universe immanently, and yet rules over it transcendently, try to think of what the situation would be without God in the universe. Think of what might be if God had never been. A universe of matter, energy, space, gravity and time might conceivably exist; but with no living, eternal Personality, how could mind, or values become real or functional? How could there be "persons" with "personality" at some point in the chain of origins? And what about righteousness, truth, beauty — without God?

Without beings with intellect, emotion and volition, it seems the universe could hardly be more than a ruthless, meaningless, material structure, doomed at last to extinction.

Though it is practically infinite in extent, and mysterious in many

respects, the universe is often "explained" as a product of chance. But the effort to explain the universe by laws of chance is mathematically infinitesimal — in other words, "incalculably small", "practically impossible".

Existence without God would no doubt be meaningless. Even on the earth, life in particular might not be worth living without God. The Psalmist was probably thinking of that when he said, *"Bless the Lord, O my soul, and forget not all His benefits"* (Psalm 103:1,2).

How fortunate — that God *is!*

If God is real, humanity is not alone in a trackless universe. What about other conscious beings in the universe? Are there beings "out there", remotely like us, on other planets in our galaxy or in other galaxies? No one knows at this time. Even so, if there are no other intelligent social creatures in all existence, we are not alone if God is here, there, and everywhere. The writer of the 139th Psalm declared it beautifully. Speaking as to God, he asks, *"Whither shall I go from thy Spirit, or whither shall I flee from thy presence? If I ascend to heaven thou art there! If I make my bed in Sheol, thou art there! If I take the wings of the morning and dwell in the uttermost parts of the sea, even there thy hand shall lead me, and thy right hand shall hold me..."* (Psalm 139:7-10).

What is he saying? He is saying that wherever we are in earthly or cosmic space, we need not be entirely alone. God is there as well as here, closer than our hands and feet to ourselves.

How fortunate that God is, and that when God is with us we need never lack for loving fellowship!

"They Made Light Of It"

On a previous page we have expressed the opinion that it would be good for everyone to establish a functioning relationship with the God of the Bible. Such a relationship would mean doing God's will as that will is revealed in the New Testament.

But what could be better than doing just that — accepting God's will?

If sincere respect and obedience toward God are prudent and beneficial, then disrespect, contempt, and disobedience toward God must be foolish and hurtful — often beyond measure.

This is the teaching of Jesus in one of His greatest and most reveal-

ing parables. Nothing else in the New Testament so clearly unveils the tragedy of the needless resentment against God and His goodness. Here is the parable of human perversity and its cost: *"The kingdom of heaven is likened unto a certain king, who made a marriage feast for his son, and sent forth his servants to call them that were bidden to the marriage feast; and they would not come; again he sent forth other servants, saying, Tell them that are bidden, Behold, I have made ready my dinner; my oxen and my fatlings are killed, and all things are ready; come to the marriage feast"* (Matthew 22:2-4).

"But they made light of it, and went their ways, one to his own farm, another to his merchandise; and the rest laid hold of his servants, and treated them shamefully, and killed them" (Matthew 22:5,6).

"But the king was wroth; and he sent his armies, and destroyed those murderers, and burned their city. Then saith he to his servants, The wedding is ready, but they that were bidden were not worthy. Go ye therefore unto the partings of the highways, and as many as ye shall find, bid to the marriage feast. And those servants went out into the highways, and gathered together all as many as they found, both bad and good: and the wedding was filled with guests" (Matthew 22:7-10).

Those people in the parable who ignored the royal wedding feast seem to have overlooked at least one great truth, namely: no man or combination of men ever really defeats, humiliates or embarrasses the Lord Almighty. As in the parable, the feast went on and the house was filled with guests. So, even now — and for the last 2000 years — God's power prevails, His actions bear fruit, His blessings continue to flow; and His holy purposes move toward an eternal consummation. God's enemies find themselves at a loss in every show-down; while in the end, God and His followers continue to succeed.

So this parable with its symbolism and context sheds bright light on man's perversity toward God. The real meaning of the parable concerns foolish resentment to God's love and kindness. There are people who find the abundance of God's grace and goodness irritating and offensive. For this they blame God rather than themselves. In this parable we see their impropriety, starting as a combination of hypocrisy and contempt, become a monstrous stupidity as well as a real insult.

The "King" of Jesus' parable is God. The "Son" in whose honor the feast was given is Christ, the world's God-sent Savior. The "feast" clearly

represent the priceless truths, graces, powers and blessings which redeem mankind through the gospel of Christ (John 3:16,17).

Human beings are dual personalities. They are, in part, dust of the earth and, in part, breathed-in spirit (Genesis 2:7). They are part animal — real brutes, in certain cases — and, potentially, part saints. When man attempts to live in opposition to God, his animal nature (baser self) is likely to dominate his whole being. When "the flesh" controls one's life, that life can sink to any downward level of depravity.

It is a monstrous evil that causes one to despise the grace of God and to resent His goodness. The consequences can exceed comprehension (Matthew 22:1-14; Luke 14:16-24).

The Universal Invitation: "Come"

On the last page of the Bible is a short paragraph consisting of one verse. This is its wording: *"And the Spirit and the bride say 'Come'. And he that heareth let him say 'Come' and he that is athirst let him come; he that will, let him take the water of life freely."*

This is possibly the most significant invitation ever spoken to humanity. It is the last invitation of the Holy Scriptures. It is based on all that precedes it in the Bible; it is conditioned by all the revelations, all the instructions, commands and promises that illumine the background of this glorious, universal invitation.

Notice it — from the heart of heaven comes a loving invitation. It is spoken first by *the Spirit;* next by *the bride;* thirdly by *him who heareth.* The unrestricted message of love consists of one word — Come. That is followed by the names of two groups of the invited — those who *thirst* and those who *will.*

"The Spirit" here named is the Holy Spirit, member of the Godhead and therefore equal with the Father and the Son in Deity. The *"bride"* almost certainly represents the hosts of God's redeemed and faithful people from past ages. *"Him that heareth"* refers to all who have heard or read the word of God and understand what it means. And *"he that is athirst"* is clearly those who feel the need of salvation and want to be delivered from the power of death.

God wants human beings to be eternally successful. He is man's greatest friend and is always ready to bless every righteous endeavor.

Therefore, if you have problems, difficulties, aspirations or needs, the first step toward a solution is "Come to God: Come" and never cease coming to man's Supreme Friend.

Annotations

"Man, the Mystery"

After more than fifty centuries of opportunity to get acquainted with himself, man remains a marvelous, highly unique, very important, little-known being. His peculiar nature as a person is as yet inexplicable, scientifically. Though fairly well described from certain viewpoints, man is still little known in the sense of what he is, why he is, and what he can become.

The greatest thing on earth for several thousand years, man may now be in process of becoming a threat to his own survival and advancement. In certain respects the human trend in this century has been ominous. Man has been gaining the world but losing control of himself. He is not benefitted in gaining the material world if in the process he loses himself as a person.

When people lose themselves inwardly they are in line to lose everything outwardly.

Answers Needed

A brilliant French scientist, Leconte du Nouy, has stressed the fact that the materialistic axioms and tools which serve fairly well to explain inanimate reality are wholly inadequate to explain life and personality. This is to say that matter and mechanics alone can never account for man, the person.

It is well, therefore, to seek better answers to basic human questions than those generally given at this time.

Section Two

Facts, Axioms, Inferences That Imply Deity; Personality — Its Worth

One order of beings on the earth hold dominion over all other orders. The ruling group rules not because of overwhelming numbers or irresistible strength, but because its members are thinking, tool-making, power-using, imaginative, peculiar, free-choosing beings. Uniquely and fundamentally, they are persons.

As personal beings, people dominate the world in a large part by free choice. Some choose to act constructively, cooperatively, peaceably. Others choose to do the opposite.

This suggests the possibility that "personality," good or bad, represents the ultimate dynamic of existence.

Is there anything comparable to personality? Or anything greater on human levels than that of being a godly person?

Chapter Two
The Importance of Being Persons

"What is man, that thou art mindful of him?
And the son of man, that thou visitest him?
For thou hast made him but little lower than God
and crownest him with glory and honor.
Thou makest him to have dominion over the works of thy hands;
Thou hast put all things under his feet" (Psalm 8:4-6, ASV).

The Inward Image

Anyone willing to scan the unnumbered realities of existence with a view to finding evidence of God can find it speedily. The interested seeker will not need to go here or there to begin his quest, or to discover significant data. One of the greatest evidences of God is man himself — any normal person.

The unique distinction that sets human beings apart from all the other living things of earth — "personality" — is not a biological, but a divine imprint.

Personality could not have come from the lower orders of life or from supposed pre-human evolutionary ancestors. As a unique potentiality for knowledge, affection and volition, personality gives man an immeasurable superiority over the highest animal species. The ultimate capacity of "persons" for knowledge, consciousness, feeling, and power of will has never been fully measured. For all we know, it is boundless.

Personality — a combination of rationality, emotional capacity, and power of choice — is God-like. In man it is a rare, peculiar integration of matter, life, mind and spirit which bears the "image" of deity — some likeness of God. It is as a "person" — a being with the powers of personality — that man parts company with the animal world, or yields to "the mind of the flesh." God created man "in his own image, in the image of God created he him" (Genesis 1:27).

The Physical, Psychic and Spiritual

In almost every characteristic of body, mind and spirit, persons are too great to be products of nothing greater than atomic matter and chemical mechanisms.

Consider yourself for a moment. In body you are a three-dimensional being, physically limited to one place at a time. By reason of mind, you are a four-dimensional being, able to go in thought to the remotest bounds of space while motionless on earth.

In mind, you can return from space to your immediate environment without moving. You can think of the sentence just read; or you can think of tomorrow, or of immortality. In all this, matter and mind are involved, and possibly something else — spirit.

In hundreds of ways the human body is an awesome mechanism, intricately structured, marvelously organized.

But the mind exceeds the body in intricacy. It is a psychic mystery. The inner workings of the conscious and subconscious powers have never been explained. Everyone has knowledge; but no one knows exactly how knowledge is acquired or how it is retained. Affection and appreciation — likes and dislikes — characterize every normal person; but no one knows for sure on what they depend.

As persons, we live on three levels — the physical, the mental and the spiritual. As persons we partake of the biological, psychic, spiritual and

possibly the unknown. The end result of this combination, "personality" is the greatest, most dynamic reality known to man.

Man's Origin and Survival As a Personal Being

"What is man that thou art mindful of him? And the son of man, that thou visitest him?" (Psalm 8:4).

The Psalmist's question is very suggestive. As to what man is, the Bible's teaching concerning him is this: Man is the crown of God's creation. He is the last and most God-like of all biological beings — the only such creature who can think about God, or even of itself.

Now, what is sufficient to account for the presence of such a personal being on this planet? From what source could come his vast and unique superiority over all other living things on the earth?

The writer believes that there is but one explanation of our existence as personal beings. We owe our personality, our distinctive qualities of intellect, emotion and power of will to an omniscient, invisible, personal Creator. It is our belief that the only personal inhabitants of the earth had to have a personal origin. The blunt logic of human existence is: "We 'are' because God 'is'."

Personality — Undeniable Evidence

The very fact of man's potential dignity and worth, is a very great reason for believing in the kind of God revealed in the Bible. This is true whether we consider man biologically, psychologically, spiritually or a combination of all three. Man's organic structures with their integrated functions, plus his ideas and ideals, are all too intelligently developed, organized and unified to be explained by any non-living, unguided process. Complex, highly integrated results cannot be products of chance. The mathematical laws of probability indicate that the production of a human body, of a normal mind — to say nothing about what we call spirit — by purely mechanical forces is infinitesimal. It just could not happen even once, much less through a hundred or a thousand generations.

Your Body Shows Evidence of God

Rather than try to talk of all the wonders and mysteries of the body, let us limit present attention to a few illustrations of physiological answers to functions which, in turn, are evidence of designing intelligence.

It is a matter of common knowledge that the human organism begins as a tiny unit of protoplasm called a cell. It is made up of the union of two cells, one from a male source and another from a female source. Even from the beginning, it is smaller than a pin head, but it is amazingly complex. It is composed of a substance called protoplasm, practically colorless, jelly-like, probably the most complex substance known to man. Protoplasm embodies something called the life principle. But this principle has never been isolated or known to be seen by human eyes.

Protoplasm, the physical basis of all biological life, has been observed and studied and analyzed as no other physical substance. Investigators know what it is chemically; they know what it is structurally; they also know what it can do, and the conditions under which it can do it; yet protoplasm itself remains the most mysterious material substance man has ever observed.

Objectively, the life of every individual person begins with this little speck of protoplasm. But the little speck is strangely alive. We shall not describe it, except to say that it contains forty-eight particles called "chromosomes." Visibly, the first thing that happens in this cell is that these 48 chromosomes divide down the middle, lengthwise, and become 96 — under what control or direction no one knows. The next thing that happens is that half of these chromosomes move to one extremity of the cell and half to the other — why? No one knows. The third visible happening in the cell is that it "pinches" itself apart between the two groups of chromosomes, becoming two cells instead of one, each having 48 chromosomes. These two cells then repeat the first process, becoming four cells. The four then become eight and the eight become 16, then 32, and so on, all identical in structure and in the chromosome numbers. This process continues until millions upon millions of cells have been formed.

The Mechanism of Heredity

The body of the fetus requires cells of many different forms and functions. There will have to be blood cells, nerve cells — also muscle, bone, skin and gland cells, to name a few. These must all come into existence in the right sequence of time and place.

How can these various cells, of just the right kind be caused to appear at just the right time?

The answer involves a very intricate, intelligently devised living mechanism which man did not imagine or design.

In the chromosomes of the cells there are "strings" of incredibly small beadlike bodies called "genes." These genes carry the "chromomeres" which control heredity as well as every structure and characteristic of the human body. According to Genesis 1, God designed all the living things which He had made to "bring forth after their kind, and it was so." The chromosomes, the genes, and the RNA and DNA mechanisms are marvelous beyond words. Since man did not devise them, and since human beings through thousands of years did not even know that such things existed, it is evident that a non-human intelligence provided the mechanism by which human beings reproduce after their kind.

That one tiny cell of protoplasmic matter, with which the individual body begins, eventually becomes the twenty-six thousand million cells which compose the organs of the complete, fully organized, functioning human body, through which the mind is to work and in which personality is to be manifest, is most remarkable.

That intricate, unified wonder called personality, involving body, mind and spirit, is not only one "miracle" but, in terms of organs, tissues, processes, powers and functions — many kinds of "miracles."

It has been aptly said that our bodies are not ourselves. They are physical structures made for our real selves. Each body belongs to its owner. It is the owner's privilege to respect the body and keep it habitable as long as possible.

The Skull and Its Contents

The human skull is a strong, dome shaped box of bones, pivoted at the top of the spinal column. Its obvious function is to protect the delicate structure of the brain. The human brain, housed for convenience and protection in the skull, is the computer-like control-center for the whole person.

Your brain is a highly convoluted mass, formed in two connected halves consisting of ten or twelve million nerve cells or neurons. These neurons are in communication with every other cell in the body. They are mysteriously capable of receiving and sending stimuli. They bring information or sensations to the central center. They carry back conscious or unconscious regulator orders. A single neuron, through its dendrites, or fibrils, is believed to be able to receive or send impulses to a quarter of a million other neurons.

Such facts indicate that the human brain is the most compact and efficient computer so far known. The average adult brain weighs a little

more than three pounds. But this three pounds of living matter regulates thousands of tissues, hundreds of organs, and scores of complicated functions which altogether involve 50 to 100 trillion cells. The convoluted, three-pound organs, housed in human skulls, are perhaps the most dynamic, highly organized, sensitive masses of matter in all the universe.

Since neither the skull, nor the brain with its outreaching nerves, was humanly conceived and designed, both must have come from some creative power beyond man. Can you think of a mindless, lifeless mass of matter being capable of taking three pounds of other matter and imbuing it with the life and consciousness and efficiency of the human brain? Since you are a person endowed with a brain which you did not design, do you think it is a possible "witness" for the existence of God?

The Body's Circulatory System

Since our bodies are so close at hand and so objectively real, should we take them for granted? Is it commendable to be willingly ignorant of their marvelous efficiency, or to be indifferent to their profound meaning?

Every one of the trillions of cells of your body has to be fed to live; and its waste products have to be eliminated if it is to survive. How is this ceaseless two-way system of delivering food and taking away toxic substances made possible? It is accomplished by the ceaseless flow of a peculiar living fluid called "blood." Through a closed system of tubes, blood flows near every body cell, leaving a supply of food material as it picks up the waste. That circulatory system of blood and tubes, plus the function they perform, is marvelous beyond words.

Blood in living tubes is kept flowing by a muscular pump called the heart. Not by a "piston," but by sharply contracting and expanding itself about 70 times a minute, day and night, year in and year out, this muscular "pump" keeps the life-giving blood flowing. At the rate of 70 contractions a minute, your heart beats nearly 40 million times in a year, maintaining a steady flow of blood through thousands of miles of hair-like tubes — capillaries.

Talk about efficiency, durability and intelligent design — don't forget living hearts!

Other Facts About the Human Body

Human beings can live only a few days without water. Our bodies are two-thirds water. We can live at most only a few weeks without food. Food supplies energy for bodily mechanisms as well as the material out of which the body builds and repairs cells.

In the intestinal tract food is digested, prepared for absorption into the blood stream and eventually for delivery to all body tissues. The very intricate process by which food becomes muscle, nerve, gland and brain is called "metabolism." This marvelous metabolic system transforms inorganic substances into living tissues through which mind and spirit can function. Changing inorganic substances into living tissues is almost creative.

Glands

While thinking of the many intricate realities represented by your body, don't forget the living chemical "factories" also present — factories called "glands." Glands are organs that make things — products precisely suited to the functions of the body.

For instance, the salivary glands make the saliva which lubricates the mouth and throat and aids digestion. The stomach has glands which make "gastric juice" and pepsin, which are essential to digestion. The pancreas and the liver likewise contribute products to metabolism.

While the liver is quite large, other glands, such as the thyroid, adrenal, pineal and pituitary are quite small. The stimulating or regulatory products which those small glands produce are secreted directly into the blood stream. Some produce as little as a teaspoonful of fluid in a lifetime. Endocrine secretions are the most powerful stimulants known.

From the glands of various animals men can assemble kindred products that are often useful to human beings. But man has not learned to make endocrine chemicals of the quality which your body makes. From the beginning, some creative intelligence beyond man has known how to make the glands that can make the potent products on which human life and health depend.

Who should you thank for the glands which make the organic chemicals which, in turn, give you health, vigor and sanity? Without these proper gland-made substances, anyone might be an imbecile.

The Greatest Thing in the World — Man

The human body is marvelously constructed and coordinated. But great as it is in intelligent design and function, the body is not man's greatest distinction.

The description just given of certain bodily "miracles" serve two purposes: first, to illustrate the evidence of creative intelligence behind all the physical characteristics of people; and second, to symbolize or objectify things far greater — the unseen complexities of mind and spirit. The objectivity of the physical basis of human personality may aid us in visualizing the far greater, more mystical things that enter into it — ideas, ideals, knowledge, emotion, will, and spirit.

The Greatest Thing in Man — Mind

Undoubtedly, man is the greatest of the living creatures of the earth. He continually does the improbable and the "impossible" — things he is not equipped naturally and physically to do.

For instance, people are not amphibious by nature. Without specially designed equipment, people cannot live on or under water. Yet man has overcome these aquatic limitations. He has designed, built — and all but perfected — commodious vessels, not only for sailing the surface of all water areas of the world, but for going submarine from continent to continent and from pole to pole. Able to swim only a few miles at most, man, an inventive "person," a being with mind, has become the world's greatest aquatic navigator.

Man, the conscious, thinking person, was born without wings. Limited to his natural powers alone, man could never fly. But, by using his mind, imagination and constructive genius, wingless man has developed complicated vehicles in which he out-flies all the winged creatures.

Man has good eyes but they are not in all respects equal to the eyes of many animals. In spite of his comparative handicap, man has seen what animal eyes have never seen — the small things revealed by the microscope. Man, the person, by power of mind and skill, enlarges his vision beyond all other seeing creatures. Man alone, of all biological organisms, has invented the hardware by which he can watch from one side of the world selected happenings on the other side. The mysterious powers of mind give him this creative endowment.

The biological person is intelligently equipped and marvelously adjusted. The mental person, less visibly endowed and comprehensible,

is immeasurably greater in complexity and potentialities.

The Greatest Thing About Mind Is Spirit

Somewhere, somehow, there enters into personality something in addition to the biological and the mental — something that goes beyond physiological energy, beyond thinking in the abstract sense or in perfecting inventions.

Something more than awareness, or consciousness, enters into the inner world of personality — something vastly potential. It may be a new desire, a great impulse, possibly a blind hate, or consuming greed. It may be something very different — a consciousness of the vanity of the endless race for inventions, machines, affluence — a realization of the inestimable greatness of moral and spiritual values and of things holy and eternal.

A feeling of the greatness of personality comes home to the thinking person — a conviction of things greater and better than power, affluence, eminence — better even than the intellectual mind.

Humility, discipline, self-denial, love, stand out as unutterably more important than mental thrills, pride, ease, or complacency.

Thus something greater than physical life, greater than mind — great as they are — which enters into personality and becomes the central factor in shaping history and destiny, is spirit.

The materialist and the atheist have no adequate explanation for personality. If it developed by chance out of mindless matter, that is a miracle. If personality is from God, they are still at a loss, for they say there is no God.

In the meantime, billions of persons are here, and every person is a living *evidence of God.*

Annotations

From the Mind of Socrates

"Consider, my Aristodemus, that the soul which resides in the body can govern it at pleasure: why, then, may not the soul of the universe, which pervades and animates every part of it, govern it in like manner? If thine eye hath the power to take in many objects and these placed at no small distance from it, marvel not if the eye of Deity can, at one glance, comprehend the whole. And as thou perceivest it not beyond thy ability to extend thy care, at the same time, to the concerns of Athens, Egypt, Sicily,

why thinkest thou, my Aristodemus, that the Providence of God may not easily extend itself through the whole universe?"

Socrates' Memorabilia, I,4.

A Philosophical Idea

"I think; therefore, I am a person. And I must have been brought into existence by a being at least as perfect as I am, for the fountain cannot rise higher than the source."

— Descartes

Contextual Readings:

"The Case for Christianity", C. S. Lewis, The Macmillan Company. This is a little book of unusual merit, showing that Christianity is not only true, but an all-important, ennobling force in the life of the world.

"Man Does Not Stand Alone", A. Cressy Morrison, Fleming H. Revell Company, chapters I-IV. A book of 17 chapters but only 107 pages, all of them more than usually interesting and highly significant to modern man. The first four chapters have special relevance for those interested in man as a person.

"The Meaning of Things", J. A. Huffman, The Higley Press, Butler, Indiana. See chapter II for a suggestive discourse on "The Meaning of Man."

A Cosmic Oddity

A mere speck in the immensity of cosmic space — that is our world. Still, it is surprisingly unique. It is the abode of a great variety of living things, including man. So far as we know, it is the only sphere in all the universe where biological life is possible. It is possible on the earth because certain conditions, which do not *have* to be, exist here.

The mathematical probability that these conditions could happen by chance is practically zero. That they did happen, yet not of necessity, suggests that the earth was designed as an abode for living things.

If the earth shows intelligent design, is it unreasonable to believe it had an Intelligent Designer?

Chapter Three

A Planet Uniquely Favorable For Living Things

So far as any one knows, the earth is absolutely unique in at least one respect.

It is inhabited by human beings, and by countless other organisms representing possibly two million species. This is not known to be true of any other planet in all the universe.

In this respect, the earth is a highly successful, going concern. It not only has many thriving species now; it has had them a long time, and is apparently capable of perpetuating plant and animal families indefinitely.

In view of the above facts, this uniqueness of the earth seems to be by intent and not because of a mindless dance of atoms alone.

The Earth is Unique in Size

In size, the earth is relatively quite small. Strange though it be, our little world is amazingly equipped to sustain and to perpetuate biological creatures. But stranger still, it has these essential things in the right form, in favorable proportions, and in adequate supply.

The earth's complex, interlocking, life-sustaining processes really work. But no definite signs of the several necessary conditions suited to the existence of life has been found anywhere except on the earth.

This is an outstanding truth not to be taken lightly. The fact that the earth has all necessary factors for physical life suggests that we have here a combination of favorable forces, circumstances, materials, and dimension that could not have been accidental.

That so many factors and forces came together so "fortunately" for life on the earth; and that these many things continue to function so perfectly to maintain life in such abundance, are facts to ponder with reverence. While it is conceivable that life in some form is possible in other systems of the "milky way," nothing is known of its existence, certainly not in our solar system.

Since life is precious to us, it is an inestimable privilege to live in our world. Earthly existence is real, not a theory; it is an amazing fact. And nothing connected with the characteristics of the earth, its motions, its processes — or anything else — necessitates the conclusion that it is only a meaningless, useless "accident." Everything so far observed in the workings of our physical world indicates intelligent adjustments favoring that mysterious value we call life.

The Earth Has Favorable Shape

Fortunately for its living organisms, the earth is a sphere. As a sphere, it has the shape which gives the maximum volume in relation to surface. Also, as a sphere, its gravitational "pull" is equal at sea level at all points on the surface. Its spherical shape is also conducive to the best distribution of light and heat from the sun. Its form is, therefore, a highly favorable characteristic for a moving, rotating body which is the home of living organisms requiring controlled temperatures and safe quantities of light and energy which come from a distant star, the sun.

The earth also is of a very favorable size, considering the delicate balance of the varied conditions necessary to physical life. The earth's diameter in round numbers is 8,000 miles. If the diameter was only half of what it is — 4,000 miles — the earth would be greatly changed. The resulting gravity change might not be strong enough to hold the ocean of air on the earth. Gravity might not even be sufficient to hold our abundance of water on the earth. Under a weakened measure of gravity, water as vapor could drift away into space. Such a loss of air and water would alone be fatal to most forms of life on the earth; it would also expose all living things to deadly radiations from the sun and from outer space.

On the other hand, if the earth were 16,000 miles in diameter, its surface would be four times greater than at present; and if the earth's density remained the same, gravity would be doubled and air pressure would also be doubled (from 15 pounds per square inch to 30 pounds).

It is very fortunate for living things that the earth's gravitational force is neither too little nor too much. It is also fortunate that earthly temperatures be neither too high or too low. It is a sign of intelligence that nature's temperatures are closely and efficiently controlled within safe limits.

It is obvious, then, that the shape and size of the earth play a vital role in maintaining favorable temperature and gravity levels — levels good for the physical and mental life of man. That happy circumstance looks like a thing of purposeful design rather than like a blind accident of chance. And where there is design there is usually a Designer.

Right Distance From the Sun

In addition to the good fortune of the earth's favorable shape and size is the fact that it revolves around the sun at an advantageous distance.

Astrophysicists know that if the earth were removed to twice its present distance from the sun, the heat received would be reduced to only one-fourth of the present amount. This reduction in energy received would cause much of the earth's surface to freeze; and it would quadruple the length of the year, which in turn, we are told, would double the length of the winters, if orbital velocity remained the same.

The Earth's Motions are Favorable for Life

Another thing to notice about life on the earth is its relationship to the earth's movements. The most obvious motion of the earth is that which gives us day and night — its axis rotation.

This axis rotation is amazingly uniform. However, in temperate and frigid zones, we notice a great variation in the hours of light and darkness, according to the seasons. This variation is due to another condition that does not "have to be" — the obliquity of the earth's axis to the plane of its orbit. The axis always slants, or "leans," so to speak, in the same direction. The obliquity of the axis is unexplained. No one knows why it should slant at all, or why the obliquity should be twenty-three and a half (almost) degrees, rather than some other number. But the effect is unquestionably favorable, in that it gives us the seasons of the temperate and frigid zones. These changes seem to contribute greatly to human health and energy; and through these, to human intellect and civilization.

The other most notable motion of the earth, imperceptible to our senses, is its annual circuit around the sun. On this orbital path it moves at a speed of more than a thousand miles per minute, more than sixty thousand miles an hour. The speed of this movement, which never varies, coupled with the axis obliquity, determine the length of our seasons. Apparently, our summers and winters are advantageously timed as to length. The growth and maturing of food crops balance well with the length of our seasons.

Rotation, as we have said, determines the length of day and night. Suppose this rotation took place in 12 hours, what would be the effect of having six hours of light and six hours of darkness on the average? If the rotation time were slowed down from 24 hours to 48, what then? What about the heat problem of 24 hour summer days? And 24 hour winter nights? The intense heat and drought could be such as neither plants, animals nor man could long survive. The 24 hour nights in winter would produce low temperatures which few, if any, creatures would survive.

It appears that nearly all existing effects of the highly adjusted world we now have are favorable, helpful, for living things, specifically for human beings. This fact suggests "Intelligent Creation" — not blind chance — as the source of all good things.

The Fortunate Ratio of Land and Water

Another significant thing about our world is the ratio of land and water areas, to which must be added the arrangement of oceans and continents.

Water covers nearly 71 percent, almost three-fourths, of the earth's surface. In view of the fact that people are land dwellers, and that certain areas are over-crowded, and that food production is limited, our first feeling is that it would be better for humanity if we had larger continents and smaller oceans. But this view fails to take into account the effect of land and water areas on the unique habitability of the earth.

Ours is indeed the "watery" planet; there is no other like it in our solar system. Mercury, the planet nearest the sun, has no free water at all. It is so small that it lacks sufficient gravity to hold an atmosphere or gases such as water vapor. Any such gases have long since escaped into space, if they ever existed, leaving the planet as dry and lifeless as the moon.

In a surprising variety of ways, the properties of water — liquid water — seems almost to have been designed expressly to make the world hospitable to life.

It is highly significant that the earth is the only planet in our solar system having surface temperatures which permit water to exist in all three states — liquid, solid, and vapor. This favorable fixity of temperatures within narrow limits enables water to play a vast and vital role in supporting the continuing abode of living things on the earth.

It is to be further noted that, so far as we know, the earth is the only planet of the solar system which has oceans. Their combined immensity is highly significant. The total water area of the earth is close to 139,500,000 square miles. The average depth of oceans is said to be two and one-third miles. Multiplying the oceanic coverage of the earth by the average depth, reveals a water volume of nearly 330 million cubic miles.

Water's vital relationship to the other characteristics of the earth is indicated by this colossal volume. This vital relationship is confirmed by the fact that most of the living things on the earth are native to the sea, not to the land. The 330 cubic miles of ocean water swarms with far more kinds

of living things than does the 57 million square miles of land surface.

Other facts about the water that covers most of our earth are noteworthy. For instance, its absorption and release of heat. Land, under the sun's radiation, heats up much more rapidly than does the sea. Land also cools more rapidly than does the water. As a consequence, great land masses tend to become very hot during the long days of summer, and very cold during the long nights of winter.

On the other hand, water heats up slowly — more slowly than any other common form of matter. It thus absorbs more heat than anything else. And, when the process is reversed, it cools more slowly than anything else. The ocean, therefore, is the great temperature regulator of the earth. It does a remarkable job of stabilizing temperatures within limits that most forms of life can endure.

Apparently, it is a matter of design that the land and the water areas of the earth are roughly in the ratio of three to one. Many would say it serves a "purpose." Clearly, if it is "purposive," it implies far more than "chance."

Water is a Beneficent Mystery

Water is not as simple as it seems. As we have said, it is peculiar as respects heat. It is also very strikingly peculiar in that it expands in freezing. The general law for all substances is that volume decreases regularly as temperature goes down. That is the secret of the thermometer. We measure temperature by the volume, the "height" of the mercury, or other substance in the thermometer tube.

Water obeys this law until it reaches the freezing point. Then in becoming solid, as ice, it becomes lighter per volume, expanding with a very great force, bursting iron pipes, even great masses of rock, to accommodate its larger volume as ice.

Water not only expands in freezing, but in freezing it releases great quantities of latent heat. At low temperatures, water also absorbs great quantities of oxygen.

How shall we explain these and other very fortunate peculiarities of water? Shall we attribute them wholly to mechanics? Or, is it legitimate to believe that "Intelligence" underlies their existence and their value?

The Aerial Ocean Which Encloses the Earth

Thus far we have said very little about the deep ocean of air which

clings to the earth in spite of the "drag" created by the earth's thousand-miles-a-minute speed in its orbit around the sun.

In addition to being essential to life, the combination of gases which compose the air serves a number of important functions under the holding power of gravity.

Among several vital functions of the air is that of carrying water vapor from the oceans to the land areas. Without the atmosphere which transports water from ocean to the land, the earth would become a desert.

It is also good for all forms of life that the air stops — neutralizes — certain harmful radiations from the sun. It performs this function due to the presence of small quantities of just the right elements in the air.

Besides all of these fortunate facts of shape, size, distance, and motions, plus the intricately balanced adjustments of continuous life processes, there are other items which suggest the necessity of living Intelligence behind the fitness of the earth for life. One of these is the fact that the earth is rich in ores on or near the earth's surface where they can be recovered and fabricated into metal products essential to the civilization of man.

This, too, is inferentially more than a lucky stroke of chance.

Could it Happen Just by Chance?

With a minimum of words we have listed nine characteristics of our planet which, taken together, fit it for the unique mystery we call "Life." These independent characteristics that adapt the earth to be the continuing abode of living things are: its favorable shape, size, location (ninety-three million miles from the sun), its two favorable motions and orbital speed, its axis obliquity, and its land and water ratio. To these we must add the peculiarities of water, and the deep atmosphere with its blend of gases in just the right proportion. Finally, we noted the convenient presence of ores from which man derives the metals which distinguish human civilization.

The question is: How shall we explain the presence of all these independent factors on this one planet which fit it for the appearance of life on the plant, animal and human levels?

Some would say it all happened circumstantially, without plan or purpose, through natural, impersonal processes.

Our view is that neither "chance," "nature," nor "evolution" is suffi-

cient to explain the marvelous way in which the earth was prepared for the presence of life, and the life of man in particular.

That one of nine, or more, conditions favorable to the maintenance of life might appear of itself, is conceivable. That nine or ten favorable conditions could independently come together on one planet — and one only — is practically impossible, mathematically considered. In addition, the probability that after these factors came together, their coordination could be accomplished with such accuracy of function as to continue indefinitely, entirely apart from factors of mind, intelligence, or purpose, is beyond probability.

Since the probabilities of a structure like the earth coming into existence by chance alone are practically nil, we believe that "God created the earth and the heavens."

Since it seems even less reasonable to think of the endless cycles of living things on the earth as a product of matter and mechanics only, we believe that life at any level is a creation, or an evidence of God.

To illustrate the inadequacy of chance-mechanics to account for life, consider the fact that at every level life requires protein. The protein molecules, without which physical life does not exist, are exceedingly complex.

Perhaps one of the most revealing comments for the layman on the laws of probability in relation to formation of protein molecules is given by Lecomte du Nouy in his **Human Destiny**.

In chapter 3, the brilliant French scientist and philosopher declared that "chance alone cannot account for the birth of life." To back this statement he analyzed the calculations of Professor Charles Eugene Guye, mathematician of Switzerland. Applying the laws of mathematics to the probability of producing even one protein molecule by chance, Professor Guye shows that the chance is "infinitesimal" — so small as to be practically impossible. And we are to remember that protein is not life, just *one of the substances* on which life depends.

From these and many other confirmatory facts, Lecomte du Nouy concludes that neither scientists nor philosophers have bridged the gap between living and non-living matter — certainly not by laws of chance. His belief, based on facts and mathematical logic, is that it is impossible not only to explain the existence of life but also the existence of substances supporting life, by methods and hypotheses which are useful in

interpreting the inanimate world.

By analogy, all of this suggests that the earth itself is far too marvelous in complexity of structure and function to be explained by materialistic mechanics alone. As Sir James H. Jeans expressed it, the universe looks "more like a great thought than like a great machine" (**The Mysterious Universe**, page 137).

It can be inferred, therefore, that those who believe the world had a Creator have strong factual grounds for their faith. The earth shows objective signs of having been intelligently designed for the abode of living things, including man. We believe that the unseen Designer whose intelligence the earth reflects is "God," "Elohim" (Genesis 1:1).

The "invisible things of him (God) since the creation of the world are clearly seen, being perceived through the things that are made, even His everlasting power and divinity ..." (Romans 1:20).

Annotation

Opinions Mistaken for Facts

During the first 70 years of the twentieth century, the late Bertrand Russell has been high priest and prophet to the multiplying followers of materialism, scientism and atheism in the western world. His more than 40 books, mostly opposing conventional morals and religion, all support a radical, uncompromising materialism.

A concise expression of the Russell philosophy is found in one of his earlier books, "Mysticism and Logic." He there stated his belief, "That man (humanity) is the product of causes which had no prevision of the end they were achieving; that his origin, his growth, his hopes and fears, his loves and his beliefs are but the outcome of accidental collocations of atoms ... that all the labors of all the ages, all the devotion, all the inspiration, all the noonday brightness of human genius are destined to extinction in the vast death of the solar system ..." — **Mysticism and Logic**, chapter III.p.47).

In these words we have the very quintessence of humanism, materialism and atheism. We have also an ultra, inescapable, pessimism. Russell said in effect that existence is meaningless and purposeless. Fortunately, his views carry only the weight of individual opinion, not of proven truth. The Russell view is founded more on subjective factors than on unquestioned facts.

Contextual Readings

The Mysterious Universe, James H. Jeans, The Macmillan Company

"The universe begins to look more like a great thought than like a great machine" (p 137, 1948 edition). Though written in the 1920's Professor Jeans' book is still very much read. His most famous statement is that quoted above, comparing the universe to a thought rather than to a machine.

Behind the Dim Unknown, J. C. Monsma, editor — G. P. Putnam's Sons.

"The chapter by Frederick H. Giles entitled, "**The Answer to Astronomy's Enigma**." Professor Giles represents expert scholarship in the fields of physics and astronomy. The article here listed reflects advanced scholarship, but it is written for the average man rather than the specialist. He points out some limitations not always made clear to the layman.

How Great Was Its Cause?

The immensity of the universe is too great for words. Start where you may, it apparently goes out in every direction without limit. And everything in it seems to be in motion — every atom, every star, every galaxy, is moving. Still the universe appears to be one fabric — a cosmos, not a chaos.

Though it passes comprehension, this universe of limitless space, "shot through with energy," appears to have had a beginning. And the more we consider its emerging surprises, the more difficult it is to account for it solely by mechanistic self-creation.

Chapter Four

The Universe and a Question

"The heavens declare the glory of God and the firmament shows His handiwork" (Psalm 19:1).

Self-Evident Power and Divinity

The Apostle Paul enlarges this declaration somewhat in Romans 1:20. He declares that the *"invisible"* things of God, His *"everlasting power and divinity,"* though not seen directly, are reflected in the things that are made, that is, in the whole physical creation. On this basis, the apostle goes on to affirm that God's invisible presence and power are self-evident in the earth and in the universe. This visible evidence says the apostle, leaves the skeptics and stubborn doubters without excuse. Mistaking their unbelief for wisdom they forsook the majesty of God for the puerile worship of animal deities, says the apostle (Romans 1:21-23).

A Mysterious Universe

In the preceding chapter the earth was listed as one among the many things "made," hence one of the evidences of an intelligent, creative Power which we call "God." In this chapter we shall go beyond our world and beyond our solar system to consider the universe itself as evidence of God's existence.

There is nothing so majestically grand as the cosmic world. This is true respecting what we can see with the unaided eye. It passes the power of words when the depths of space are probed with powerful telescopic instruments now available.

Man has always been attracted to the starry skies. Unceasing probings from century to century, though they enable man to look ever deeper into space, have revealed no "edge" or boundary, to the universe. No sign of an end, or any limit has been detected — in any direction. For this reason men are compelled against their wishes to assume that the universe is "boundless," though they still consider it "finite."

In the unbounded space that surrounds us, there are probably trillions and trillions of stars or glowing suns. These suns may be surrounded by other trillions of planets which are invisible. These trillions and trillions

of burning suns appear to be grouped or organized into billions of separate systems or galaxies. In its spaciousness, in the countless bodies it includes, the universe is far too great for words or for comprehension. Its immensity is overwhelming.

But that is not all. In this limitless space, every galaxy, every star, every planet appears to be moving. The universe is a process; it is in motion; it is an interlocking, working fabric. This fact adds tremendously to the mystery of its grandeur. From whence comes this limitless power that keeps everything, from the most gigantic sun to the simplest atom, in ceaseless motion?

Verily, the starry heavens do declare the glory of an inestimable "power." Human awareness of the glory, greatness and mystery of the universe has grown immensely during the last eighty years. In the 1890's, astronomers and physicists were pleased with their knowledge, and well-established concepts. Many were rather complacent, possibly without being aware of it. Then came a series of shocks. New discoveries revealed unsuspected mysteries that upset many old concepts. Thinking changed. In the late 1920's, Sir James H. Jeans published a book entitled "The Mysterious Universe." It became an answer to scientists who, up to that time, had not thought of the universe as notably mysterious. They had accepted it as axiomatic, that the basis of all material existence was "atoms" — small, indivisible, indestructible particles of matter. Atoms, they said, make up the chemical elements of the world. The chemical elements, in turn, combine to make up the molecules of all compound substances.

Matter assembled in great masses composes the earth, the sun and the numberless galaxies of outer space. All these, they said, became subject to natural laws, and moved accordingly. "It is very wonderful," they admitted. But since "we know its elements and workings, the universe is not necessarily mysterious."

That is just the news Jeans and others had for the complacent theories of the early 1900's. The universe— and even atoms— are quite mysterious.

It was shown in the early years of this century that atoms are not what men once thought— hard, indivisible, indestructible particles of matter. Even children can now tell you that atoms are composed of complex, electrical quanta called "protons," "electrons" and "neutrons."

But with all our fluent speech, atoms are still highly mysterious. No one knows why atoms exist or why their parts, electrons, neutrons or other components exist. No one knows why electrons revolve with incredible speed around the heavy proton nucleus.

Mystery has succeeded mystery since 1900. Scientific discoveries have revealed more mysteries than they have removed. Radioactive materials, unknown in 1890, are rather common now— but mysterious. Radiation of every kind is mysterious. Cosmic space confronts the theorist with questions he cannot answer. New mysteries appear as studies of the universe continue.

In the cosmos there are intricacy, power, and phenomena which are beyond explanation in terms of what scientists now know about nature and natural law.

The greatness, majesty and mystery of the universe grip the minds of all who take serious interest in the basic facts of existence. But despite a growing interest, and despite the new discoveries and great new tools with which the specialists work, man is as yet unable, by naturalistic premises, to fully account for the unbounded, integrated universe around us. Its mystery is increasingly baffling.

Description Must Not be Mistaken for Explanation

Space-ships, space-probes and moon landings show marvelous progress in learning the "how" of many things happening in space. But as yet man knows little about the "whys" behind electronic and gravitational processes. All theories as to the origin of atoms and the constant expansion of the universe, have to be accepted on faith.

Certain philosophers have assumed as a fact something they call "the uniformity of nature." On the basis of this supposed fact, they declare that the universe and all of its parts and processes can be accounted for by purely mindless, naturalistic forces.

Starting with the uniformity or naturalistic concept, several theories of the universe have been proposed. But it is reported that none of these fully accords with observed realities. Each fails at some point to fit the admitted phenomena. When it comes to the problem of why the universe is, and "why" it includes so many galaxies, and "why" the most distant ones all seem to move outward at ever-increasing speeds — there is yet hardly a theory, to say nothing of a dependable answer, from scientific sources.

As long as philosophers know little or nothing of the "why's" of the universe, we may be wise not to take present conclusions as final.

Established facts should be received with gratitude. The interpretations of facts are subject to error of many kinds, and should be accepted with caution.

All efforts to account for the universe by the mechanistic processes of nature carry a gloomy connotation. They compel the conclusion that the universe is either to go on forever without meaning or purpose, or that it is to end in a void of darkness and cold in which everything will be as though it had never been. These gloomy philosophical speculations among scientists indicate that certain good scientists may be rather poor philosophers.

The Psalmist who explained the universe as a manifestation of the glory of God, and an exhibition of his materialistic handiwork, was probably not only a better philosopher than most adherents of materialism or naturalism, but also probably a better scientist.

The universe exhibits many signs of having something rational behind it. As Sir James H. Jeans said, "...the universe begins to look more like a great thought than like a great machine." He explains his terminology by saying that the universe shows evidence of "a designing or controlling power" which is apparently more mental than mechanical.

In a figure more strikingly employed than that by Professor Jeans, Dr. Nathan H. Wood, former President of Gordon College of Theology and Missions, has stated the growing conviction that the universe shows evidence of a designing, controlling power which is not only more than mechanical but is clearly rational and personal.

In an unusual book entitled "The Secret of the Universe" and sub-titled "God, Man and Matter," Dr. Wood analyzes "The Equation of the Universe" in mathematical terms. By the logic of three conceivable equations, he affirms that the universe gives inferential evidence of design power that is rational and personal.

Dr. Wood called attention to something every observer admits, that the universe is vast beyond human comprehension. Then he added, "The cause of its vastness must at least be as great." That is his first equation: The Cause must equal or exceed the vastness.

Next, he mentioned the fact that the universe, "from the island universes quintillions of miles away, to the electrons whirling in the invisible

atom, is one immeasurably articulated, rationally working fabric," adding again that "the cause of it all must be at least equal the rationality."

His third point is that "the universe contains personal beings who think, who love, who hate, who hope, who fear, who choose, who determine." Equating cause and effect, he declares that "the cause of such beings, of a universe which contains such, must be at least as personal as they."

The overall conclusion is that "the equation of the universe is clear. A vast, rational, personal cause of the universe — God."

President Wood's reasoning is a good commentary, we believe, on the Apostle Paul's declaration that the "invisible things" of God "since the creation of the world are clearly seen, being perceived through the things that are made ..." (Romans 1:20).

The "things that are made" include not only the world, but also the universe and all things in it. The apostle's affirmation is that the wondrous vastness, harmony, power and order of the universe are a clear manifestation of God's presence, glory and divinity.

Some authorities object to the reasoning of Jesus, Wood, Paul, and others, that the universe must have had a Creator who, if not greater, is at least as great as the creation. They would say that the universe as a whole is too little known as yet to affirm that it had a "Cause," "a Creator," outside itself. By the same reasoning it is too little known as yet to say that it did *not* have a Cause or Creator. If moderns do not know enough to justify the belief that "God created the heavens and the earth," then certainly no one can affirm as a fact that the heavens and earth were not created, and that God does not exist. One would have to be omniscient to affirm as a fact that the universe is self-existent — not created.

One does not have to know everything about everything to have a reasonable faith that God exists. But to affirm with assurance that "There is no God" requires one to know everything, with nothing left out. Otherwise, that which one does not know might be the God he denies.

Neither believers nor skeptics know definitely what the endless space beyond us holds, or what it is as a whole. No one knows why the cosmic system is what it is. For instance, what is the little earth we have described? Could it be different from what it is? If so, why is it not different?

The questions serve to suggest how limited is our knowledge of the basic causes of existence, and how presumptuous it is to declare dogmatically that this or that does not exist, and that certain things cannot be. Man can believe much more than he can know.

Did the Universe Have a Beginning?

It is not our intention to deal at length with the scientific or philosophical problems of the universe. Books in great number are available to those interested. In addition, there is an endless succession of articles dealing with the news and the theories of astronomy, physics and mathematics. Our main purpose in this short chapter is to call attention to scientific evidence which thus far seems to establish the certainty that the universe had a beginning at a time "not infinitely remote."

Notice it: According to scientific facts, **the universe had a beginning.**

Scientists admit that there is conclusive evidence to that effect. Remember then, the axiomatic truth that nothing which has a true "beginning" begins of itself. What begins, whatever is truly new, begins because someone started it.

In the words of Aristotle, there has to be a "cause," a first, or "Prime Mover." In the case of the universe, this beginner according to our reasoning, had to be God. Nothing less than an Omnipotent Personality could begin the universe.

Most any sober minded, well informed person today is understandably slow to declare that the universe created itself, or that it has "always existed," without cause or beginning.

Certain scholarly people have said that it is just as easy to suppose the universe has always existed as to believe that God has always existed. This might appear convincing, except for one thing. A well-known scientific law makes untenable the idea that the universe is eternal. The scientific law which invalidates belief in the eternity of the universe is spoken of in two ways among scientists. To possibly the greater number, it is known as "the Second Law of Thermodynamics." It is also called the "Law of Entropy." This "law," by necessary inference, says that the universe could not have existed from eternity. The law of "entropy" states that everywhere there is a continuous flow of heat from warmer to colder bodies; and this flow cannot be reversed to pass spontaneously in

the opposite direction." In popular terminology, "entropy" means that the universe is "running down." "Entropy" describes the fact that available energy is being constantly used but not replaced. As a consequence, the universe will eventually reach a condition of having no more energy for use. In the language of Dr. Edward Luther Kessel, "The time is coming when there will be no more chemical or physical process, and life itself will cease to exist."

If the universe has existed from eternity and is "running down," it would have already come to a halt! The fact that it is still going indicates, therefore, that it has not existed forever.

The logic of the situation in the light of the law of entropy and other facts can be summarized as follows: first, we now have scientific evidence that the universe has not always existed. Second, the facts of science are increasingly favorable to a belief in a creation "at a fairly definite point in astronomical time, a creation which was supernatural because nature is a creation."

Of course it has been believed for centuries that there can be no "creation" without a "creator." The greatness of the creation — in this case, the unbounded physical universe — is an index to the greatness of an unseen Creator.

Unity in Spite of Complexity

Physicists describe the universe as unbelievably complex in its structure. Yet every part seems related to every other part. And the parts themselves are complex, mysterious. We are told that the internal vibrations of the smallest atom are as wonderful as the structures of the great stars. Every ray of light, every physical and chemical reaction, every characteristic of every living thing, is subject to an intricate system of laws which did not, we believe, make themselves. The more one learns about the universe, the more he is intrigued by its interlocking intricacy and harmony.

The universe, of course, is not God. It is physical. "God is a Spirit." But the universe implies the existence of God, even as a machine implies the existence of a mechanic. Every piece of engineering implies the existence of the engineer.

The universe, however, represents God only in part. It does not in a literal way prove God as its maker. Machines reveal their intricacies and their excellencies by their performances. But machines have no power

to go beyond themselves and present their inventors and builders to an inquiring spectator. In structure, the universe resembles a machine. It exhibits a greatness and an intelligence which imply the existence of a "Designer and Maker." But it has no power to go beyond itself and bring that invisible Designer before us in the glory of His being.

Rational Faith in God Is Based on Evidence and Revelation

We shall not attempt the impossible — that of making God manifest directly to human senses. God is *"eternal, immortal, invisible"* (1 Timothy 1:17). No man has seen or can see God in the literal, physical sense, according to the Apostle Paul (1 Timothy 6:16). But God is knowable. His evidence can be understood by reasonable inferences based on evidences. We believe that "God is," for reasons that are objective as well as psychological. Believers in God make reasonable inferences from admitted facts and axioms. For instance, the universe is a material reality, a physical system. There is no evidence for assuming it created itself. If it could create itself, it would itself be God. Since the universe is not God, we make the reasonable inference that it is a creation, and of necessity, had a Creator.

Since there are conscious, intelligent, personal beings (people) in that part of the universe we know (the earth), we reasonably infer that people, personal beings, did not create themselves; they had to have a creator who is, of necessity, as personal as they.

"All Good Scientists Stand in Awe —"

Time Magazine, in a 1962 issue on its religious page, reported that "Scientists ... have discovered that the more they know, the more remains to be learned." The article said, too, that the great majority of scientists and technicians believe in an "ordered universe." A famous micro-biologist was mentioned as agreeing that the day of "scientific materialism has passed."

Dr. George Beadle, former President of the University of Chicago, was also quoted as having said in a speech to Christian laymen, that "evolutionary theory leads back and back ... until we come to a primeval universe made by hydrogen. But then, we ask, 'Whence came the hydrogen? And science has no answer.'"

Conclusion

Nathan R. Wood believes that the answer to the origin of the universe — which, in his conception, is a three-fold structure of space, matter, and time — is to be found in a recognition of God. "We make no apology," he says, "for speaking of God. A universe without God is meaningless now. For the day of the blind soul in a black universe has gone by. The stars and the atoms have taught us to see. ... 'The fool,' it may be, has always said in his heart 'There is no God.' But the modern universe leaves scant footing for such a dance of morons."

I am inclined to believe that if a super-genius were to appear in the world, someone combining the mental powers of Newton, Einstein, Kelvin, and all the other great scientists of the past and the present, he would be deeply humble in the presence of something so amazing, so intricate, and so hard to account for by science alone as the universe.

If it had a beginning, as certain facts of science imply, how great must be its Beginner!

Any reverent person — scientist or not — might well say with the Psalmist, *"The heavens declare the glory of God, and the firmament showeth His handiwork"* (Psalm 19:1).

Fortunately, lesser persons, without being specialists in cosmology, can share the same reverent, reasonable and gladdening conviction.

Annotations

Comparative Size or Relative Worth?

A thinking man, gazing into the infinite depths of space, said, *"When I consider the heavens, the work of thy fingers, the moon and the stars, which thou hast ordained; what is man, that thou art mindful of him? and the son of man, that thou visitest him? For thou hast made him a little lower than God, and has crowned him with glory and honor. Thou madest him to have dominion over the works of thy hands; thou hast put all things under his feet"* (Psalm 8:3-6).

The Psalmist is saying that though man, in a sense, is just a speck compared to the earth or the solar system, he still has life and mind; and through these he shares something of God's nature and power. In addition, by divine favor, he rules over much of God's earthly creation. What

man may yet be, considering his God-given mind and spirit, no one can imagine, much less describe. Stars are big but not personal. Man is small but to a degree he is God-like in personality, and potentially capable of power and dominion under God.

Needless Pessimism

Not even astronomers can picture the inconceivable distances the universe involves. Nor can they with much definiteness imagine the power behind the radiations that fill the unbounded space around us. During the last decade, strange new objects have been discovered at incredible distances. These objects are known as quasars. They are probably the brightest, most distant objects ever seen by man. Amazingly great and strange in their brightness, they are even stranger in the energy they radiate. It may be as much as 10,000 times the brightness of a billion stars equal to our sun! The quasars, along with other facts and phenomena discovered during the last three decades, are challenging all previous concepts of the universe. No one yet knows their meaning.

The overwhelming power and vastness of the universe fills some people with the gloomy feeling that man is utterly insignificant. That is a needless inference. Atoms, the smallest units of matter in the infinity of space are not useless or meaningless. Persons, God-like beings, are greater than atoms. Why should they be useless or worthless?

Contextual Readings

"**Behind the Dim Unknown,"** edited by John C. Monsma, G.P. Putnam's Sons.

"The Mysterious Laws of Matter and Energy," by John A. Buehler, pp. 243-244.

"Adventures of the Mind" "Cause, Chance and Creation," by Philip Morrison.

"Exploding Universe of Quasars," by Lawrence Lessing, Fortune Magazine, December 1955, p. 160 f. This is an article of special interest to those concerned about late astronomical discoveries and their revolutionary impact on many areas of thought.

"The Mysterious Universe," by James H. Jeans, op. cit. This is a classic dealing with the greatness, mystery and philosophy related to the universe. In part, it supports the Christian view of existence.

"Life" — Dance of Atoms or Breath from God?

We "live," yet no one knows precisely how. The "life" in us and around us is an awesome reality, definitely manifest, but little known.

Living things produce other living things, always like themselves in kind. Unknowingly they use a chemical "code" of astounding complexity conveniently called "DNA." Discovered only a few years ago, DNA is natural but so intricate as to border on the miraculous.

Life is the giver. It is also the great gift. It gives us the world within and an awareness of the world without — in fact, all consciousness, all sensory joy and beauty.

But, who could give such a gift to so many generations, and to so many individuals in each generation? Who but One who knows and feels and purposes both on finite and infinite dimensions — God.

Chapter Five
A Great Dynamic

Life has never been traced to final constituents, components, or to an absolute origin.

Life may be the rarest thing in the universe quantitatively — and the most precious.

Life's characteristics point almost visibly to an invisible spiritual Source to whom we give the English name — "God."

Of other realities that "point to God" we have noticed three — human personality, the earth as a planet, and the universe as a system of systems.

Something Different and Rare

Whether we think of earth and the universe as two segments of reality, or as two words for one material whole, they are material, mechanical, and impersonal. Considered as one or as separate realities, their reality is hard to explain finally and fully. The scientific *fact* of increasing entropy indicates that the universe had a beginning. Since there is nothing which shows conclusively that the universe began itself, we have to agree with Aristotle that there had to be a Prime Mover, or as others say, a Creator, or a First Cause for the earth, nature, and the whole cosmic order.

Within themselves, the earth, the universe and nature give no certain indication of having a specific purpose for being. Considered solely as material structures, functioning mechanically, they of themselves manifest no clear purpose for existence.

We come now to consider something different, something which implies God's presence more directly. That invisible something of which we now speak is "Life." Life is not like anything but "life." Though it is abundant upon the earth, it is possibly very rare in the universe. It is not known to exist anywhere except on our small planet. Physical life can exist only under certain conditions; and as far as we know, these conditions do not exist elsewhere in our solar system. To many thinkers, it is conceivable that life in a different — and possibly in a higher form than we know — exists in other planetary systems of the Milky Way. But no one knows such a thing, for a fact.

Not Easily Defined

Life is not easy to define. It is rather easy to say that "life" is that which "distinguishes the animate from the inanimate."

But is that all it is? In every day speech, the word "life" has many meanings. Webster's dictionary lists more than twenty meanings for "life." Random House dictionary lists thirty usages of the word. Webster's first meaning is: "The condition that distinguishes animals and plants from inorganic objects and dead organisms, being especially manifested by metabolism, growth, reproduction and the internal powers of adaptation to environment. The second meaning is "the vital force which distinguishes...organic from inorganic matter." Again it is defined as, "Existence, especially conscious existence, conceived as a quality of the soul, or as the soul's nature and being." Life is also defined as the "vital force," whether regarded as physical or spiritual, the presence of which distinguishes organic from inorganic matter."

Life as here defined, is indeed a wonderful thing — intangible, invisible, "a principle," which no one has ever seen directly. Nearly everywhere on earth, living things can be seen, and everywhere there are forms of microscopic life. "Life" does things with inorganic matter which matter of itself apparently can never do. Life makes and maintains, sometimes for centuries, individual trees of the forest, including the gigantic sequoia trees which are perhaps the oldest living things on earth, thirty or forty centuries in age. Though we see these highly organized things, we do not see the "principle" which takes inorganic matter and reconstructs it into the cells, the sap, the blood, and other substances of the plant and animal worlds.

Everywhere, we see living organisms that walk, crawl, swim or fly. Animal creatures, in hundreds of thousands of forms, unlike plants, can move from place to place. Many forms of animal life have a degree of consciousness, being able to respond to external stimuli with a degree of choice. They adapt to environment in many ways. At times they appear to learn new things, exhibiting rudimentary intelligence.

All of this is but to say what everyone knows, that we exist in a world of organic and inorganic matter. On the one hand there are lifeless substances that obey precise laws of chemistry and physics — matter — which can do nothing except respond to what is done to it, chemically or physically.

On the other hand, there are organized, life-controlled units of matter that are self-active, capable of self-government, of growth, and of reproduction. They manifest highly complicated characteristics, centering around food-seeking, metabolism, and reproduction according to their kind. Numberless organisms exist as complete specimens, some very simple, others very complex. They vary in size from the sub-microscopic, to elephants and whales; from bacteria to the giant sequoia trees.

In form, size, instincts, reproduction, and so on, the variations among living things is amazing. For instance, the total number of plant species is not yet known; but it has been estimated variously from 750,000 to two million. The variations in form and species are more numerous among animals than among plants. Estimates of the number of animal species vary from a million upward. It is known that there are about five thousand species of wasps; that there are more than a half million species of insects. The total number of living creatures of all kinds existing at any one time on the earth is inestimable. And all of these as individual specimens and as species, are able to take substances — materials different from themselves — and make them a part of themselves. All are capable of growth or development; all species are capable of reproduction, some by very simple processes and others by mechanisms that are very complicated. Certain species, like the honey bees, have reproduced themselves through millions of generations with the same structures and the same characteristics, because of the "life" that is in them.

Living Things Grow, Move, and Reproduce their Kind.

The most significant fact to consider is that all living organisms have that *something* which enables them to develop, grow and perpetuate the species. They can all do what inorganic matter of itself has never been observed to do. Only "life" produces living things. All of man's efforts to produce life in a test tube, from non-life, have so far ended in failure. There is an unabridged gap between the living and the lifeless.

Another significant fact about life upon the earth is its penetration into all climactic zones. The whole earth is inhabited by living things. Every media of habitation — land, water, and air — have their living organisms. Not only land in general, but all conditions of the land are occupied. Forests, deserts, swamps and cultivated fields, all have their characteristic

plants and animals. In like manner, both salt water and fresh water, with very rare exceptions, such as that of the Dead Sea, are inhabited with living things. The ocean is said to support more forms of life than does the land.

While living things abound in every climactic region, life is more abundant, more prolific, in the torrid and temperate zones than in the arctics. But the cold polar regions are not without plants and animal life.

It is evident, therefore, that this something called "life" is very adaptive. It exists in many forms, in many environments, under all variations of climate and seasons. The temperature limits for its existence are quite narrow, falling within a few hundred degrees fahrenheit, at most. In a sense, life is very fragile; in another sense, life is very durable. It has survived, with some variation of form, all the changes of environment since the first appearance on the earth.

Life Enriches and Beautifies the Earth.

Another very significant fact about life is that it performs wondrous feats. It clothes the earth with plant structures from mosses and molds to the great trees of the forest. It fills the soil with visible and invisible organisms. It makes the waters of the oceans, at all depths, to swarm with living creatures. Life produces all the organic structures and substances such as blood, enzymes, hormones, and so on, which are essential to the existence and functioning of living things. Life produces all the fruits, all the vegetables and all the meats that make up man's food. Life produces all the charm of bud and blossom in gardens and fields; it has furnished much of the power, the "muscle," that has built our homes, highways and cities.

Plants and animals build habitations, but they make no tools outside of their own bodies. They use no tools beyond their own organs and senses. Man is the only tool-maker upon the earth, the only inventor of external machines. Life equips the eagle with his marvelous wings, eyes, beak and talons. Life makes all the eyes that see, and all the ears that hear; all the wings that fly, and all the feet that walk. Life makes all bodily organs, such as the heart; all the physiological functions, all the marvelous coordinating systems that involve nerves and sense organs. Not only that, but life somehow exhibits all the amazing instincts that guide and guard living creatures (except man) in all normal functions, and in the use of bodily tools. So far as we know, life produces the only beings who think, the only beings who have personality, capacities of intellect, emotion and volition — human beings.

Life Makes DNA

Within recent years, patient research has identified the very complex structure that controls heredity, one of the great marvels which causes all living things to reproduce after their kind. We call this amazingly complex mechanism "DNA," an abbreviation of the long almost unpronounceable words "deoxyribonucleic acid." To read the writings of certain enthusiasts, you might think that DNA created life, and that modern man created DNA. A little thought will show the absurdity of this suspected self-glorification. Man has merely identified and described DNA. Life has been here a long, long time. And living things have reproduced themselves "after their kind" since the beginning. Therefore, life has had DNA during all its history. As Dr. Russell Charles Artist has said, "DNA does not make life; life makes DNA."

All authorities can agree as to the intricate, complex structure of the DNA molecule. It is probably the most marvelous mechanism ever found. It is apropos to remember that mathematical "probability" of its being formed by chance is infinitesimal, "immeasurably small."

Life indeed makes everything that characterizes the bodily secretions of living things. It supplies the instincts that excite our wonder. Life builds, integrates, regulates and harmonizes all the interacting parts involved in metabolism, biological repair, and reproduction.

Let it be said again: Life is like nothing but life. In its highest form, in persons, it is manifest as the intangibles of thought, intelligence, emotion and will. In this respect, life is akin to "spirit."

The reality of life with its unique characteristics and powers points to God. Nothing but living things produce other living things. All that we see of life in our world, and in ourselves, tends to justify the inference that it came ultimately from a Living Source, characterized by mind or thought — a "Source" we call God. The divine life is spiritual, not physical. *"God is a spirit"* (John 4:24).

An Immense Gap

Among the several facts about life that point to God as its source is one of much significance; namely, the unabridged gap between what lives and what does not live. This gap is symbolized by the difference between a "person" and a corpse.

As no one knows precisely what life is, so no one knows precisely what the absence of life is. Life's uniqueness is indicated in part by the fact that man is still unable to take the ingredients of a living cell and make another cell. Its uniqueness is further shown by the fact that everything which lives dies, and all that dies decays and returns to its chemical components. Life's value is reflected in all that human beings have done — and still do — to hold to life and elude death. One thing becomes obvious: man does not create or give life. It is something he receives, not something he originates.

All living things begin with a single cell. The cell divides and multiplies. The embryo grows. The individual at length matures, declines, dies and decays. In the decay, the organic structures break up into chemical elements or other compounds. These can be seized upon by other living cells which reproduce the same cycle of life and death and decay.

This is not true of non-living matter.

As to why life exists, as it does, in so many forms, and is maintained only by life, we do not know.

In the meantime, life is here, unique, very precious. It builds its varying structures. It repeats its ceaseless cycles with a regularity that we call biological "law." We know that we do not originate life, or initiate its laws. The fossils indicate that life had a beginning at a time not infinitely remote. And we believe, by inference, that its source was something higher than matter — higher than "physical, dynamical or electrical" forces. We believe it was something Intelligent, Creative and Alive — in brief, the Living God who is Spirit. Many scientists — not all — accept the inferential declaration that follows: *"In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made through him; and without him was not anything made that hath been made. In him was life; and the life was the light of men"* (John 1:1-4).

Annotations

Beyond Atoms and Calculus

Faith, hope and love, the three greatest dimensions of human personality, are hard to account for with nothing more than impersonal matter and energy behind them. Not only conscious personality, but even life on its

lower levels, can influence — even control — matter, and produce effects beyond atoms and energy. When matter becomes alive it goes beyond the axioms and probabilities applicable to a purely materialistic universe.

In 1906 Young Frank was in his second year of law at a famous university. The younger of two sons, in a middle class family, definitely on the way up, he was a young man with great possibilities.

"Young" Frank (so called to distinguish him from "Uncle" Frank), came home for Christmas with secret problems. He confessed them to his brother, but not to his parents. He was disillusioned, he said, with the prospect of law as a career, and with money-making and "status seeking" as ruling goals in life.

Not being helped much by his brother's platitudes, he went to visit "Uncle" Frank — wise man of the family — in the big city. He told Uncle Frank his feelings and about his unanswered question — "What is life for?"

Uncle Frank was quite sympathetic, and helpful — to a degree.

Between discussions, Young Frank went down town and incidentally decided to take in a matinee at a famous theater. Midway of the performance, there was a cry — "Fire!" Instantly the big crowd went wild with fright. They thronged the exits, madly trampling one another, making orderly escape impossible.

Surviving the desperate scramble for life that swept him toward the nearest fire escape, young Frank not only reached it but also the exterior landing. Gripped by the cries of those trying to follow, he turned to help one wedged in the crush behind him. After that he help another, and another — and another — as screams continued — until a burst of flames blinded him and swept him from the landing.

In this way he helped more than 20 people to escape the inferno. By so doing, he received burns that were to prove fatal. But at the hospital, before the end, he told Uncle Frank, "I have found out what life is for. Life is to give."

The meaning of this tragedy which took the life of Young Frank and several hundred others, centers not in the chemistry of the conflagration itself but in the psycho-somatic — spiritual actions of living, personal beings; in actions and happenings which molecular and atomic mechanics are not known to produce.

For instance, neither atoms — nor anything wholly impersonal — can

produce the moods, concepts and questions experienced by Young Frank months before he went to the theater. Nothing wholly material could have turned him back on that fire escape landing at the risk of life, just to help others.

Of themselves, however simple or intricate, machines know nothing of fright, pity, duty, life or values.

Leconte du Nouy was right in insisting that the laws of matter and of mathematical probability (chance) apply to "inorganic phenomena," to the "nonliving," not to the distinctive phenomena "pertaining to Life."

Life is above matter and greater than formulas. It is dynamic, enigmatic, probably immortal. No scientist or philosopher can precisely define it. No one knows whence it came or where it goes. It is a strange, priceless value which one can lose by saving, and save by losing. That could have been Young Frank's meaning when he said, "Life is to give."

Contextual Readings:

"Who Goes There?", J. Wallace Hamilton, Fleming H. Revell Co.

Chapter 1, "Jesus Said 'Father'," p 11.

Chapter 12, "The God of the Living," p 143.

"Man Does Not Stand Alone," Chapter 5, "What Is Life?"

Not Conscious But Very Much Alive

"*And God said, Let the earth put forth grass, herbs yielding seed, and fruit-trees bearing fruit after their kind, wherein is the seed thereof, upon the earth: and it was so.*

"And the earth brought forth grass, herbs yielding seed after their kind, and trees bearing fruit, wherein is the seed thereof, after their kind: and God saw that it was good...

"And God said, Behold, I have given you every herb yielding seed, which is upon the face of all the earth, and every tree, in which is the fruit of a tree yielding seed; to you it shall be for food" (Genesis 1:11,12, 29,30).

Chapter Six

Without Mind, Yet Strikingly Clever

In the preceding chapter, we began to speak of an entity, a dynamic, no one has ever seen directly, or been able to define in final terms — life. Every organic thing manifests it. In all parts of the world, it is ceaselessly active, bringing things into being, constructing countless organisms from the smallest protozoan to the largest tree, out of inorganic materials. Life not only forms each structure; it also guides and controls every feature of every stage of the development of every individual of every species, according to its kind.

Undoubtedly life represents a higher level of reality than does matter or mechanisms. It is like nothing but itself. It does things which lifeless matter can never do. Matter *has* its mysteries; but we can almost say, "Life *is* mystery."

For these reasons, we believe that life points more strikingly to the reality of God than does the earth or the universe. In dealing with living things we are confronted with functioning structures which seem to manifest intelligent design and adaptation. Since such concrete mechanisms and functions give evidence of Intelligent creation, we shall devote this and the next two chapters to an appraising look at a few living creatures on both plant and animal levels.

A Look at Plant Life.

We shall deal with the plant world first. Life existed on the earth first in the form of plants. The oldest form of life known to earth is, therefore, plant life. There are indications that animal life could not have existed until plants prepared the way. There is a hint to this effect in Genesis 1:29,30: "*And God said, Behold, I have given you every herb yielding seed, which is upon the face of all the earth, and every tree, in which is the fruit of a tree yielding seed; to you it shall be for food: and to every beast of the earth, and to every bird of the heavens, and to everything that creepeth upon the earth, wherein there is life, I have given every green herb for food: and it was so."*

Certain findings reported by biochemists tend to confirm the Biblical hint.

Plants flourish in every climactic zone of the world. From the steaming tropics to the ice of the polar regions, plants are found in numberless varieties and profusion. They flourish in the soil and in the water, on dry land and on wet land, in salt water and fresh water. Certain plants are perfectly at home in the murk of the swamp; others are equally at home in the dryness of semi-deserts.

Whether it be mountain or lowlands, swamp or desert, land or sea, in torrid or frigid zones, life in plant forms is there with the mystery of its variety and amazing adaptability. In its natural home, no species seems out of place. Whatever the surrounding hazards, its life cycle seems exactly adjusted to the established environment.

The world of plants is characterized by an amazing variety of forms, structures, processes and products. Without plants with all their variety, animal life, including the life of man, could not exist.

Order and System in All Plant Life

In spite of all plant variations due to climate and place of habitation, and in spite of the range in sizes from microscopic diatoms to age-old trees, and in spite of all the differences in root, stem, leaf, flower and fruit, no species of plant has ever been found that does not show a certain order of development with a definite system of form and structure. For instance, there are as many kinds of leaves as there are leaf-bearing species. There is a characteristic pattern visible in every plant, as a whole, and in every separate structure, such as bud, leaf and root. Every species has a distinctive life cycle. Not least in significance is this: every part of the plant has a function to perform in the life cycle. Roots have several functions, also leaves, stem, bark, flowers, pollen, seeds — all have obvious functions which reflect **intelligent design and adaptation.**

In view of the fact that, as a minimum, there are at least 500,000 species of plants, each showing adaptations of means to ends, without any proven consciousness in the plants themselves, we find strong implication that plants are not self-made. The intelligence they manifest is, we believe, a Creator's intelligence.

Specific examples will illustrate the underlying intelligence of which we speak.

Plants and Seasons

Plants of the temperate zones exhibit a sense of seasonal time. Contrast between seasons is very marked in these zones. Compare the dead world of winter with the transforming "resurrection wonders" of spring time. Is the change from the dormant inactivity of plants in winter to the pulsing, waiting, awakening of spring a matter of temperature only? If so, why did not plants put forth their new leaves during the mild days of autumn?

Of course, relenting cold and lengthening days of sunshine have much to do with the awakening of the plant world in spring; but not everything. Plants have built-in seasonal "time clocks." Many herbaceous plants have both roots and stocks deep in the cold soil; and these respond to the call of spring no less rapidly than the deciduous trees and shrubs. Aquatic plants, such as water lilies, with roots many feet deep in the water and mud, seem just as much aware of the coming of spring as do the surface plants. In fact, while it is still winter, some aquatic plants start root and stem growth even while ice covers the water above them. How do they know that spring is on the way? Very sensitive is the time clock which touches off these preparatory processes. And how fortunate for the species that it is equipped with such intelligent safeguards!

On the lower slopes of the Alps there is said to be a plant that thus begins its growth under ice. Its stems, at the most active stage of growth, release a considerable amount of heat. In this way they "bore," or melt ahead of them, holes up through the coating of ice to the air above. By some means but little understood, this plant becomes aware that spring has arrived. Through some marvelous automation, it initiates just the right processes by which tender stems can reach the light and air above the ice.

There seems to be something in this phenomenon more than temperature and mechanics can explain — something almost as inscrutable as life itself.

It is not amiss to "walk reverently" in the presence of such phenomena. That unconscious seeds, roots and buds are able to anticipate changes of seasons must mean something. What? Weigh the answer, both as a duty to yourself and as a privilege. A hasty answer can be deceptive.

Spring Hazards for Tender Plants

In temperate zones the uprush of plant life is greatest, of course, in the months of spring. The new-born sprouts and buds are then at their tenderest. As we know, winter often returns with sudden caprice during springtime. Still, except on rare occasions, damage to tender wild plants

is usually negligible. This is because protective devices have been prepared in advance. It is almost as though the parent plants of the preceding season had consciously prepared for the anticipated hazard. We do not, of course, credit the plant with any "consciousness" of this nature. But it is possible, is it not, that "Conscious Intelligence" entered into the process somewhere, sometime — even before plants were created?

Sap Ebbs and Flows With Changes of Seasons.

The opening of the buds of spring is dependent on an adequate flow of nourishing sap brought up from roots. During the winter, growth of deciduous trees is at a standstill; only enough vitalizing sap circulates to keep the specimen from dying. When a tree is at its fullest state of activity, there are two distinct currents of sap, one ascending and the other descending.

The rising of sap — the "life blood" of plants — is a mystery. A vigorous flow of sap has to start before foliage is expected. Starting at the root, the fluid is carried upward through the cells of the newer wood of the tree to the peripheral twigs on all the branches which are to bear leaves. The force with which the sap goes upward is surprisingly great. Not only botanists but every thoughtful person would like to know the secret of this lifting power. Sap is mostly water, and water does not rise of itself. What pumps it up to the uppermost leaf of the tallest trees? What is simpler to ordinary thought than the "annual rising of the sap"? And yet, after all, where would you find anything more difficult to account for, if a tree is a mere mindless "chance" product? Are you not inclined to agree with Joyce Kilmer, that while poems are made by man, that "Only God can make a tree"?

And is there not a strong sense of practical wisdom in these words from the book of Job: *"... Speak to the earth, and it shall teach thee; and the fishes of the sea shall declare unto thee. Who knoweth not in all these, that the hand of Jehovah hath wrought this, in whose hand is the soul of every living thing"* (Job 12:8-10).

Plants Prepare Efficiently for Winter

The underground activity, the rising of the sap, and the swelling of the buds, which prepare for the coming of spring, are not more interesting or efficient than is the manner in which plants shed their leaves, distribute their seed, and withdraw sap from the tender parts in preparation for winter.

In spite of the fact that temperatures in the temperate zones in

September and October are in many places higher than those for March and April, the plant processes of the two seasons are markedly different.

Have you ever thought how marvelously coordinated are the processes represented in the shedding of leaves by trees? Pull off a leaf in mid-season and you leave a raw wound; but when the plant drops its leaves in due season, no wounds exist. This is due primarily to the fact that even while the leaves are in full vigor, the tree prepares to throw them off when their work is finished. This preparation for dropping them at the right time begins almost as soon as the leaf is fully mature. Quite early in the history of the leaf, a special arrangement of cells is formed where the leaf is attached to the stem, so when the leaf is dropped there is no open or exposed surface. There are few more beautifully or intelligently contrived processes in the natural world than this fall of the leaf with which the tree passes into its winter rest.

Do They "Look Ahead?" Not Really — But Almost

In general, the hardier trees of the temperate zones throw off their leaves in preparation for winter. Similarly, the live parts of the tenderer plants retreat beneath the ground as freezing temperatures approach.

Many are the systems and contrivances employed by plants in preparation for freezing temperatures. There is more to it than merely throwing off leaves or retreating into the ground. Every bud which is to bear the bloom and the fruit the next year has to be completed to full embryonic perfection and wrapped in sufficient protective covering against the winter's cold. Every seed for the new generation of plants the following year must be matured, scattered, and even planted, in advance. And so, uncounted billions of seed are matured and dropped — on time! One authority has said that "nature generally manages to get most of her seeds covered-in before the winter arrives."

Seeds, the most common means of reproducing and spreading plant species, are "packages of life." The parent plant cannot move; so, it does the next best thing. Out of the organic substances, it constructs a reproduction of itself in embryo — what we now know as the DNA — plus a proper food supply, and all the rest. These living parcels are the plant's most precious product. Seeds keep the chain of reproduction going. As "packages of life," they are designed and wrapped for distribution and planting. These seed "packages," marvelously prepared for preservation

until the time of germination, are the most remarkable objects on which the unaided eye of man can gaze. They are so expertly and completely made that their vitality, in some species, can endure for years. Seeds may be as large as a coconut or as small as a pin point.

Each parent species produces peculiar seed "after its kind." Nothing but living parents can produce seed to produce other plants like themselves. There is an anticipating intelligence in all of this which is not conscious to plants, but so obvious as to seem almost personal.

Scattering Seed a Major Necessity

If all the seeds from a plant fell straight to the ground underneath, there would be a fatal crowding. Seeds need to be distributed, scattered widely. The method of seed-scattering is therefore of great significance. It is a phenomenon that has the appearance of purposive powers.

The seeds of many plant species are scattered by being able "to catch a ride." One example is that of the "cockle burr." Others are the "sand spur," "beggar lice," "Spanish needles," and like-specimens too numerous to name. Such seed are made to "catch hold" and "hang on." Each species has its own built-in device for taking hold of the fur of animals or the clothing of human beings. Each illustrates the adaptation of means to ends. This adaptation is far too clever and effective to be due solely to "fortunate coincidence."

Plants That Shoot

Plants have many other ways of scattering seed. We shall mention a few of the more unusual.

Some plants give their seeds a degree of scattering without any outside help. The "squirting cucumber" does it by a hydraulic principle. The pressure of liquids against the thin walls of the fruit, causes it to burst at the right moment, sending out a shower of liquid-borne seeds.

Witch hazel and balsam shoot their seeds out as if from a popgun, by the springing action of dry, elastic tissues in the plant.

Certain species produce seeds equipped to float on water, or to be carried by winds. Many plants equip their seeds with flying apparatus to distribute them. Some varieties are enclosed in thin disc-like packages which the wind lifts easily, and scatters far and near. The pestiferous

dandelion, and certain milk weed plants, attach parachute devices to their seeds, enabling them to ride the wind for considerable distances. The maple tree equips its seed with one wing — not two — to ride the wind. Fully two-thirds of the seeds of plants are said to depend on the wind as their carrier.

How has all this been so happily devised and coordinated by organisms without any distinguishable centers of consciousness? Do these delicate seasonal and functional processes, carried out with such thoroughness and unfailing regularity, owe their origin solely to the mechanics of physics and chemistry? The laws of physics and chemistry mechanics *are* involved, of course, in the existence of every living thing, but the question is, do plant origins and adaptations involve more than "resident forces" in matter, plus circumstances of chance? If so, what would that "something more" than "resident forces" and the accidental factors be?

Could it be that this is the way plant life began: *"And God said let the earth put forth grass, herbs yielding seed, and fruit-trees bearing fruit after their kind, wherein is the seed thereof, upon the earth; and it was so"* (Genesis 1:11).

Plant and Insect Partnerships

To most people, flowers represent the greatest glory of plants. But it is not of the captivating beauty of flowers that we are to speak at this time. We are thinking now of the flower as the focal point of the plant processes. Without the system of organs to which the name "flower" has been given, blossoming plants could not continue their existence. We shall, therefore, make a special effort to visualize and appreciate the highly advantageous partnership between plants and insects made possible by flowers.

As in the higher life forms, sex is also a fundamental fact of plant existence. In some cases the male and female parts of a species may be separated on different plants. Most often they are united on the same stem, or combined in the same flower.

Flowers are the reproductive parts of the plant. The male portion of plants of the higher types are stamens. They produce a powder which we call "pollen." The female portion of plants of the higher types is known as the "pistil." It contains tiny ovules which can grow into fruitful seeds, provided that they have been fertilized by pollen from the stamen of their own or some other flower of like kind.

After they have been fertilized, the pistils begin to mature into what we call "fruit" which is sometimes a sweet, juicy berry as the grape, but more often, a dry capsule, as in the poppy or the violet.

Union of the two sex cells called "fertilization" is perhaps the greatest marvel of plant wonders. It involves a whole series of complex processes, including a partnership with the world of busy insects.

Plants are usually fixed or rooted in one spot. This makes it impossible for them to go in search of mates. So they depend upon outside agencies, not themselves, for the conveyance of pollen of one flower to another. Sometimes in such plants as the grasses, it is the wind that carries the pollen from one blossom to another. In this case the stamens which shed the pollen hang out freely to the breeze while the pistil which is to catch it is provided with numberless little feathery "tails" to receive the passing grain of the fertilizing powder.

But with most flowering plants it is insects that perform this service for the helpless plant. About all the plant does to employ the insect in such cases is to offer blossoms with bright colored petals and a drop of nectar which insects take great pains to obtain. The bee or the butterfly visits the flower, of course, for the nectar alone, unconscious that he is aiding the plant to set its seed. The plant, no doubt, is also entirely unconscious of the cleverness of its strategy in luring the bee to its flower to transport the necessary fertilizing pollen.

Some authorities think that there is no more fascinating chapter in the great book of life than that which deals with these unconscious partnerships between flowers and insects.

How do you suppose this "fortunate, mutually profitable arrangement" came into existence? This season's insects did not plan it; the partnership existed last year and thousands of years before that. The flowers did not originate it; they only inherited it. The natural inference is that it was begun and made permanent and autonomous by some Creative Power outside the plants and insects. Many persons call this invisible Creative Power, God.

A Particular Case

In considering cross fertilization of flowers by insects, special attention should be given to orchids and their helpers.

To begin with, the orchid blossom is so intricate that it is not easy to identify its parts. The early purple orchid is an illustration. The petal

forming the "lip" is carried backward into a spur which, although it contains no nectar, is valued as good by bees. Now the head of the insect, in searching for the succulent tissue, comes in contact with two sticky discs attached to the stalks of the pollen masses. At first the pollen masses stand erect on the bee's head. But in about a half a minute, owing to an intricate arrangement, they incline forward. Thus by the time the bee has arrived at the next flower the pollen masses are in such position that they cannot fail to strike the stigma since they point straight toward it as the bee enters.

Again we ask, is anything involved here more than blind chance, or molecular mechanism? Do you feel that this coordination of the plant on one hand and the bee on the other is too intricate for mindless molecules and mechanism alone?

In certain other cases, plants are known to hold their insect visitors for as much as three days in order to make sure, apparently, that the plant's need was met. It is said that certain tropical plants, moved to temperate regions, fail of cross pollination because their blossoms are fortified against the entrance of all but one kind of tropical insect, and that insect is not found in the temperate zone. Very peculiar, is it not?

While the greater number of flowers are of such design as to be served by the visits of the honey bee, others are served best by bumble bees and certain species of moths.

How Does All This Point Toward God?

We are not at this time interested in botany or zoology, as such. Neither are we trying to entertain the reader with a series of nature stories. We are trying, on a scientific basis, to point out concrete life processes on the plant level, which processes indicate the strong probability that living things had an All-Wise Creator.

Only a few of the innumerable living actualities are here named to illustrate the many wonders of the plant world which point, we believe, not to a purposeless "dance of atoms," but to a Creator, to a loving God, who is eternal and all wise.

It is rather strange that in the amazing first chapter of the Bible, consisting of 750 English words about the origins of the earth, the universe, life, and man, the writer devoted 81 words to the subject of what man and animals were bidden to eat. But strange or not, more than one tenth of the space in chapter one is about food.

As to man, the record is, *"And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for food"* (Genesis 1:29).

As to food for animals this is what is written: *"And to every beast of the earth, and to every fowl of the air, and to every thing that creepeth upon the earth, wherein there is life, I have given every green herb for meat; and it was so"* (Genesis 1:30).

Several interesting meanings can be seen in these records. First, according to the Bible, in the era before the fall of man, both people and animals were vegetarians (marine animals seem not to be mentioned here).

To man, God said: *"Every green herb yielding seed...and every tree in which is the fruit of a tree yielding seed. To you it shall be for food."*

To the animal world, every green herb was given for food. These declarations say that in the beginning the Creator made the land-animal world, including human beings, dependent on the world of plants for food.

Even if that was not the case then, it is now. Plants still supply the food for the animal world directly or indirectly. All animals either eat plants of one kind or another, or they eat the animals that ate the plants.

Further study shows that there had to be plants before there could be a self-perpetuating world of animals. Very fortunately — also very marvelously — the plants came first, and in sufficient quantity to meet all animal needs.

The food of plants, with rare exceptions, is inorganic chemicals in solution. These they take directly from the soil, water or air.

To do the amazing job of changing the inorganic into the organic, plants have to have carbon dioxide. Animals supply this carbon dioxide as a waste product.

Plants and animals are mutually dependent. Each has to have the other to exist. If all the life in the world was plant life, all carbon dioxide would be used up eventually and even plants would cease to be.

If all living things were oxygen-consumers as are animals, all the oxygen would eventually be consumed, bringing death even to animal existence.

It is verily a great system — this by which the plant and animal worlds work together to perpetuate life on the earth.

It is a remarkably efficient and a vastly productive system, producing billions of tons of food, in great variety, every year. And where the system is not disrupted by man's science, industries and follies, it remains well balanced. Whether this balance of production and consumption can survive further human "progress" and over-populations remain to be seen.

Contextual Readings

"Behind the Dim Unknown" op. cit.

"Mysteries of Plant Life — the Ultimate Cause" by William H. Born, pp 95-104.

"Evidences of God in an Expanding Universe"

"Footsteps of God in the Plant World," by Gerald T. Hartog, pp 100-105.

"Of Flowers and the Baltimore Oriole," by Cecil Boyce Hamann, pp 219-223.

"Our Amazing World of Nature," Reader's Digest Association, Chapter eight, "Green Magic."

The Living and the Lifeless

"Out of the ground made Jehovah God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of the knowledge of good and evil" (Genesis 2:9).

Deep behind the symbolic terms of this narrative is a narrow, fundamental gap separating the nonliving and the living — a gap apparently narrow, but yet so deep, representing such a difference, that only God can bridge it.

Only God, who is life, can make a tree, a seed, or a cell.

Chapter Seven

Nonconscious Wisdom and Benefactions

All living things require certain chemical elements. One chemical essential for all life is nitrogen. Nitrogen is a very inert element. A small

group of plants — peas, clovers and a few others with the aid of certain bacteria — are able to take inert nitrogen directly from the air. All other plants, unless aided by the gardener or farmer with prepared fertilizer, must secure it from decayed animal and vegetable material in the soil.

Plant Strategies for Securing Vital Chemicals

For reasons not yet understood, a small number of plant species are unable to take their nitrogenous food from either the air or the soil. So, what are they to do? Without nitrogen, ultimate death of the species is inevitable. It turns out that the only thing left for such plants is to catch some of the many moving creatures of the air that light upon them. Since all insects have to have nitrogen, they eat from some nitrogenous food source, and so have nitrogen in the tissues of their bodies. If the plant can catch and assimilate them, then its nitrogen needs will be supplied.

Certain Plants Catch and Eat Insects

Several species of plants are prepared to carry out this clever and complex thing — the catching and assimilating of insects. Since the usual thing is to think of animals as plant eaters, it is quite unusual to think that plants are meat eaters. This reversal of the ordinary processes of metabolism by plants is another illustration of the wide range of plant capability, which in turn, is one characteristic of life itself.

Certain members of the "sundew" family of plants are insect eaters. The fly-catching species usually live in marshes and bogs where the nitrogenous content of soil is supposedly deficient. These plants have, on their reddish-green leaves, hairs with a swollen gland at the head of each. The glands exude a sticky fluid which makes them glisten in the sunlight as if fresh with moisture from the morning dew. To the insect, that glistening substance probably looks like a drop of nectar. The insect is attracted to it; and as he alights on the leaf and goes for the apparent honey, the leaf hairs react vigorously. They bend toward the insect; and over him is poured, from all the glands, a secretion very like the gastric juice produced in animal stomachs. In addition to supplying the secretion, these hairs manage to hold him in spite of struggle. In the course of about a half hour, it is said that all the hairs of the leaf, about two hundred, attach themselves to the insect body. When they unfold themselves, a few days later, they reveal nothing but a few indigestible remnants.

Here is something so obviously intelligent that it strongly supports the probability of a Designer somewhere behind the unconscious workings of plant life.

The venus flytrap is the most dramatic of all plants that catch insects. It is a small plant found in sandy bogs, mainly in North and South Carolina. The leaves are so constructed that they can fold down the middle. There are stiff hairs around the edges of each leaf; and on the upper surface of each there are a few prominent hairs. When these hairs are touched, the halves of the leaf-trap close rapidly. When an insect lights on the open leaf in search of nectar, he is almost certain to touch the sensitive hairs which cause the trap to spring shut on its living hinge. As the leaf closes, the slightly curved hairs along the edges, coming together, interlock in a way that completely imprisons the unsuspecting insect. The whole procedure takes from ten to thirty seconds. Several days may be required for the plant to digest its prey. When this is completed, the trap opens again in readiness for another victim.

It is reported as a curious fact that when a pebble, instead of an insect, is inserted into the trap, it will close normally, but it will open within a few hours and drop the pebble out.

Pretty "smart" for a mindless plant, don't you think? Almost as though it had consciousness, is it not? Scientists would not be wholly surprised if a degree of consciousness were found to be involved in plants, since the chlorophyll of plants is **protoplasm** as truly as that in the nerves of animals.

Plants That "Feel" Light

It is not difficult to prove that plants, which we assume to be without consciousness, have a "feeling" for light. Place a plant in front of a window so that light reaches it from only one direction. Within a few days the plant will begin to lean toward the light, tilting its leaves so as to expose them to as much light as possible on their upper surfaces.

This sensitiveness of plants to light is very evident in the case of climbing plants, particularly specimens growing up a wall. Though it occasions considerable distortion of stalk, the leaves all face outward toward the light.

However, a minor exception to this behavior is found in the ivy plant. Its shoots first turn inward, away from the light, pushing into dark crevic-

es, getting a firm "grip." Later, leaves turn outward. It simply does "first things first."

A Phenomenon As Yet Not Fully Explained

As to the causes which underlie these light seeking and light avoiding movements, research has not as yet found a full explanation. It is, of course, mechanistic and structural and natural in a very large degree. But one cannot help but wonder about the ultimate source of the mechanical niceties represented by the many forms and shapes of plant structures, as well as about the power that sustains plants in injury, and guides their self-repair after damage.

There is a plant curiously called the "sensitive plant." Among its many interesting characteristics, the most striking is its extreme sensitiveness to contact. The lightest touch upon its leaflets is sufficient to cause them to close, and even the leaf stalks will collapse. Most interesting of all is the fact that the parts touched are able to communicate their shock to other parts of the plant, sometimes to the whole specimen. In this phenomenon the sensitive plant has something which is strangely like a rudimentary nervous system, though no specific structures comparable to "nerve" or to "nerve centers" have been found.

It is now known that certain plants are responsive to electrical influences. One investigator reports finding that young specimens of mimosa show considerable leaf agitation during a thunder storm, though not at all exposed to any wind or draft.

There is another plant, popularly called the "telegraph plant" which some observers think is the most unusual in the world. Certainly it presents problems which up to this time remain baffling. The leaves of the "telegraph plant" are divided into three parts, consisting of a large leaflet and two smaller lateral leaves. It is these small leaves that offer the strange phenomenon. Throughout most of their existence these leaflets are in motion, described as jerks, which suggest the movement of a second hand of a watch. When one leaflet rises the other descends. Each in its turn describing a kind of elliptical course.

So far as the writer knows, this phenomenon remains unexplained. A part of its oddity is that these continuing movements offer no known benefit to the plant, having no discernible function.

Many Plants Have to Struggle to Exist

The earth is crowded with plants. Nearly every plant has to struggle against other plants for existence. For every plant that survives and matures, it is estimated that scores perish.

Of the multitudinous plant strategies for survival, we shall consider only one — climbing. A surprising number of plants employ this device for getting up into the air and light. If the plant were a thing with consciousness, we might say to it, "You are quite wise in trying to get above your competitors."

Since the plant has no consciousness, we cannot ascribe to it any actual wisdom or choice in conduct. But though the credit does not belong to the plant, the climbing strategy is very praiseworthy. It reflects wisdom — from some source — built-in wisdom.

The methods adopted by climbing plants are ingenious. The most common method is that of twining, twisting, their stems around a support. Some of these climbing plants such as the hop, invariably turn from left to right. Others, of which the bean is a good example, go from right to left. The constancy with which each species holds to its particular method of twining is very remarkable. Persistent coercion — human "meddling" — will not induce the stem to alter its natural procedure.

Next in importance to the twining plants are those which climb by means of tendrils. These organs are among some of the most remarkable in the plant world. First, the tendrils grasp the support and then twist themselves into a permanent and rigid position. As soon as the tip of the tendril is within reach of some object, it begins to twine itself without delay. Not content to wrap itself around the support just once, it goes around twice or three times. When the attachment has been rendered quite secure, spiral twisting comes to an end, as though by conscious understanding.

Several other methods are employed by climbing plants. They all reflect an intelligent adaptation of means to an end which impersonal and purposeless forces alone are hardly adequate to explain.

Is it necessary to suggest that these hundreds of intelligent "strategies" of the plant world mean something? If mindless plants are not self-created and self-directed, it is probably, is it not, that they are mechanisms, automations, brought into being by an Intelligent Creator who made them

what they are for His own purposes?

At any rate, this seems to be the declaration in Genesis, chapter one: *"And God said, let the earth put forth grass, herbs yielding seed, and fruit trees bearing fruit after their kind, wherein is the seed thereof, upon the earth; and it was so. And the earth brought forth grass, herbs yielding seed after their kind, and trees bearing fruit, wherein is the seed thereof, after their kind; and God saw that it was good ... And out of the ground made Jehovah God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil"* (Genesis 1:11,12; 2:9).

Again the question is, "What do you think?" It is important, we believe, that everyone **think** about the structures, the functions, and especially, the adaptations of the plant world.

Lord Kelvin, one of the greatest among nineteenth century men of science, believed in the importance of "thinking," each for himself, on matters of the kind now considered. Lord Kelvin has been quoted as saying, "If you **think** strongly enough you will be forced by science to believe in God."

Lord Kelvin considered such belief entirely reasonable, even compellingly so. He said, "We are absolutely forced by science to believe in an influence other than physical or dynamical or electrical forces. Years ago I asked Liebig (German botanist), walking in the country, if he believed that the grass and flowers we saw grew by mere chemical forces. He answered, "No, no more than I could believe that a book on botany describing these things could grow by mere chemical forces'"

If we are logically forced to believe in something more than "physical, dynamical or electrical forces" behind the structural and functional wonders of nature, what would that "something" have to be? And how great in **mind, power,** and **presence** would it have to be?

Plants Suggest an Answer as to Their Origin

John Fiske, scientist, philosopher and historian, quoted Linnaeus, Swedish botanist, as having said of an unfolding blossom, "I saw God in His glory passing near me and bowed my head in worship."

Fiske also referred to Tennyson's little poem — "Flower in the

Crannied Wall." That poem closes, as you recall, with these words:

"If I could understand
What you are, root and all, and all in all,
I should know what God and man is."

Fiske had the opinion that no deeper thought was ever uttered by a poet.

He declared that plants with their marvelous substance, chlorophyll, working with the aid of sunbeams, are unceasingly at work producing living things out of dead, lifeless matter. Thinking of the vast quantities of food for animals and man which only plants can make, Fiske added that the elementary principles of all life appear, though almost invisible, in the operations of the plant world.

In this and the preceding chapter, we have looked at concrete specimens of life in the unconscious level of plants. Our concern has been to find a reasonable answer to the problems of what lies behind the marvelous processes of plant life. We believe that plants themselves silently suggest the basic answer to their existence, and their value to man.

Plants are silent witnesses for God. The real mystery manifest in all plants and in all organic forms and functions of the plant world, is life. Life is the immediate maker of all the forms and structures of plant substances. Life is, therefore, greater than the plant. Figuratively, at least, life is the "creator" of the plant species and their wonderful processes.

It is quite reasonable to believe that something very important can be learned from a thoughtful acquaintance with the speechless existence of plants. Their structures, instincts and functions have a message so obvious that it is unnecessary to go further in describing the orderly, regular, yet intricate lives of plants. Instead of listing more facts, it will be good to look toward the deeper meaning of the millions of facts represented by the few here noted.

Only Living Things Produce Living Things

One changeless fact to remember about all species of plants is this: they all have plant ancestors. Every plant in the world today is a lineal descendant of parents of its own kind. Life comes only from life. This basic scientific fact is admitted by all authorities.

Strange to say, some scientists contradict this axiomatic scientific fact

by supporting the doctrine that life originally came into existence spontaneously from non-living substances through accidental conditions.

Since life has never been known to come from anything but living forms; and since no effort of man has ever been able to produce life by the manipulation of non-living materials and processes, it sounds very *unscientific* to affirm that life had a non-living origin! The facts so far known seem to favor overwhelmingly the probability that life, as we find it on earth, goes back to a living Source.

Basic Mystery of the World — Life

Another fact is outstanding when one considers the interlocking order, system and functional processes of the plants that cover the earth. It is this: the chief wonder of plants is not this or that living specimen or species. It is, rather, the unseen force, or power, which designed and produced the species that reproduces itself after its kind. Obviously, that which takes the inert materials of lifeless matter and fashions them into the roots, leaves, flowers and fruit of the living plant, after its kind, is more a subject of wonder than the plant itself.

Life is the true "wonder builder" of the world. From a small number of materials in the soil and air, life constructs forms and manufactures products in marvelous variety. In a vast number of cases, not only are the same kinds of chemical elements used, but the very same materials are used over and over. This season's plants are made of decayed substances of preceding generations. As plants grow old in their life cycle, life abandons the older forms. They are left to decay and decompose. But when the forces of decomposition have torn them down, life takes the same chemical materials and builds them again into particular specimens of many possible species of plant forms. Surely this patterned procedure, governed by various intricate laws so firmly established that the same processes are repeated season by season, year by year, for unnumbered centuries, is one of the most meaningful realities mind can consider.

While it exists everywhere around us in visible forms, life itself remains unseen. Though it works before our eyes and runs through all organic forms, it still eludes all efforts to be seen or weighed directly. Chemists can analyze the structures of plants and isolate all their chemical contents; but they cannot take these chemical contents and rebuild them into any kind of living organisms. Only life can put life into non-living

substances.

A Tentative Answer to a Persistent Question

This hasty consideration of certain wondrous structures and instincts will serve, we hope, to suggest a tentative answer to a question which will not go away: "What is behind the existing order and system, the **intelligence** and **power,** of the universe?"

While holding this question open for further examination, suppose we set up a tentative answer to the question above. Let us tentatively say that the evidence from every field considered strongly favors the conviction that behind the wonders of the world there is a Living, Intelligent, Unseen Power to which men of great minds and characters have given the name "God" — a King, *"Eternal, Immortal, Invisible"* (1 Timothy 1:17).

Annotations

"Consider the Lilies..."

The unaccountable man whose mission included the greatest task ever imagined; the "man" who spoke as no one else has ever been able to speak, took occasion to honor the plant world for its beauty and its importance.

Jesus spoke often of "seed," of "seed-sowing," and of harvests. He spoke of fruits and trees. Of hypocrites, He said, *"Ye shall know them by their fruits. Do men gather grapes of thorns, or figs of thistles? ... A good tree cannot bring forth evil fruit, neither can a corrupt tree bring forth good fruit"* (Matthew 7:16-18). He spoke also of God's care for the "grass of the field," flourishing today and gone tomorrow.

Jesus' most beautiful words in recognition of the basic place of plants in the natural order are these: *"Consider the lilies of the field how they grow; they toil not neither do they spin; yet I say unto you that even Solomon in all his glory was not arrayed like one of these"* (Matthew 6:28).

Mankind owes an incalculable debt to the plant world. Not least among the reasons for this indebtedness is the faithfulness, variety, and unity with which plants keep their unspoken covenant with the animal world. Another reason is the ceaseless witness which plants give to the reality of God.

"Evidences of God in an Expanding Universe," op. cit.

"Facts from a Forester's Fieldbook," by Laurence Colton Walker, pp 106-113.

"Man Does Not Stand Alone," op. cit. "Chance," chapter 16.

"Our Amazing World of Nature," op. cit.

"A Treasury of Trees," chapter 9.

Greater Than The Greatest Stars

Without the presence of animals, man would be abnormal, possibly doomed to extinction. Animals are a source of food, medicine, clothing, power, entertainment, companionship and endless amazement.

We never cease to wonder about such things as the inner compass which guides the arctic tern on its 11,000 mile flight over land and sea to its nesting place at the other end of the world. What finally accounts for the unexplainable migratory instincts, and the nesting habits of our feathered friends? Why do such creatures exist? What is the source of their strange powers?

Birds, insects, animals of any species, are possibly more marvelous than the glowing stars which, without life, can do nothing but obey the laws of matter and energy.

Chapter Eight

Unlearned Knowledge and Skills: Life on Another Level

Having examined some of the marvelous variations of the plant world, we turn now to things that move, crawl, walk, swim and fly; to things that can communicate, to a degree, with each other, and cooperate in certain activities.

For good reasons, we shall start with birds. Birds are everywhere; and in a general way, they are known to all people. The number of bird species is surprising. There are more than four hundred kinds of hummingbirds in South America alone. Equally surprising to most of us is the number of bird families, and the number of species in each family, to say nothing of the total number of avian individuals.

Some families of birds spend their lives mainly on or around water. Many are equipped to swim and dive as well as to fly. Whatever the species, it has structural features of body which correspond to its instincts and habits. Bills and beaks illustrate the principle. In the world of birds, there are beaks of nearly every conceivable variety. The beaks of each species are suited to the instinctive uses which the species makes of them. The eagle's beak is adapted to cut and tear meat; the woodpecker's beak is equipped for penetrating the bark and wood of trees.

Feet also offer an illustration of how body structures correspond to instinctive action. Bird feet are of many kinds. There are feet for running, feet for swimming; feet for scratching and for catching prey; feet and long legs suited to wading. Then there are the peculiar feet of the long-toed "lily runner" which enables it to walk with safety on the large floating leaves of the water lily by distributing the bird's weight over a larger area of a leaf.

The Marvel of Wings

Wings — what shall we say about wings? How many different sizes, how many special niceties of structure, are there in bird wings? At even their simplest, wings involve complicated engineering principles. Compare bird wings with the rigid and clumsy wings that men have been able to make for their flying machines. Contrast these with the flexible and folding, highly efficient and strong wings of birds.

The two wings, taken as a unit with their frame of hinged bones and their duplicate engines of muscular systems, make up a remarkable structure. Each separate feather of the hundreds that compose each pair of wings is in itself a thing to admire. Nearly all the slowly discovered engineering principles employed in human aviation, principles that combine lightness with strength, are found in bird wings — apparently as old as creation. Where did the birds find these principles?

From what source comes the engineering adaptation represented in a wing feather? How is it that the feathers with hollow stems for lightness, minute trusses for strength, just grow from the flesh of birds? And how or why is it that hundreds of feathers of different sizes and shapes will grow side by side into the nicely fitted structures of one perfect symmetrical wing? Why is each feather positioned at just the right place and why does it grow to the exact size to fit into the feather system of the wing? Again, why do the wings of the eagle exactly correspond to the speed and power required for his predatory nature?

In contrast to the eagle's wings are the wings of hummingbirds, equally well adapted to function, yet so different. Possibly the most significant thing to remember is that, whether it be eagles or hummingbirds, the wings are exactly proportioned to the size and the needs of the species.

Alfred R. Wallace, contemporary of Charles Darwin, in an epoch-making book, **"The World of Life,"** says, "Looking at it as a whole, the bird's wing seems to me of all mechanical things that which most clearly implies the working out of a preconceived design in a new and apparently most difficult complex manner, yet, so as to produce a marvelous successful result." He added that on a single feather there may be more than a million barbs and barblets, each turning upon its axis so the upstroke of the wing lets the air through and closes against the air on the downward stroke. The barbules, he said, are linked by a "hook and eye formation," each built out of substances fully suited to the rigidity and strength required.

As we know, feathers wear out through friction with the air. When this occurs the old feather is dropped and a new one is produced in the exact place, in the exact color and structure of the one cast off.

But this is only a part of the wonderful story. The same blood that supplies material for feathers also supplies material for every other part of the bird's body. And the same mystic protoplasm builds up and renews the muscles, the bones, the skin and nerves. It supplies each feather with

the right materials for its properties and functions. Verily wings, one right and the other left, are engineering marvels — alike, yet opposite. Not one feather of the right wing will fit into the corresponding place of the left wing. What do you suppose "blind chance" knows about constructing two highly complex mechanisms such as wings, exactly alike except that one is for the right side and the other for the left side; and then bringing them together so as to function in perfect unison?

The Baffling Instincts of Birds

It is an established fact that birds do little, if anything, by processes of reason. They act instinctively. "Instinct" is a form of action or knowledge that comes, not through learning but through heredity. Birds do not have to study the intricacies of flight, or of nest building. Such unlearned reactions called instincts are among the greatest marvels of the animal world. Instincts provoke questions. Why, for instance, do living organisms respond automatically to racial needs that they know nothing about? Why are they able to do, with great skill, what they have never learned? Why does the nest building skill of the mother bird reappear in the same form in her progeny? What brought instincts into existence in the first place? And by what original process do they continue to appear in an unbroken succession through thousands, even millions of generations?

We are accustomed to saying, "Instinct guides the animal in doing this or that." That is true enough; but what guides the instinct? What capacities and processes lie behind that varying animal behavior we call "instinctive"? The word itself is as yet only a name for something we do not understand. Instinct has never been accounted for on a natural basis except possibly as DNA. However, instead of explaining instinct, recent discoveries concerning the DNA molecule only deepen the mystery of heredity and instincts.

In spite of all discoveries, life and instincts are still mysteries; and the question of what lies behind these surprising complexities is still with us.

In fact, scientific study has answered but few biological questions with certainly. Birds furnish an example. We are happy to know many things about them and to compare theories. But by proven facts we do not know why birds exist, or why they have certain capacities and powers.

Nest-Building Instincts

At a glance, it is very simple — a bird's nest! On second thought, it is visibly remarkable. Countless people have been, by turns, entertained and intrigued by the skill manifested by certain birds in their nest building. The hanging nest of the Baltimore oriole involves a mechanical skill almost beyond comprehension. By what invisible process is the parent bird guided in beginning to weave a hanging purse at the tip end of the most unstable of all earthly building sites — an elm branch, swayed to and fro by every passing breeze? What moved the first orioles to select such an improbable site for a nest? And what guided them in carrying it out with such obvious success?

Imagine that you have in your hand a standard oriole nest. If you examine it thoroughly, you will find it surprisingly strong, quite durable. It can stand the lashings of high winds and heavy rains. If you were required to construct that nest, using only your fingers and the materials the bird used, what would the finished job look like? How long would it endure the fury of winds and rain? Might you have to admit that a "mere bird," without any instruction, is able to build a more symmetrical and durable structure than you can produce with no tools other than your hands?

As building materials, the Baltimore oriole uses long strips of thin inner bark of trees, scraps of string and tiny grass stems that are long and pliable and tough. But who taught the oriole how to find and weave these materials? And how did he do all that weaving with only his beak?

Let no one be content to say **"Nature** taught the bird to do it." If one says that, he is at once faced with the question, "What is nature?" Or "What is behind nature?" To really explain birds we need a better answer than "nature."

It is reported that in the delta of the Orinoco river in Venezuela there lives a black and yellow bird called the "Giant Cacique," which as a nest builder surpasses our Baltimore oriole. It is said that the cacique's hanging nest is from four to six feet long; that it hangs like a grass rope with a commodious purse at its lower end, which is the nest proper. The nest is entered by a narrow perpendicular slit about a foot or so above the bottom. As an engineering job, done without study or learning, and with no tools or implements except the feet and the beak of the builder, such a six foot hanging nest, well suited to its functions, is an astounding achievement.

At the "bird farm" on Santa Catalina Island, off the coast of southern California, I have seen African "weaver birds" sewing folded leaves together. They took long flexible grass stems in their beaks, and, bringing the edges of banana leaves together, they sewed them nicely, "whip-stitch" fashion. Fortunately for curious sight seekers, they seem to do this for fun as well as for utility. They do their sewing throughout the year when materials are available. Millions of visitors to Santa Catalina and other zoological parks have watched the weaver birds do their clever sewing without experience or training.

Birds are facts, and their instincts are facts. Their instinctive skills have always been interesting to watch and admire. Even so, they are perhaps more important than we have hitherto thought. What is the source of their useful and appropriate actions? What is the principal meaning of their existence?

Factual answers in full may never come. Even so, it is a high privilege to pursue the answers with grateful appreciation for having such interesting creatures as birds to share our earthly habitat.

Bird Migration — The Profoundest Mystery of Avian Life

There is another phenomenon of unlearned conduct of birds about which many books have been, and are still being written. We are now to notice the marvel of bird migration and seasonal flights.

One of the really new things of the 20th century was the startling and rapid development of **human aviation.** One of the most intensive efforts in human aviation has been those directed toward perfecting dependable instruments for blind flight and safe landings on fog-bound airfields. With all we have learned thus far, still better ways are needed for giving pilots in the dark and in storms more precise certainty of location and of landing approach.

Apparently certain species of birds have had systems of flight guidance and security since the beginning of their existence. They fly not only by day but also at night over great stretches of land and water, reacting efficiently to the light and the positions of stars, and what else, we do not know. Their highways were laid out aeons ago, and are followed by millions of feathered aviators without experience or any learned response.

Man is doing well in improving the skill and the safety of his flying efforts. Still it is unbecoming in human beings to boast much about what they can do as aviators. It is good to remember that from very remote times, certain feathered aviators, without charts, metallic engines, heavy fuel tanks, and clumsy landing gear, have made annual flights, greater than the distance between New York and Paris. More than 100 species of common birds find no difficulty in summering in North America and again wintering in South American during the North American winter. Nineteen species of shore birds are said to breed north of the arctic circle in summer and then migrate to South America during winter.

But while admiring this remarkable ability we should not give the birds too much credit for what they do so consistently and so well. Birds are creatures of instinct rather than reason. Primarily, birds live and move by inherited knowledge, by something built into them generation by generation, not by observations or any principle of reasoning in their own heads.

Wholesale Migration

Migration is apparently the most complex of all avian instincts. It is of use chiefly to birds that inhabit the temperate zones of the earth; zones where summer homes and food supplies are found for four or more months of the year, and then are buried under a mantle of snow and ice for long periods. For this reason, all but a "corporal's guard" of birds found in our northern states and in Canada must go south every winter before the onset of cold and resulting starvation. With them it is "migrate or die." Many birds do not mind the cold of northern winters. If they could find a source of food in winter, no doubt they would remain throughout the year. But with their food sources covered with snow and ice, migration is a necessity; and they always know in which direction to go to find food, and when to begin their journey.

That knowledge — **knowing** where to go — is rather remarkable, is it not?

Some Examples of Migration

As a result of careful observation, much has been learned of bird migration. It is known that a given species will start at about a certain date. It is also known that many species fly far above the earth; that most of them will land within given dates. Bird calendars show approximately

when they will return on these same routes. But beyond that, it is doubtful if men today know very much about the marvel of wholesale migration. It is a hazardous business for the creatures who do it. In the main, birds are small creatures, they have many enemies; and life poses countless perils for them. The journeys some species make are very exhausting. According to our view of things, long flights represent tremendous risks. How did these birds ever get started on such systems? And why is each succeeding generation able, with such efficiency and success, to accomplish these long flights on the first try?

The Champion Traveller Among Birds

The Arctic Tern is said to be the world's most extraordinary animal traveller. This tern is named arctic because it goes from pole to pole. It is said to nest as far north as land goes; that is, as far north as the bird can find anything stable on which to construct its nest. So "arctic" are the conditions under which it breeds that the first nest found by man in this region was a little more than 82 degrees north latitude. It contained a downy chick surrounded by a wall of newly fallen snow which had been scooped out of the nest by the parent. It had been reported as wintering in the antarctic summer as far south as 74 degrees south latitude. The distance between the two furthermost points at which the Arctic Tern has been observed is 11,000 miles. During the year, therefore, it travels 22,000 miles at a conservative estimate.

Instinct That Rivals Reason

Someone has said that the regular semi-annual migration of birds is to be regarded as the high water mark of animal instinct. Some observers feel that it equals or excels reasoning in its results. The hummingbird, for instance, is one of the frailest of feathered creatures, not larger than the human thumb, feathers and all; so small that any gust of wind seemingly could dash it to the ground and destroy it; yet it still goes its way, makes its migration, completes the cycle of existence, with no other guide than the automation of its instincts.

There are other bird species, almost as small as the hummingbird, and just about as helpless according to appearance, which by instinct have survived as a species all the hazards of thousands of years. Could reason do it better? Could reason do it as well?

The Migratory Instinct Is No Mistake

The so-called "barren lands of the north" are not barren all the year. Far from it. They produce a quick-appearing and quick-vanishing abundance of food. So, the instinct which leads birds at one end of the world to the other end at just the right time, when food is present in abundance, is not a blindly treacherous urge. It works. The migration cycle is exactly timed as to arrival and departure. The food is abundant while it lasts, but it can give out quickly and disastrously. Those birds that fatten on Arctic food sources must arrive at the right time, and then depart within safe time limits.

Intelligence is apparent in this migratory cycle, not in the individual bird, but in the adaptive aspects of the process as a whole. It is admirably timed and wonderfully efficient. But our chief concern now is to identify the source of this adaptive, migratory life which hinges upon the functioning of complex avian instincts. Without a Creative, Controlling Intelligence, how could such intricate and efficient systems have begun? And how else could they be maintained for thousands of years?

The Instincts of the Honey Bee

After this hasty glance at the instincts of bird specimens — another of the mysteries manifested as "Life" — let us give brief notice to the instincts of an insect, one which has been called a "worker with wax," but is better known as the "honey bee." The honey bee is one species among a great number of social insects.

Much has been written about the marvels of the bee hive. The social, or community, life of the hive is almost perfect in loyalty and regularity. Three kinds of bees — queen, drones, workers — all different in body and in functions — live together as a marvelous social unit. The individuals die, new swarms are sent out, but the life of the hive — all hives — goes on indefinitely — barring disaster — without change of system.

What holds members of the hive together so effectively and so fortunately? How is it that 50,000 to 75,000 insects work together with such perfect loyalty to community interests?

For the present, the answer has to be, "They are made that way; they cannot help it." Each bee, whether drone, worker, or queen, is a specially formed mechanism. It cannot change its nature. Neither drones nor workers nor queens alone can maintain the hive or perpetuate its life. But

together they can do the job with all but perfect success.

A Worker in Wax

Wax is the structural material of the honey bee. He builds only with wax. It is said there are some 5,000 species of bees. All are industrious and ingenious as to their instinctive capacities. But it is only the social honey bee, a worker in clean wax, that has become so very valuable to humanity, and hence has come in for a great deal of study. Wax making is a pivotal fact in the value of the honey bee to man. Beeswax is a remarkable product produced only in "laboratories" of the bee hive. When honey is retained in the bee's stomach a certain length of time, it becomes transformed to appear elsewhere in their bodies as beeswax.

Wax is a costly substance to the bee. We know that it takes from 16 to 20 pounds of honey to produce one pound of wax. The wax is secreted by glands on the surface of the rings on the under side of the bee's hind body. It appears as thin scales which are removed by the bee's hind legs and passed to the mouth where wax is worked up for use by those that build the comb and model the six-sided cells.

Wax making is a very special activity with honey bees. A number of workers appear to be temporarily charged with the performance of this function. It is said to take them 24 hours to produce the plates of crude wax. A peculiar rite is observed by the group engaged in wax making. The bees hang together in festoons, attached to each other by the feet only — but no one knows why. Those worker bees which produce the wax do not build the cells. The wax is brought to a group of workers that function as constructionists. They build the cells which compose the comb.

Problems of Design and Economy

As said above, a considerable amount of honey is converted into a small quantity of wax. Therefore, workers use it frugally. There is no waste; they make the maximum structure out of a minimum of material. That is the reason, really, for the six-sided cells. Every part of the walls of one cell forms a part of the wall of the neighboring cell. This is also true with the base of the cell which forms part of the base of three other cells on the other side of the comb.

If human artisans had to build such a structure they would have to resort to mathematics. By contrast, the bee doesn't consult any geomet-

rical theorem. He simply goes to work; and mathematicians are unable to find the slightest flaw in the bee's work. A small quantity of wax is deposited by one bee to which others add in succession until a sufficient quantity is amassed for commencement of operations. Then a bee begins to excavate it in the foundation of a cell. She works for a time, then steps aside and another worker takes over and works for a time. No one bee, therefore, completes a cell. Each is built up by a number of workers laboring in succession. When the bottom begins to take form, other bees work on a corresponding cell on the other side of the wax wall.

It will be seen that the three plates composing the bottom of the cell each have two free margins, six in all. It is by building up the wall from these margins that the hexagonal form of the cell is achieved. As the building proceeds, the workers who are making wax come and go, leaving additional contributions of wax for the builders to manipulate.

Again our question is not, "What are the facts?" but "What do these highly specialized, coordinated insect activities mean?" They do not mean that the individual bee consciously plans and executes its work. It appears rather that the bee is a living, automated organism, doing all the things it does because it cannot do otherwise. "It is made this way," very precisely. Could an aggregation of mindless atoms make such an automaton as a bee? Could matter and energy alone create a colony of bees manifesting the perfect cooperation of the bee hive?

Varying Characteristics Among Bee Species

Among the thousands of bee species, nearly every conceivable variation of characteristics is to be expected. A considerable number are gatherers of nectar, as are the honey bees; others are parasites, living off the labor — or the bodies — of other insects. Some species bore into the stems of plants and there make their boroughs for depositing eggs.

Much popular interest is given to the large "carpenter bee," known to many as the "bumble bee." The bumble bee bores round tunnels into solid wood, choosing, in civilized regions, fence posts and other exposed parts of wood buildings — the ceiling of open porches, for instance. The bored tunnel of the carpenter bee is nearly a half inch in diameter, going straight into the wood to the appropriate length of the bee's body and then turning at right angles with the grain of the wood for twelve to fifteen inches.

It takes an intricate combination of very precise instincts, plus some

excellent build-in "cutting tools" to "automate" the carpenter bee.

There are also "mason bees," which derive their name from the manner in which they construct earthen cells under stones, in the burrows of other bees, and also in decaying wood, old walls, and elsewhere. These bees show a great diversity of habit, constructing their cells of mud, earth or clay mixed with pebbles, and wood scrapings. All their structures are glued together so firmly that they are smooth inside. Ten to twenty cells are usually found together, and each one contains a store of honey and pollen for the larvae, of which only one is laid in each cell.

There are "mason wasps" as well as mason bees. One species chooses for its building site a sloping sand bank which is hard and firm. Such earth can be tunnelled safely but only with much labor. This wasp is a "miner" as well as a "mason." It bores a cylindrical cavity two or three inches deep which branches at that depth into three or four cells. It uses the excavated material to build a peculiar tower at the top, apparently to make it difficult for any parasitical insect to invade its domain.

The nest at the bottom is supplied with a number of small green caterpillars. These are first stung so that they have little or no power of movement. That takes very accurate stinging — to paralyze, but not to kill. The egg is laid in the far end of the cell so that, on hatching, the larvae first attacks the caterpillar that was made immobile. One authority says that after filling up the cell with twenty to forty caterpillars, the mason wasp takes down the tower and uses the material to solidly close up the mouth of the nest. The economy of labor involved in all this is strikingly like the operations of the human bricklayer who piles a stack of bricks within reach of his hand from which he can conveniently retrieve them for building his wall.

Paper Makers

The best known wasps to the average person are those that inhabit attics and barns. These are social wasps. They manifest an elaborate community life comparable to that of the honey bee. These wasps make their "combs," nests, of paper. They are, in fact, the first paper makers of the world. They manufacture paper from wood pulp, something which man has learned to do only in recent times. They gather wood fiber (from old weather-beaten fence boards, or planks), and then mix these fibers with saliva, and put the pasty pulp into the thin layers of (round or hexagonal) cells of the nest.

Notice it: this brief list of insects includes bees that work with wax; bees that are carpenters, working with wood; wasps that are builders with sand and mud — but all of them are automatons, working with "built in" inherited instincts, exhibiting amazing skill in construction and ability.

Since none of these made themselves, what would you say is the most logical source of the intelligence they display?

Other examples of animal instincts and behavior could be given at great length. But these, examined in brief, are sufficient to illustrate some reasons why many people believe that living things had a living Creator. There are too many adaptations and adjustments, too many close correlations between means and ends in the existence of living things to be accidental, unordered or unguided.

Annotations

Life Has Power

If it were not so generally taken for granted the power of living things would excite constant wonder.

Roots, for instance, at their growing points are tender and hair-like. But they can, by the power of growth, widen crevices in masses of stone, lift heavy paving blocks, and undermine heavy walls. Roots can penetrate minute cracks in the joints of pipelines in search of water.

By the sheer vitality of growth, plants can cover abandoned sites of cities, restore stretches of devastated landscape, prevent erosion and make streams difficult to navigate. The water hyacinth is a costly nuisance in this respect.

The aggregate power of life in plants to modify their environment is inestimable. But more strikingly evident and useful is the living power of animals. This living power working through the muscles of animals and man has made history and given us the wonders of antiquity.

Muscle power quarried, assembled, and erected the stones of Egypt's pyramids. Until recent times, muscles were the power source that built all our cities, cleared all the forests, cultivated all the crops and moved all the goods over the roads of the world. "Muscle power" — what is it? Certain kinds of living matter have power to contract and relax at the will of the organism possessing it. Beyond that there is not much more known at present.

As best we can tell, the power of living things comes from life. But

life itself is a mystery; it has never been traced experimentally to its ultimate source.

Contextual Readings

"Our Amazing World of Nature," Reader's Digest Association,

"Life in the Wilderness," chapter I.

Genesis 1:20,24,25

Automated Intelligence

Nature's creatures manifest an obvious intelligence, an undeniable adaptation of organs and functions to immediate ends — life for the individual, and for the species.

For months a seed lies dormant in the frozen soil of winter. Then as temperatures rise, some timing device within is activated. Organic processes inside are set in motion. Close-fitting seed coverings break; roots appear and grow downward; a stem emerges and grows upward as though by conscious direction.

A bird, moved by something we call "instinct" begins to build a nest, choosing materials appropriately, and building skillfully. When the nest is finished, eggs — highly specialized, complex things which chance cannot produce — are deposited in it. The eggs are then incubated, and by instinct the fledglings are fed just the right food to make them grow and mature.

Beautiful are these manifestations of instinctive or "automated" intelligence. But "automated" intelligence is produced by free, Creative Intelligence, is it not?

Chapter Nine

The Greatness and Mystery of Nature

Dante expressed it beautifully, and also scientifically, we believe — ”Nature is the art of God.”

From the earliest centuries of civilization many classes of people, poets, artists, philosophers and scientists have tried to understand, describe, control — even to worship — nature.

From the beginning of recorded history, nature has given pleasure and inspiration to mankind. And it has done more than that: it has aroused unceasing speculation as to its origin and meaning. The more we learn of nature, the more wonder she provokes.

For many people, it is apparently enough just to know that nature exists. But to others, the undeclared “miracles” on constant display wherever we turn awaken a spirit of awe, posing question after question beyond categorical answer. The silent mystery of a flower; the flight of a bird; the dive of a “fish hawk” for a fish; the eight-legged spider spinning his web without getting entangled; the glow of the firefly on a summer evening; the call of a whippoorwill out of the darkness; and the streak of a meteor across the sky — these things impress us with their beauty, their intricacy, and their mystery. They are but a few of the millions of wondrous spectacles representing the greatest things known to human experience — the natural universe.

After all these centuries of wonder and inquiry, man has not found an explanation of nature covering the broad scope of life, mind, and spirit that is satisfactory to himself. To explore and explain that complexity called “Nature” by intellectual processes alone is probably beyond the capacity of human beings. The task of understanding the amazing migration of birds, or the fascinating relationships between the plant and the animal world, will never be fully achieved. But past experience suggests, also, that the facts to be learned and the benefits to be experienced from a ceaseless study of nature will neither be exhausted nor wasted.

Nature? What Is It?

We have assumed thus far that everyone knows what is meant when we speak of nature and the natural. But since nature includes so much being manifest in so many ways, it is obvious that the word would mean

different things to different people. For the sake of fairness, we shall narrow its meaning somewhat.

First, everything that exists in a phenomenal sense can be called "nature," and described as "natural." All the laws, all the matter, processes and effects, direct and indirect, that are part of the cosmic order make up nature in the broad sense of the word.

However, this definition is too inclusive for present purposes. We shall use the word "nature" with primary reference to the phenomena observed in our world and its environment. "Nature," and "the natural," will connote everything non-miraculous which characterizes the environment in which we live. In the domain of the non-miraculous, nature will often refer to the world of plants and animals.

Nature and the Sciences

The earth and the universe supply the subject matter and the increasing data for all the physical sciences. Most of the sciences deal with natural phenomena and with the techniques for understanding and using the knowledge they furnish.

Nature's many aspects have invited man's attention in every century. For a long time investigation along most lines was grouped under a few broad areas, such as physics, chemistry, biology, mathematics, astronomy. In recent centuries each of these, through expanding interest and subdivision, has become a group of science. There are various kinds of physics, various fields of chemistry, biology, and comparable subdivisions in other fields. The fact remains, however, that all physical sciences deal with the same world, and the same natural system.

We are not to infer that because there are many "natural sciences" there are many "natures." Nature, in the main, is one. It is a many-sided, interlocking, orderly whole in which everything plays a functional role. In relation to the earth, nature stands forth as a marvelous, autonomous, self-perpetuating, highly mechanistic system, but not wholly independent.

Mysteries That Challenge Attention

Why does this many-sided, autonomous, intricate mechanism, called Nature, exist? Why is the earth with its spherical shape, its exact size, movements and particular velocities, here? Why is the earth so favorably placed with respect to distance from the sun? Why is three-fourths of its

surface covered with water? Why does this water function so admirably as the regulator of earthly temperatures — temperatures favorable to the existence of life in many forms? And why does life exist at all?

Many people are averse to facing such questions. But, like it or not, problems of origin and existence will not go away. Questions of "why" demand answers — or at least, honest efforts to find answers.

Some serious seekers want answers to come in naturalistic terms. Some investigators hold that absolute or final answers are not possible. If that be true, the next best thing scientifically would be to accent the tentative view that accords best with the known facts, and wait, open-mindedly, for further light. For those believing in **Nature,** and Nature alone, this is all they can do.

Those who expect final answers to come in other than naturalistic, or deterministic terms, generally begin their search for facts with faith in a Creator, not with faith in "Mother Nature" as an impersonal mechanism.

The Biblical Answer as to Nature's Origin

Many among those interested in the whence, how, and why of existence, admitting the value of theory and research, believe that these can be supplemented by revelation. The Bible, for instance, offers an explanation of nature's origin and continuation. This biblical record should not be hastily cast aside. Experimental knowledge can be supplemented by faith.

It is quite significant that the Bible's explanation of how the world, with its ordered and orderly processes, began, is the only account, prior to the 16th century A.D. that has any semblance of harmony with known facts and plausible concepts. It is the only record of creation written prior to the 16th century which is read seriously today. This is a fact of expanding significance.

The Bible's first words (Genesis 1:1,2) picture the world in its beginning as a dark, chaotic, water-covered body. Then God, the Creator of this unorganized, non-functioning mass of matter, said *"Let there be light, and there was light."* The coming of light was followed by the separation of the light from the darkness, the beginning of day and night (Genesis 1:3-5).

Next in the Genesis account, there was a separation of the waters upon the earth and the waters enveloping the earth, in vapor form, no doubt. A space was made to exist between the clouds above the earth and the waters

upon the earth (Genesis 1:6-8).

According to this record (Genesis 1:1-8), nature began to come into existence when God formed the raw materials of the earth in the beginning. "Order" and "system" began when light was brought into the world, and the light and darkness were systematized into a succession of days and nights. Progress in setting up the natural order continued with the separation of the water in liquid form from the clouds of vapor that float above the earth.

Aspects of the whole natural system which man has known for thousands of years came a step nearer completion when God said, *"Let the waters upon the earth be gathered together in one place and let the dry land appear."* That is what the natural world's surface consists of — land and sea. And the sea (ocean) is today one body of water as the Bible says (Genesis 1:9). The continents are not linked in one land mass but the sea is one continuing body.

Next, God said, *"Let the earth put forth grass, herbs yielding seed, and fruit trees bearing fruit after their kind, wherein is the seed thereof, upon the earth; and it was so"* (Genesis 1:11).

According to the Genesis record of the origin of the natural world, the first form of life on the earth was plant life: *"herbs yielding seed, and trees yielding fruit after their kind."* This chronological priority of plant life over animal life has been scientifically confirmed by a study of the fossil remains of plants and animals.

Just here let us remind ourselves that one of the primary essentials of life on the earth is light. Countless living things exist in our world because of abundant, life-giving light. Genesis 1:3 tells us that God's first step in bringing order into the dark and formless earth was to say, *"Let there be light."* Light is mentioned again in verse 14 where the sun, moon and stars are mentioned as coming into existence on the fourth day of the creation.

After this we are told that God said, *"Let the waters swarm with swarms of living creatures, and let birds fly above the earth in the open firmament of heaven"* (Genesis 1:20).

The creation narrative continues by saying that *"God created the great sea monsters, and every living creature that moveth, wherewith the waters swarmed, after their kind, and every winged bird after its kind: and God said that it was good. And God blessed them saying, Be fruitful and multiply, and fill the waters in the seas, and let birds multiply on the*

earth" (Genesis 1:20-22).

Whether or not this is the way it happened in the beginning, that is the way it is in the natural world today. There is no evidence to cause us to doubt this account in Genesis, which claims to be inspired and revealed by the Creator Himself. Even now, the waters swarm with living creatures, great and small, including more species than have ever been described. And birds do exist in great numbers flying above the earth not only for short distances, across continents and seas for thousands of miles.

The last thing recorded in Genesis about the origin of the natural world concerns the creation of man, a creature made in *"God's image."* Man is by far the most important being that inhabits the earth. To him was given *"dominion"* (probably meaning not only power, but absolute superiority) over all other living things.

What we have in Genesis, then, is a brief, highly condensed account of the progressive creation of the natural world. All the basic processes now known are named or implied in chapters 1 and 2. Though condensed into a few hundred words, the record is amazingly logical. Most of the sequences, as well as the characteristics of the things described, have been confirmed by modern science.

Though the earth is just one planet of our solar system, which in turn is just one system among the millions of the galaxy known as the "milky way," it is amazingly habitable by man and by trillions and trillions of plants and animals comprising a natural biological system — so dynamically marvelous that words can never describe it.

Several facts should be specifically noted here. First, the earth with its natural features and systems cannot be denied. Second, the Genesis record of its creation has not been proven false. Third, there is no proof — nor even evidence — to indicate that nature is self-existent, or that nature created the world and its processes. The facts so far known — and the most reasonable inferences from these facts — all indicate that nature is a *creation*, not a real *creator*. As a creation, nature is neither small nor simple. She is vast, intricate beyond description, and highly autonomous. Her powers are immeasurable. Her self-repeating cycles of change and fixity reveal a degree of order, system and intelligence which mechanism alone cannot explain. Nature, in this sense, deserves profound respect, continuing study and appreciation — but not worship as an entity or as deity.

Nature Is Not God

Poetically speaking, nature is capable of "creating" life, and of "giving" us this or that as a conceptual "goddess." But when one speaks factually as a scientist, and says, for instance, that "nature formed life from non-life," he forfeits the privilege of figurative language and makes an affirmation based on nothing surer than philosophical opinion. Philosophical authority is open to suspicion since every view held by one group of philosophers is denied by another group.

The doctrine of "Naturalism" which affirms that nature is self-existent, that it alone is sufficient to account for everything else — that there is nothing before or after nature — is not necessarily true, or even well-grounded, philosophically.

The weakness in the theory can be seen first in the fact that "nature" in this sense is but a synonym for "the universe." The universe is "everything," of course. To say that "Nature" is everything does no more than equate it with an abstract phrase — "The Universe."

But identifying nature with the universe does not make nature eternal or creative. In preceding pages we have cited scientific facts showing that the universe had a beginning at some point in cosmic time, that it is "running down," that its available energy is being constantly diminished; that by purely "natural" processes the universe will eventually grind to a halt, and physical light and life will cease.

Scientifically considered, the universe cannot be considered eternal.

If the universe is not eternal, then "nature," which for many is the universe under another name, is not eternal. For that reason, there is no strong scientific ground for assuming that nature is the ultimate, self-existent reality.

On the other hand, since nature is strikingly manifest as a vast, intricate, autonomous mechanism, it is structurally "a machine." But since every machine whose origin we know had a beginning from outside itself, it can be reasonably inferred that nature did not begin itself. And since machines exist to perform functions not revealed within themselves, we infer that nature is a *means*, not an *end*. As a means, it would not necessarily reveal the end for which it was made.

Though no function for nature as a whole can be shown with mathe-

matical finality, there are certain clues. For instance, nature shows great regard for life. We have noted that the earth is remarkably adapted for the maintenance of life at stable and complex levels. The earth provides all the chemical and physical conditions necessary to life. It clearly points to man as the highest form of life on earth, the being for whom other creatures exist.

From what we observe on earth, it looks as though nature's main function, amid all changes and all hazards, is to keep **life succeeding life.**

Nature Rules — But Not Supremely

Whether anything comparable to the favorable conditions for life found on earth exists anywhere else, we do not know, and shall not presume to guess. But it is not wholly unreasonable to believe that nature, as a created fabric, has something to do with the Creator's interest in Life, Mind, and Personality, the things most like Himself — as a spiritual, not a physical, Being.

It fits the facts to say that nature as a mighty system rules the universe — *almost.* Nature is great, but not supreme. We believe it is subject to something beyond itself — "something" eternal, invisible, and omnipresent.

That something, or Someone, we should say, is — God. Nature points to God — more than to itself.

It is just as rational to think of nature as God-created as to think of it as self-created — and much more logical, according to the views of many good thinkers.

Annotations

A Remarkable Clock

In a book he published about 1958 under the title, **"Who Goes There,"** J. Wallace Hamilton mentioned a new and wonderful astronomical clock that had been put on exhibition in the city of Copenhagen. He said it was hailed as the world's most complicated clock; and that it had been 40 years in construction. The man who designed it died 10 years before its completion. Though highly accurate, it is not described as perfect. It was expected to lose two-fifths of a second in 300 years. The clock is made to compute time in terms of days, weeks, months and years; also to calculate the movements of certain stars for thousands of years. It is to be further unique in that certain mechanisms of the clock are not to move until 25,000 years have passed.

Whether this unique clock is performing as intended, I do not know. I have not verified any of the claims made for it. As a rare mechanism, it is mentioned here only to illustrate a principle involved in automation. For present purposes, we assume that the clock is all that it was designed to be.

The thing that concerns us now is this: whatever the clock's marvelous features, it had an inventor (or inventors); also builders, and finally technicians to test its accuracy and worth. In brief, the clock itself was not self-conceived, self-made, nor was it self-interpreted or evaluated. Being very intelligently engineered and perfected to do certain things, it may, to superficial viewers, seem to be almost completely independent of everything outside itself. It is not wholly independent, of course; but it appears to have little or no need of its makers.

Regardless of appearances, the clock is not by any means independent of its designers and users.

"Nature" may be much like this 25,000 year clock. Nature, of course, is immeasurably more intricate than any man-made clock. Nature's numberless variations and detail combined with fixity of certain functions, cause nature to appear highly independent. But actually, all the automatic processes, systems, organic or mechanical, may be mechanisms of outside control. Nature works with striking faithfulness to its systems and functions. At times it seems quite personal. It seems self-existent, until we begin to consider the improbability of certain non-living substances which life requires — protein molecules — for instance.

The various natural protein molecules on which life depends are not even alive, but they are so complex that the mathematical probability of even one such molecule being formed by chance alone is said to be so remote as to be practically inconceivable. If one protein molecule is impossible by chance, certainly life and the innumerable coordination we see in the natural world are beyond the mechanisms of nature alone.

Nature, then is primarily a *"creation"*; only secondarily a *"creator."*

Contextual Readings

"Miracles," C. S. Lewis, Macmillan Co.

Should be read in its entirety.

"Protestant Christian Evidences," Bernard Ramm, Moody Press.

"Rebuttal to Those Who Deny Miracles," chapter V.

Section Three
Special Evidences Of God
Words that Are Spirit and Life

"...My word shall not return to me empty; it shall accomplish that which I purpose..." (Isaiah 55:11).

The Bible

"Within this sacred volume lies
The mystery of mysteries;
Happiest they of human race
To whom the Lord has granted grace
To read, to fear, to hope, to pray,
To lift the latch and force the way;
And better had they ne'er been born
Who read to slight, or read to scorn."
— Sir Walter Scott

Chapter Ten
The Bible — A Collection of God-Inspired Writings

Sir Walter Scott's words about a "sacred volume" refer to "The Bible," a strange book.

Though bound in one volume, the Bible is actually composed of 66 separate writings, generally referred to as "books," though some of these consist of only one page.

The text of the Bible was a long time in completion. Between its first and its last writings there was an interval of 1300 or 1400 years. In spite of this long time interval, and other factors that make for disparity, the Bible manifests a remarkable unity of its parts.

The World's Masterpiece

The writings which make up the Holy Scriptures, the world's greatest religious collection, are unique in many ways other than their unity. In

several respects they are superior to all other religious writings. The Bible has the distinction of having given to humanity our highest concepts of God and of man. Its contents as a whole constitute the most exalted formulation of ethics and morals ever penned. These unequalled moral and spiritual declarations have done more to inspire acts of love, self-denial, righteousness, and devotion to truth than all others. In a strong, outstanding sense, every teaching of the Bible is monotheistic. With unique consistency, it recognizes and extols one God and one only. This is a very significant fact.

Because of these and other characteristics, the documents of the Bible outrank all other writings of both the ancient and modern worlds in the high quality of their teachings, the form of worship enjoined, in purity of ideals, and the glory of their promises.

This great book is available to the present world in over a thousand languages. This fact indicates a continuing interest in its message, in spite of its antiquity. Behind the various versions of the Scriptures there lies a vast amount of consecrated and scholarly labor by linguists, revisers, copyists, translators, archaeologists, critics, commentators, and others. To those wishing to understand the meaning and value of the Bible, some acquaintance with these labors is highly important. Fortunately, many helpful books about the Bible are available everywhere in the western world. They include commentaries, concordances, lexicons, histories, archaeological studies, and such like.

Be it remembered, then, that the Bible is the world's preeminent book in availability. More copies of it have been printed and circulated than anything else ever written. It has been called "the world's greatest masterpiece." It was the only book honored and used by Jesus Christ. He said of the scriptures: *"They are they which testify of me."* The Bible is the one set of writings that explain the life and mission of Jesus Christ. To understand Jesus, one must go to the Bible. The greatest person who ever lived on the earth is rightly identified only by the greatest book ever known.

Writings with a Strange History

The Biblical writings have an extraordinary history. As stated in the beginning, they were produced very slowly, and apparently without human plan. They were not all written in the same country, in the same century, in the same language, or by the same man. The earliest Hebrew scriptures were produced in the time of Moses; the last Bible writings appear to have

come from the pen of the Apostle John, possibly near the close of the first century.

In their original form, the 66 books of the Bible represented three languages — Hebrew, Greek, and Aramaic. At least 35 or 40 writers were engaged in their production. These writers represent nearly every social and economic plane. Some were shepherds, some fishermen, some servants or exiles in foreign lands; others were leaders, scholars, and kings.

In a book so marvelously composite, made up of such divergent parts, composed at such remote periods of time, and under such varied circumstances, by so many persons — what would you naturally expect? Variance and discrepancy; contradictions, discord; total lack of unity.

In a point of fact, what do we find? Unexpectedly we see that every part of the Bible, rightly considered, fits every other part. One ever-increasing, ever-deepening thought pervades the Bible as a whole.

As average men and women, how shall we account for the unexpected unity of the Bible? There seems to be no satisfactory explanation — all circumstances considered — to the remarkable unity revealed in the Bible, other than that given by Peter: *"...men spake from God, being moved by the Holy Spirit"* (2 Peter 1:21).

Most average people, in view of the undeniable facts, believe that the Bible is a special revelation from God to man. This conclusion, ultra simple in statement but sublime in meaning, explains the unique excellencies, strange unity and undying merit of the "sacred volume" praised by Sir Walter Scott.

The Bible itself makes claim to divine inspiration. From beginning to end, the books are characterized by reported revelations and communications from God to man. According to the Bible, God made very significant revelations of Himself and of His will at various times and in various ways (Hebrews 1:1,2). These communications came not to mankind as a whole, but to certain chosen messengers. This is definitely affirmed in 2 Peter 1:21; 2 Timothy 3:16; and Hebrews 1:1,2.

"God having of old time spoken unto the fathers by the prophets by divers portions and in divers manners, hath at the end of these days spoken unto us by His Son whom He appointed heir of all things, through whom also He made the worlds" (Hebrews 1:1,2).

"Every scripture inspired of God is also profitable for teaching, for

reproof, for correction, for instruction which is in righteousness..." (2 Timothy 3:16).

If these statements are true, then we should expect the writings of the Bible to be superior to all purely human thought or language. In addition, we should expect to find various evidences of this superiority expressed or manifested in factual terms which people can accept by faith on a basis of reason (Hebrews 11:1).

Evidences of Biblical Authenticity

Many lines of evidence support the Bible's claim to being God-inspired, **"God-breathed"** (2 Timothy 3:16), in contrast to purely human productions. Of these we shall consider but two. The first can be stated like this: The Bible shows its super-human origin by the excellence of its contents, the superiority of its doctrines.

The Doctrine of God

Consider first its teaching about God. In all the history of human thought, nothing ever written equals the Bible's exalted, profound, all-sided declarations concerning God.

As the Bible reveals Him, God is in the highest sense a personal being. Being **personal,** God **knows, feels,** and **wills.** He can reveal Himself to other personal beings such as man.

The God of the Bible is also a Spirit. Jesus declared that truth in just four words, *"God is a Spirit"* (John 4:24). As a spirit, God is totally different from, and superior to, everything material, mechanical or physical.

The God presented in the Bible is also one, though manifest in three personal aspects as the **"Father,"** Christ the **"Son,"** and the **"Holy Spirit"** (Deuteronomy 6:4-6; Matthew 28:19). God is also holy, absolutely free from all that is vile or evil. In this sense of absolute holiness, the God of the Bible is immeasurably different from the imaginary gods of the pagan nations. Their gods were not considered "holy,"and they required no moral qualifications of their worshippers.

The God of whom Moses and all inspired men wrote is omnipotent, omniscient, and omnipresent — inconceivably great in power, knowledge and presence.

Though so great and mighty in His universe, God is mindful of all His

creatures. In spite of their sins, he deals with human beings not only in justice, but in loving kindness and tender mercy.

Still, the gracious attributes of God do not end with mercy. The Bible reveals the maker and ruler of the universe as a God of love, love being the very essence of His nature. This truth is declared by the Apostle John, *"God is love"* (1 John 4:8,16). God's love is perfect, not sentimental or maudlin or self-centered. He hates sin, and punishes impenitent sinners. It is an aspect of God's love that He is changeless — the same *"yesterday, today and forever;"* always righteous, faithful, good.

The preeminence of the Bible in its monotheistic teachings is indicated by the fact that there are three outstanding monotheistic religions in today's world. Of these, *Judaism* and *Christianity* are based directly on the Bible. The other, Mohammedanism, the last of the three to come into existence, drew its monotheism from the Old Testament writings. As to its monotheistic stress, the Bible stands alone. No comparable teachings from any source present a concept of deity that even approximates the greatness and sublimity of what this unique book reveals about the one God in whom *"we live and move, and have our being."*

The Teachings About Man

The Bible also presents a distinctive and exalted line of teachings concerning man. According to the Bible, man is a unique, personal being. Mentally, morally and spiritually, he is immeasurably superior to all other creatures that live on the earth. Man was made in the image of God; he is capable of fellowship with his Creator, of knowing right from wrong — capable, also, of choice between good and evil. Though prone to sin, man is not compelled to sin; and even in sin, he is capable of repentance. In God's sight, man is worthy of redemption at any cost.

The eighth Psalm asks and answers a question about man: *"When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained; what is man that thou art mindful of him? And the son of man, that thou visitest him?"* Then the Psalmist gives this answer: *"...thou hast made him but little lower than God, and crownest him with glory and honor. Thou makest him to have dominion over the works of thy hands; thou has put all things under his feet"* (Psalm 8:3-6).

In Ezekiel 18:4, we find these words: *"The soul that sinneth, it shall die."* In Romans 3:10, it is declared, *"There is none righteous, no not*

one." In Romans 6:23 we are told that *"the wages of sin is death; but the free gift of God is eternal life in Christ Jesus our Lord."* In Isaiah 55:7 the message is, *"Let the wicked forsake his way, and the unrighteous man his thoughts; and let him return unto Jehovah, and He will have mercy upon him; and to our God, for He will abundantly pardon."*

Out of the depths of guilt, man can call upon God, and be heard. Man, according to the Bible, is a spiritual as well as a physical and mental being. As a personal being, living in a physical world, he is a combination of the **physical, the mental,** and **the spiritual.** In this abode, man is subject to the physical laws of the universe, but he is no automaton. As the Bible reveals him, man, under God is capable of immeasurable, eternal greatness. In choosing, under evil, to turn from God and walk in his own way, man subjects himself to immeasurable ruin.

Nothing reveals man's contrasting potentialities quite so clearly as does the Bible. Nothing interprets him as accurately and fundamentally as does the Bible. Anthropology, for instance, after all its searches, has added nothing basically new to what God's Word reveals about humanity.

Bible Ethics

As a book of ethics, the Bible is unequalled. In its pages, sin, evil, injustice are everywhere condemned. Righteousness is commanded and commended. And, everywhere, its writers call for genuine righteousness, a righteousness of heart, not hypocritically of outward show or legal pretense. God makes no excuse for hypocrisy.

Though God in His moral nature is love, He is unrelenting in dealing with the impenitent. The Bible declares that God will *"by no means clear the guilty"* (Numbers 14:18). Nations and peoples, from the earliest times, have been divinely punished, but always because of long continuing, impenitent lawlessness. God has declared in plain terms that He *"will punish the world for its evil, and the wicked for their iniquity"* (Isaiah 13:11).

In every sense, Bible ethics are high. This fact is illustrated in the Ten Commandments, in the Sermon on the Mount, in the 12th chapter of Romans and in many other selections.

The Soberness of Bible Teachings

The Bible stands in sharp contrast to other writings as respects the soberness of its teachings. As already stated, nearly every condition

that makes for disparity, contradiction and extreme views characterizes the circumstances under which the Bible was produced. But it is a remarkable fact that in spite of all that would have favored disparity and extreme views, the Bible manifests a sober unity that circumstance alone cannot explain. From beginning to end it teaches the same great doctrines regarding man, morality, immortality and salvation. There is not a contradictory teaching from Genesis to Revelation in the basic doctrines of the Bible. To be sure, certain truths were **progressively revealed;** but nothing taught about fundamentals at an early time is contradicted at a later time. Only quibblers and determined fault-finders stumble over apparent discrepancies which invariably have no bearing on things essential.

The writings of the Bible have none of the characteristics of the excited propagandist, or of the imaginative enthusiast. All Bible events — even the most momentous — are described in a calm, factual, dignified way. There is nothing in the Biblical record of events to suggest that writers were over-emotional, fanatical or out of touch with reality. Some of the prophets were deeply moved at times, but never incompetent or given to exaggeration.

Comprehensiveness of Bible Teachings

Bible teaching is not only strikingly sober and fair minded; it is also comprehensive. Its teachings include all sides of vital questions. The Bible is broadly realistic. For instance, it recognizes both **matter** and **spirit.** God and the world are both real. Bible writers understood that danger and security both attend the lives of the righteous. In this respect, Bible teachings stand in immeasurable superiority to the teachings of "idealism," the philosophy which denies the reality of matter. It stands in equal contrast to "materialism," a doctrine which says that matter is all, and that spirit does not exist.

By its consistent comprehensiveness, the Bible manifests a soundness that overreaches all one-sided, inadequate, and unsound doctrines concerning God, man, and reality. This fact alone is enough to show its divine origin.

In addition to all this, the teachings of the Bible have a continuing relevancy to human needs. The fitness of which we now speak is not the shallow relevancy of day to day satisfaction amidst changing trends. We are thinking of that deeper applicability which accords with the true nature

of man and his needs. The relevancy that is real, that counts, must relate not only to temporal needs, but to human immortality, and to man's ultimate good.

Bible teaching meets this test of relevancy. It leads man toward the source of all strength and perseverance — God.

The Bible offers a way of life by which man's weakness can be complemented by divine grace and power. It speaks with holy authority in all its revelations, commands, and promises. Contrary to the uncertain judgments and theories of men, the Bible speaks with all-inclusive knowledge of God. Therefore its commands and promises have been found sufficient to give strength and joy even amidst suffering and trials.

The content of the Bible also gives guidance for eternal life. It deals not with temporal interests only, but with things universal and eternal.

Many External Things Confirm the Claims of the Bible

First in such a list of Biblical confirmations is the early history of Christianity, a new religion which began in Jerusalem about A.D. 30, and spread into the whole Roman world by the end of the first century. It had a surprising acceptance among Gentiles, often against severe persecutions and martyrdom.

The rise and spread of Christianity is one of history's greatest facts. As such, it has been thoroughly investigated historically; and all efforts of historians to explain its origin and distinctive doctrines lead straight to the Bible, to events narrated in the Old and New Testaments. Only in the Bible can one find the story of Jesus, called "the Christ," for whom the new religion was named. Without drawing on Bible records, no sufficient reasons for a new and unique religion in the first century can be found.

Therefore, the rise of Christianity tends to confirm the claim of the Bible. And a "confirmed" Bible is strong evidence of God's existence.

Archaeology also tends to confirm the history and genuineness of the Bible. Remains of cities and civilizations long dead are amazingly abundant. No part of the world has been so assiduously explored archeologically during the last 150 years as have "Bible lands." Almost without exception discoveries have tended to confirm Biblical history and doctrine.

Biblical criticism also, in the main, tends to establish the authenticity

and credibility of the scriptures, though many critics have been hostile to both the Judaic and Christian faiths. In the long run, nearly all efforts to destroy Biblical credibility have served to establish it more firmly.

Finally, it is quite noteworthy that there is no conflict between the Bible and the facts of science. Naturally, varying degrees of conflict are conceivable between erroneous interpretations of the Bible and the speculative theories of scientists. This is not wholly bad. A Bible which agrees with every trend of thought would probably be worthless.

The Bible's chief interest is religious. But the Bible also touches on many aspects of reality which, through the centuries, have become sciences. "The heavens (skies) and earth" are mentioned by the Bible in its first line — *"In the beginning God created the heavens and the earth."* At least two sciences have developed around the subject matter of that first Biblical sentence. And before the first Bible chapter is finished, the creation record touches on the potential fields of at least ten major sciences.

The Bible does indeed deal with religion; but its religion was, and is, for people who live in an earthly environment, subjected to all the physical conditions about which science — after a long time — has learned much, but not nearly all.

It has been said, in view of such facts, that God is revealed in two "books" — the "book" of the natural world of matter and life — and the Bible. In the natural — the varying fields of science — God's presence and power are revealed — not His laws of worship and immortality. In the Bible God's will and purpose for man are graciously made known.

Naturally, then, there is no basic conflict between the **facts** of science and the **truths** of the Bible.

As a whole the Bible does three inestimably important things for the good of humanity:

1. It stresses the things that make for the dignities and excellence of human personality — justice, decency, faith, hope, love.

2. It gives a view of existence and of history that is unequalled for practical realism and for sustained optimism.

3. Wherever the Bible is understood and taken seriously, it produces social and individual benefits for which there are no known substitutes.

So the Bible of itself is a very important reason for believing in the existence of an omniscient, omnipotent, omnipresent, personal God who

is Spirit, a God great enough to be the Creator of the universe and all that it contains. The Bible is the only collection of writings which speak consistently **of** and **for** a glorious Being who has all the limitless attributes of **Power, Mind,** and **Life** required to create and sustain an orderly, unbounded, working universe.

In this realization we can find strong, even conclusive, reason for our faith in God.

Annotations

The New Age and Universal Light

The Brussel's great Exhibition of 1958 was distinguished by two symbolic structures.

One was named the *Atomium*. It was designed to represent a molecule of metal magnified 165 billion times. The nine "atoms" composing the "molecule" were represented by nine great hollow spheres. Three of those centered on a hollow vertical shaft 320 feet in height, one at the base, one at the top and another at center. The other six spheres, representing atoms, were connected to the structure only by long hollow tubes.

The Atomium was daringly unique. Architecturally, nothing like it had ever been constructed. However, the most impressive thing about it was the symbolism. It represented the new "atomic age," and man's pride in his "progress" and unprecedented "technocracy."

The other unique structure at the Brussel's exhibition was in form like an open book — a gigantic book — about 60 feet in height. It represented the most widely circulated of all books — the Bible. In front, the pavilion said in French: "The Bible — God's Book for All Men." Near the top, a fast moving band carrying large letters constantly repeated certain scriptures, including Psalm 119:105: *"Thy word is a lamp unto my feet, and a light unto my path."* The message flashed continuously and successively in six languages. From the top of the Atomium, looking down, this text could be seen: *"And the times of this ignorance God winked at; but now commandeth all men everywhere to repent; because He hath appointed a day, in the which He will judge the world in righteousness by that man whom He hath ordained; whereof He hath given assurance unto all men, in that He hath raised Him from the dead."*

Directors of the Brussell's Exhibition evidently did not consider the

Bible out of date because humanity, with a frightening degree of pride and self-trust, had entered upon unprecedented times.

Contextual Readings

"The Basis of Christian Faith," Floyd F. Hamilton: Harper and Row. Chapter VIII.

"The Most Remarkable Book in the World," Chapter X, ***"The Historical Trustworthiness of the Bible."***

The Name Above Every Name

By the verdict of time — nearly 2,000 years — Jesus of Nazareth is the world's unsurpassable person. He lived in the first century. But events of the 21st century are dated with reference to His birth. His is truly the *"name above every name."* He has been rightly called the greatest "Teacher," the greatest "Humanitarian," the greatest "Moral Leader," and the greatest "Person" who ever lived.

Still the feeling grows that the strange carpenter of Nazareth was more than all that superlatives can imply. The facts of history tend to confirm the conviction of the first century that He was God "enfleshed," dwelling for a time among men (John 1:1-3,14,18).

Some may choose to deny Jesus' deity but we can hardly deny the fact that He is the most God-like person known to human beings.

Chapter Eleven
The Man in Whom God Was Manifest

To millions of people, the happiest and greatest reason for believing that a holy, all-wise and loving God exists is a man who lived during the first third of the first century.

The One whose life and teachings have done more to prove the existence of God than all the labored arguments of men is Jesus of Nazareth.

The whole New Testament story of His life — His birth, childhood, ministry, death, resurrection, ascension — is told with the simplicity of omniscience. From manger to cross and beyond, every event of His life is illumined with glory. Everything said of this man reflects the mystery and beneficence of Deity.

We believe it means that the strange man of Nazareth was the Invisible God of eternity personified; the *"Word"* who *"was with God and was God"* made flesh (John 1:13,14).

The Eternal "Word," "the Son," equal with God in power and glory, emptied Himself of His equality with God, became flesh, and dwelt among men who beheld His peculiar glory, glory as of God, *"full of grace and truth"* (Philippians 2:5-8; John 1:14,18).

"My Lord and My God"

These sublime and all but incomprehensible revelations concerning Jesus' deity have challenged human faith since the beginning of Christianity. Their deeper meaning has been slow to dawn upon the understanding of men, even as it was slow in coming to Thomas, one of Jesus' disciples.

After three years with Jesus the Nazarene, Thomas no doubt felt that he knew his master. He was sure, within his own heart, that Jesus was a "teacher come from God," a great and good man, able to work miracles, and able to raise the dead. But, even believing that Jesus was a great man of God, Thomas apparently considered Him unable to take His bodily life again after dying the death of the cross, so, when his fellow disciples told him they had seen their Lord alive after the crucifixion, he stoutly affirmed his incredulity.

But a week later, Thomas saw his risen Lord within arms' reach, and he had a chance to apply his own tests of Christ's resurrection, that of

putting his finger in the nail prints in the hands, and in the spear-pierced side. He discovered, then, that he did not need these proofs. At last, by seeing Jesus alive after death, Thomas knew who and what He was. He expressed his conviction with the exclamation, *"My Lord and my God!"*

Notice that Thomas said not only "my Lord," but "my God." The new and all important realization for Thomas was stated in that last phrase, "my God" (see John 20:24-29).

History's Greatest Person

There are many reasons for believing Thomas was right in his compelling conviction that Jesus was God. We shall consider some of the most vivid and important of these reasons. But before that, let us notice one preliminary truth. The truth to which we refer is called "the historicity of Jesus." It means that He is historically real, an actual person, who lived at the time and in the country named in the records of His life. It means, in other words, that "the man of Nazareth" who came to be called the Christ is not a legendary person. He was — and is — real. His earthly life was spent in that part of the world where civilization had its origins. He lived in an age and in a country known to all historians. He established the religion that bears His name, "Christian." He started a movement that has been a factor in all subsequent history. That movement cannot possibly be explained if the man called "Jesus the Christ" was not real.

The fact of the historicity of Jesus deserves special notice because very determined efforts have been made to brand Him as a legendary, even a fictional, personality. The procedure has been to say that Jesus was a good man whom later generations deified by fictional accounts of His deeds and His teachings. All these varying efforts to disprove history have failed with informed people. Christ Jesus is the most investigated person who ever lived. Every fact concerning Him, as well as every word He uttered, has been minutely and critically examined, not once but again and again, even to this present year. The facts still survive all the research and all the hostility. Honest *doubters* of Jesus' deity find themselves compelled by undeniable evidence to admit that He was real, that He lived substantially as the records declare, that He is the world's greatest ethical teacher; that He came nearer than anyone else known to history in achieving the perfect life.

The skeptical can verbally deny Jesus' deity, but no one can factually

deny His existence as a man. However, it is not the whole truth to admit Jesus' historicity or His matchless greatness as a man. We think Thomas grasped the ultimate fact about Him when he confessed Jesus as Lord and as God. He, of course, knew from the first that Jesus was man. His great discovery was that Jesus is more than man; he is also God.

Our interest now is to list some reasons for thinking that Thomas, and millions of others who find in Jesus Christ the happiest and greatest proof of God, are right.

We begin our list with Jesus' question concerning what His disciples thought of Him: *"Now when Jesus came into the parts of Caesarea Philippi, he asked his disciples, saying, Who do men say that the Son of Man is? And they said, Some say John the baptist; some, Elijah; and others, Jeremiah, or one of the prophets. He saith unto them, But who say ye that I am? And Simon Peter answered and said, Thou art the Christ, the Son of the living God. And Jesus answered and said unto him, Blessed art thou, Simon Bar-Jonah; for flesh and blood hath not revealed it unto thee, but my Father who is in heaven"* (Matthew 16:13-17).

Jesus commended Peter for confessing Him as *"the Christ, the Son of the living God."* "Son of" in Bible times did not necessarily mean a literal descendant of, but very frequently "like unto," or "similar in character" or greatness. Jesus was the Son of God in both senses, not only like God but equal with God in nature and greatness. As equal with the Father, the Son had rights and powers peculiarly His. Of these He could empty Himself for a time, but never give them up permanently. He is forever deity and can never lose His glory and divinity as "the Son."

The pivotal truth about Christ is declared in a number of scriptures, such as John 1:1-4,14,18; Hebrews 1:1-12; Colossians 1:14-20. Nothing is more important than to know Jesus' full identity, to believe with all one's heart that He was the eternal God manifest in human form.

Words That Amazed All Who Heard Them

The *"man from Nazareth"* amazed His contemporaries — particularly His fellow townsmen — with His wisdom and powers, and He shocked them with His claims. In the Sermon on the Mount He repeatedly quoted Old Testament commands saying, *"It was said ... but I say ...."* In this way He not only claimed authority equalling that of Moses and the prophets — but superior to them. He declared that heaven and earth would pass

away but *"my words shall not pass away"* (Matthew 24:35). He claimed to have existed before Abraham (John 8:58). He said, *"Moses wrote of me"* (John 5:45). He declared that Old Testament writings, *"the law of Moses, the prophets, and the psalms,"* related to Him (Luke 24:44).

He spoke of coming into the world to *"seek and save the lost,"* a task requiring the giving of Himself *"a ransom for many"* (Matthew 20:28). He claimed power to lay down His life and power to take it up again (John 10:17,18). He stated that the Father had given all judgment into His hands (John 5:22). He further stated that the hour was coming in which *"all who are in the tombs"* would hear His voice *"and come forth"* (John 5:28,29).

In addition to direct claims which only God has a right to make, Jesus the Nazarene spoke often, with perfect assurance, of things unknown and unknowable to men except by deity or revelation. He declared that the kingdom of God was nigh unto the people of His generation, and that a universal religion was soon to begin. He repeatedly stated, as a fact, that He would die at Jerusalem; and that the chief priests and the scribes and the elders would be involved in it; and that on the third day He would be raised up.

Jesus predicted a number of things that came true historically, such as the end of the Jewish state, the complete destruction of the temple, and the great tribulation that would accompany its destruction. He said that His followers would be persecuted, and that many would be put to death for His sake. He predicted also the preaching of the gospel in the whole world as a testimony (Matthew 24:14).

While yet all twelve apostles were apparently loyal, Jesus predicted that one of them would betray Him. In specific terms, He informed Peter that he would deny his Lord three times within the same night. All of these predictions were fulfilled, indicating that Jesus had what man alone does not have — omniscience, an attribute of Deity only.

Possibly the most outstanding of all Jesus' statements are His claims concerning Himself in relation to man and God. For instance He said, *"I am the bread of life"* (John 6:35). *"I am the light of the world"* (John 8:12). *"I am the good shepherd"* (John 10:11). *"I am the resurrection and the life: he that believeth on me, though he die, yet shall he live"* (John 11:25). Again He said, *"I am the way and the truth, and the life: no one cometh unto the Father but by me"* (John 14:6). *"He that hath seen me hath seen the Father"* (John 14:9).

On another occasion He said, *"I and the Father are one."* In the

course of His prayer on the night of His betrayal, He spoke of the glory which He had with the Father before the world was (John 17:5).

Naturally such claims and statements, coming from one who in outward appearance was only a man, were hard for His countrymen and neighbors to accept. Hard, that is, until you realize that He made good, where evidence is possible, on all that He claimed.

If we realize the greatness of Christ's statements and believe them, we can with Thomas say, *"My Lord and My God!"*

Life and Character More Amazing than Words

Jesus made startling predictions. They were amazingly fulfilled. He made great claims for Himself. And He backed them up with something greater — **perfect** character and sinless methods. His words, His teachings and His revelations about Himself are great. But His life and His power are greater. His claims must be honored and believed because He validated them with a sinless life and limitless power.

Though Jesus was equal with God, He became flesh, and was tempted in all points as are we, yet without sin. He lived and worked among sinners, but did no sin. He was hated as no one else was ever hated, but no one could put hate into His heart. When He was reviled, He reviled not again; when He suffered He threatened not (1 Peter 2:23).

His sinless perfection was shown not only negatively, but also positively. He always did things that were right before God; and He did them with the motive of love — perfect love — for God and for man. Righteous in every outward act, He was even more gloriously righteous in the thoughts which were foundational to every act. Truly, He came *"not to be ministered unto, but to minister and to give His life a ransom for many"* (Matthew 20:28).

As great as they were, Jesus' claims are secondary in comparison with the sublime, all-embracing greatness of His deeds and divinity.

Up to now, though we may have been deaf to the claims of Christ, if we understand the incomparable greatness and glory of His life, we can still say with worshipping Thomas, *"My Lord and my God."*

Achievements Without Parallel

Everything that people most fear and dread as hindrances to success worked against Jesus the Nazarene — poverty, obscurity, opposition,

hatred, treachery, humiliation, and death.

All these combined against Him; and for a short time these things seemed to have destroyed Him. But here is the marvel: they *could not destroy Him.* Though killed, Jesus was not in any sense defeated. By the sacrifice of Himself, He gained eternal victory over the three greatest foes of men — Sin, Death, Hades.

The resurrected Christ, whom Thomas worshiped as Lord and God, stands absolutely alone in transforming poverty into power, the shame of the cross into glory, and death into eternal victory.

Though He had to die to do it, Christ built His church (Matthew 16:18). When the first century began there was not a person in the world called a "Christian." When Christ died, no one as yet was called a "Christian;" and nothing was called "Christ's Church," or "The Christian Religion." But when the first century ended, there were people called Christians in all parts of the Greco-Roman world; and congregations called churches of Christ existed in all the great cities of the Empire. Before the end of that century, Christ's Gospel was being preached, as He said it would be, to the whole world.

The shadow of Jesus' preeminence and power since the first century falls across all of history. Consider a few facts:

Christ Jesus suffered the greatest degree of humiliation we can imagine. *"He was despised, and rejected of men; a man of sorrows and acquainted with grief. ... By oppression and judgment He was taken away. ... He poured out His soul unto death, and was numbered with the transgressors ..."* (Isaiah 53:3,8,12).

But His is an eternal, moral, spiritual and divine preeminence in all things. *"He is the head of the body, the church ... that in all things He might have the preeminence"* (Colossians 1:18). *"God highly exalted Him, and gave unto Him the name which is above every name; that in the name of Jesus every knee should bow ..."* (Philippines 2:9). *"We behold ... Him ... crowned with glory and honor"* (Hebrews 2:9). *"Of the increase of His government and of peace there shall be no end ..."* (Isaiah 9:7).

The most significant fact in human history is the continuing moral and spiritual eminence of Jesus the Nazarene. It looks more and more as though the alternatives before today's world are Christ or chaos.

His relevance to the hope of moral, social, and political survival, not to mention progress, is the miracle of the ages.

In a rational universe there must be an adequate cause, a valid reason, when one man stands out so notably above all other men. The one adequate reason, we believe, for Christ's strange, holy preeminence is — God. *"God was in Christ."*

Known by His Power and Divinity

In the spring of A.D. 30, the name of Jesus the Nazarene seemed doomed to shame, reproach, and early oblivion. In the world today His is the name above every name in honor and glory.

Today, all who are acquainted with the facts know that Jesus is the greatest teacher, the greatest spiritual authority, the most powerful personality, and the noblest person who ever lived on earth. Millions who go beyond the bare facts of history, and view Him with the eye of faith, know Him as Lord and God.

The great contrast between Jesus' humiliation in the first century and His worshipful exaltation in all later centuries, is one of the most significant facts of all time.

Renan, French orientalist and critic of religion, expressed the vital relation of Jesus to the modern world in these words: "Jesus has become the cornerstone of humanity so entirely that to tear His name from this world would be to rend it to its foundations."

Why is this so? Why does the name of the crucified carpenter stand above every other name on the roster of immortality? How is it that one who was seemingly thoroughly and helplessly human has come to be so extraordinarily superior to all other men? How shall we think of Jesus of Nazareth in the light of His faultless character and spiritual supremacy?

Think of Him as everything that God is.

Napoleon, the Corsican genius, the military colossus of the 19th century, appears to have been right about Jesus. He said, "I know men; and I tell you that Jesus is more than man. Everything in Him amazes me. ... His ideas and His sentiments, the truths that He announces ... are all beyond humanity and the natural order of things. ... Christ was more than man."

Christ Jesus is "The Man Who Was God." John, an apostle of Christ,

tells us He was God made flesh, dwelling for a time among men to save the lost, and to perfect a way to everlasting life (John 1:1-4; 14:6-10).

If Christ was God, then of course, God Is. To most believers, Jesus Christ is the great and ultimate proof of God.

Annotations

A Greatness Which Bestows Greatness

To a degree possessed by no other historic figure, Jesus communicated greatness, or importance, to everything associated with Him. A leader can be judged by the quality and stature of His followers. In Jesus' case, His closest followers in the beginning were not, in rank or ability, the kind of men one would expect to become famous or to do great, world-changing things. Yet, Jesus gave them an international, world-embracing task — that of carrying the kingdom of God to all nations.

The twelve apostles, and a small group of others associated with them, took His commission seriously, and proceeded to do the impossible — to set up **a spiritual kingdom** that has gone to all nations and has not been destroyed in the almost two thousand years since its beginning.

When Jesus died no one had ever heard of a "Christian" or of "Christianity." Yet, within a short time afterward there were thousands of enthusiastic converts to Christianity in Jerusalem, and Samaria as well as in Judea. When the first century closed, there were Christians and churches of Christ in all the principal cities of the Greco-Roman world.

Undeniably, Jesus was able to communicate to these average men something of His mind and Deity. He influenced people more strongly than any other has ever been able to do. The proof is seen in the fact that His early followers performed the most enduring moral and spiritual task ever known — the spreading of His teachings throughout the world, bringing a new consciousness of justice, mercy, and humanity to peoples that had been dominated by pagan cultures. W H. Turton of England has said that as a mere historical problem, the triumphal spread of Christianity in the early centuries is "the most remarkable effect in the history of mankind."

Not only did Jesus bestow the greatness on His church as an institution but, more convincingly, He bestowed greatness upon its members as individuals. Consider the unstable fisherman, Peter, so erratic at first,

so strong later. Consider another fisherman — John, son of a prosperous fisherman, who wrote five New Testament books bearing his name. These two men, plus ten other apostles, make up the most noted group of men who ever lived at one time in the history of the world. They are among the noblest of history's immortals, because Jesus bestowed His greatness upon them.

And Pilate, a very ordinary official in ability, has become the most widely known of all Roman governors, because he gave the order for Jesus' crucifixion.

Jesus the Christ possessed a personal greatness which lifted other persons from mediocrity to excellence, and from insignificance to immortal greatness. His life has attracted more attention, challenged more thought and answered more basic questions than that of anyone else who ever walked the earth. What do you think?

Does not today's world need the Christ of history? As a nation, does not America need Him desperately? And as individuals, do we not need Him more than we can imagine?

General Douglas MacArthur once said, "Military alliances, balance of power, Leagues of Nations, all in turn have failed. If we do not devise some greater and more equitable system Armageddon will be at our door..."

We must be led of the Spirit if the things of time and flesh are to be saved.

Contextual Readings

John 1:1-18

Colossians 1:12-20

Revelation 11:15

"The Truth of Christianity" Lt. Col. W. H. Turton, DSO — Wells Gardner, Darton & Company, London

Section Four
Appendices

A. The Fruits of Atheism

Jesus said that trees are good or evil according to their fruits. Judged by this standard, the prevailing humanistic and materialistic ideologies of this century are basically evil. Their fruits are anything but good.

During the 19th century, revolutionary atheism produced a number of persuasive spokesmen — Marx, Engels, Nietzsche, Renan, Strauss, Darwin, Freud, and others of lesser note — who sowed the seed of chaos.

This century has produced a long list of extremists who took up where their predecessors stopped. These enemies of God and man — Hitler, Stalin, Mussolini, Togo and Chou En-Lai, to name a few — have attracted millions of followers. These in turn, by totalitarian tactics, have filled the world with violent trends. The influence of applied materialism and atheism did more than anything else to bring on two World Wars. The same influences have made peace among nations, as of now, impossible. The radicals have shamed humanity with monstrous atrocities. Anti-Christian radicalism, revealing its nature by its fruits, has reversed the principles of civilization.

Such in general have been the fruits of man's most recent and most determined effort to repudiate Christian faith and to create a Godless world.

1. World Wars I and II, with 100,000,000 total casualties.

2. The continuing ruthless effort of Communism to conquer the world.

3. The resulting rise in the West of a new paganism, more cynical, violent, and immoral than any previously known.

These organized forces of destruction seek to achieve the moral overthrow of humanity by brain-washing tactics, and by any other procedure serving revolutionary purposes. Communists seek to corrupt or obliterate truth about God, about man, about ethics, morals, religion — even about ordinary honesty and decency.

In turning human masses into restless hordes with false concepts of themselves — and/or reality in general — humanism, atheism and materialism are revealing themselves for what they are. At the same time, they are creating a Frankenstein which may enslave or annihilate its creators

— and civilization along with them.

B. Philosophical or Classical Arguments for the Existence of God

The New Testament makes it a Christian duty to be ready to give a *"reason concerning the hope that is in you"* (1 Peter 3:15). In line with this admonition, various men of ability and faith since the third century have given excellent philosophical reasons for faith in the God of the Bible. Four of the best known among these reasoned statements about the existence of God are these:

1. The General or Intuitive Evidence of God

It is well known that all races of people, as far back as history or archaeology go, have believed in supernatural beings, or a supernatural Being. If no such supernatural beings exist, it is impossible to account for the universal intuitive belief in a God or gods. Universal intuitions are known to be responses to aspects of reality. World-wide belief in God must be based on some form of reality. *Unlearned belief in God is logically a response to a divine presence.*

2. The Cosmological Argument

This argument is based on *the law of causality* — on the undeniable fact that every effect in nature has to have an adequate cause. If we think of the undeniable universe and the equally undeniable order, system, symmetry and greatness of it as an effect, we are compelled to postulate an adequate cause. The one cause great enough to produce and govern anything as vast as the universe can be nothing less than the omnipotent, omniscient God.

3. The Teleological Argument

This argument is rooted in *the evidence of design, adaptation and purpose which are apparent in much of nature.* The adaptation of means to ends is obvious in nearly all living things. Eyes are clearly made for seeing, ears for hearing, feet for walking, and so on. Every organ of the human body is suited to the function it performs. What is true of this principle, manifest in human bodies, is true of the organs and functions of all living things. The principle of design also goes beyond living structures and applies, to a degree, to inorganic bodies such as the earth and the sun.

4. The Moral Evidence of God

Man is a moral being. A moral order is observable in the world. Man

lies in an environment in which he discerns right and wrong, and is confronted with a choice between good and bad.

But *morality can be predicted only of rational personalities,* "never of mere things or animals; therefore, the ultimate source of morality must be a rational personality." This moral Source has to be God.

Immanuel Kant, a great philosopher, considered this moral principle a very potent and conclusive evidence of God's existence.

C. Reasons Most Frequently Given by Modern Man for Belief in God

Reason Number One:

The immeasurably vast, orderly, interlocking, universe — the whole intricate system of which we and our world are parts. Since the universe is real, it must have had a Cause which is as real as it is.

Reason Number Two:

The intricacy and mystery of Matter, the varied, countless and unaccountable atoms, of which the material universe consists. Matter is not eternal; it can change into energy and disappear. Since matter is being constantly used up, it *has not always existed,* hence it was created at a time not infinitely remote.

Reason Number Three:

The existence and marvels of *"life"* are evidences of God. Living matter is self-active. **Life** has never been known to come from **non-living sources.** It must, therefore, have had a living origin; and that Origin we believe was the Living God.

Reason Number Four:

The highly efficient, intelligent, all-important **interdependence of plant and animal life** is evidence of God. Plant and animal organisms are mutually dependent. Animals have to have oxygen which plants produce; while plants use the carbon dioxide and all the chemical wastes which animals produce. It is conceivable that only an All-Knowing Creator could devise an economy so marvelously adjusted and enduring.

Reason Number Five:

Another evidence of God's existence and personality is *the Bible* — that collection of ancient writings superior to all others produced by the ancient world — writings having unique features which human genius alone has never produced.

Human beings penned the writings of the Bible, but we believe they penned them because they were moved by the Holy Spirit of God.

Reason Number Six:

Another very convincing evidence of God to many people is *Jesus Christ*. Though undoubtedly human, the evidence indicates He was also God. He manifested the attributes of God in at least six ways: by the sinless life He lived, by the deathless words He spoke, by the miracles He wrought, by the death He died, by the resurrection He demonstrated through many proofs (Acts 1:3), and by the living power of His enduring gospel. "No man could ever have invented such a character as Jesus."

Reason Number Seven:

The unique nature and potential powers of human beings are added reasons for believing in God's existence and goodness. Man has moral and spiritual qualities which partake of divinity. For his potential dignity and worth there is no explanation except the personal God who made man in His own image.

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"Now unto him that is able to do exceeding abundantly above all that we ask or think, according to the power that worketh in us, unto him be the glory in the church and in Christ Jesus unto all generations for ever and ever, Amen" (Ephesians 3:20,21).

From One of the Ten Greatest Speeches of All Times

"... The God that made the world and all things therein, He, being Lord of heaven and earth, dwelleth not in temples made with hands; neither is He served by men's hands, as though He needed anything, seeing He Himself giveth to all life, and breath, and all things; and He made of one every nation of men to dwell on all the face of the earth, having determined their appointed seasons, and the bounds of their habitation; that they should seek God, if haply they might feel after Him and find Him; though He is not far from each one of us: for in Him we live, and move, and have our being ..." (Acts 17:24-28).