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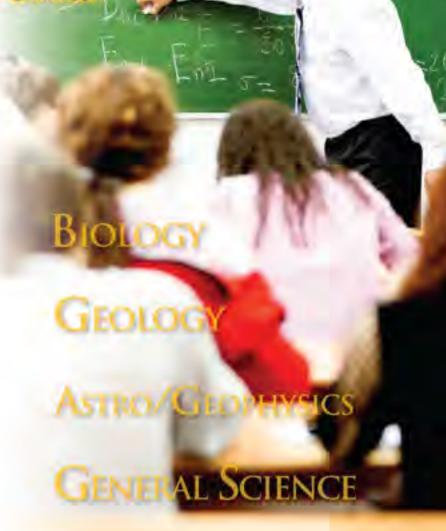
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Cloning and the Virgin Birth

any essential doctrines of Scripture hinge on the virgin birth of Christ. To fulfill prophecy, the Messiah had to be both man and God, without genetic or personal defect, and be the rightful King of Israel in the line of David. Only such a One could fully atone for the sins of all mankind and assume the universe's throne for all eternity.

As far as science knows, there has never been a virgin birth of a man or a mammal under natural circumstances. Such life comes only from the union of a male and female. But now cloning technology seemingly provides an alternate explanation for Christ's miraculous conception. For the first time it is scientifically possible for Mary to have borne a child without a man. Is spontaneous cloning behind the story of the virgin birth?

Reproduction without sexual union has been observed in some fish, amphibians, birds, and reptiles. In recent years, cloning in laboratories has even been successful with several mammals, although great care and advanced technology is required. Progress is being made, and we can expect cloning to become mainstream practice before long. Even human cloning, while discouraged by many governments, is being aggressively explored by several labs. (I suspect the strident insistence for embryonic stem cell research has human cloning as an unstated goal.) Unless God intervenes, advances in cloning technology may lead to a brave new world of human clones, with Pandora's Box opened wide.

But is this the same thing as the virgin birth? Would human cloning equate to the fulfillment of the biblical prophecy "a virgin shall conceive, and bear a son" (Isaiah 7:14)?

No, it would not. In humans, the DNA in each egg's nucleus contains 23 chromosomes, with the remaining 23 usually supplied by the father. In cloning, the original 23 chromosomes are stripped from an unfertilized egg, and a full complement of 46 from a donor is inserted. The child would possess identical DNA to the donor, with a minor exception—a small segment of DNA present in the cells' mitochondria is passed from mother to child, undiluted by the father.

Is cloning a possible explanation of Christ's birth? If Mary's nuclear DNA was used, the resulting child would have been female. If another source was used, the offspring would have carried Mary's imperfect mitochondrial DNA, mutated over the generations since Adam, and thus could not have been the perfect "lamb without blemish and without spot" (1 Peter 1:19).

Cloning is not the answer. While much remains a mystery, the birth of Christ was a miracle in every regard. He said of God the Father, "...a body hast thou prepared [for] me" (Hebrews 10:5), free from any genetic defect and thus qualified to be a perfect sacrifice. And then, "when the fullness of the time was come, God sent forth his Son, made of a woman...to redeem them that were under the law, that we might receive the adoption of sons" (Galatians 4: 4-5).

At this Christmas season we have so much for which to give thanks, especially that God "gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life" (John 3:16). Our thankfulness will continue throughout all eternity.



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 Henry M. Morris IV



Published by

Begotten Son

HENRY M. MORRIS, PH. D. Founder of the Institute for Creation Research



For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life. (John 3:16)

ne of our favorite Christmas verses is 1 John 4:9: "In this was manifested the love of God toward us, because that God sent his only begotten Son into the world, that we might live through him." The marvelous incarnation in human flesh of the only begotten Son of God is not the end of the story. The next verse explains that we have life through Him because God "sent his Son to be the propitiation for our sins" (1 John 4:10). Our heavenly Father gives us eternal life instead of the eternal hell that we deserve because His only begotten Son died in our place for our sins. "For he hath made him to be sin for us, who knew no sin; that we might be made the righteousness of God in him" (2 Corinthians 5:21).

The Only Begotten of the Father

Consider, though, the significance of this revelation that Jesus Christ is the Father's "only begotten" Son. This unique phrase is used with reference to the Lord Jesus just four other times, and all five verses contain vitally important truths concerning Christ.

And the Word was made flesh, and dwelt among us, (and we beheld his glory, the glory as of the only begotten of the Father,) full of grace and truth. (John 1:14) This is the key verse of the Incarnation, assuring us that the man Jesus, who dwelt among us for a time, was also the eternal Word who was "in the beginning with God" and that He "was God" and that "all things were made by him" (John 1:1-3). He was God the Creator manifest in the flesh.

No man hath seen God at any time; the only begotten Son, which is in the bosom of the Father, he hath declared him. (John 1:18)

The Father is omnipresent, and therefore invisible to mortal eyes, but as Jesus said: "He that hath seen me hath seen the Father" (John 14:9). Whenever God has been seen by men, it has been through the Son who has revealed Him.

For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life. (John 3:16)

This verse, of course, is the most magnificent of all gospel verses. It assures us that, if we simply put our trust in our great Creator who has become man in order to die for our sins, and then to defeat death and become our Savior, our sins will be forgiven, and we shall live forever with Him.

He that believeth on him is not condemned: but he that believeth not is condemned already, because he hath not believed in the name of the only begotten Son of God. (John 3:18)

Other than the name of the Lord Jesus Christ, "there is none other name under heaven given among men, whereby we must be saved" (Acts 4:12). This verse gives clear warning that those who refuse or neglect to believe on the person and work of God's only begotten Son will die in their sins, condemned forever by the Father whose Son they have spurned.

God sent his only begotten Son into the world, that we might live through him. (1 John 4:9)

This great Christmas verse was discussed above and is a wonderful summary verse on salvation that Christians now often write on their Christmas cards.

The Only Begotten Son

But why was it important for the Holy Spirit who inspired these five great verses to stress that the Lord Jesus was the incarnate *only begotten* Son of God? The Greek word for "only begotten" is *monogenes*, the very form of which clearly denotes "only generated." As monotheism connotes only one God and monosyl-

lable means a word of only one syllable, so *monogenes* means only one genesis or only one generated—or, more simply, *only begotten*. It does not mean "one," or even "one and only." It is worth noting that, although Christ is called the Son, or Son of God, frequently in the New Testament, He is never (in the Greek original) called the "only" son of God.

The fact is that to call Him the only Son of God would make the Bible contradict itself. Angels are several times called the sons of God (e.g., Job 38:7). Likewise, Adam was called the son of God (Luke 3:38), because

he was directly created. The same applies even to fallen angels (Genesis 6:2) and to Satan (Job 1:6), because they also were created beings. The term is also used in a spiritual sense, for those who have become "new creations" in Christ Jesus by faith (2 Corinthians 5:17; Ephesians 2:10; etc.) are "sons of God" (e.g., 1 John 3:2) by special creation.

But it is never applied in this sense to Christ, for He is not a *created* son of God (as the Jehovah's Witnesses and other cultists teach), but a *begotten* Son of God—in fact, the *only begotten* Son of God. He never had a beginning, for He was there in the beginning (John 1:1). In His prayer to the Father in the upper room, He spoke of "the glory which I had with thee before the world was" (John 17:5).

In that wonderful Old Testament Christmas prophecy about His coming human birth in Bethlehem (Micah 5:2), we are told that His "goings forth have been from of old, from everlasting." His human body was, indeed, "brought forth" from "she which travaileth" (Micah 5:3). But long before that, He had been everlastingly going forth from "the bosom of the Father" (John 1:18).

These truths are beyond our full comprehension, of course, for they are all part of the great mystery of the Tri-une Godhead. Christ is "the image of the invisible God" (Colossians 1:15), for as He said: "I and my Father are one" (John 10:30).

Eternally Begotten

Jesus is also the *eternally begotten* Son of the Father. He is eternally "in His bosom," yet

always "going forth" to "declare" the Father—once as the creating Word, occasionally in pre-incarnate theophanies, also through the Holy Spirit conveying God's written Word (which had been eternally "settled in heaven" [Psalm 119:89]) down to man through divinely chosen prophets, then ultimately appearing as the incarnate Word to live forever as the God/man.

The doctrine of "eternal generation" was what the older theologians called this great truth. He did not *become* the only Son by His virgin birth. He was the only begotten Son from eternity, "set up from everlasting" (Proverbs 8:23).

The First Begotten from the Dead

Jesus was not just the inheritance. only begotten Son in the beginning, He soon also became the "first begotten of the dead" in time (Revelation 1:5). He was "declared to be the Son of God with power…by the resurrection from the dead" (Romans 1:4).

Paul preached that God "hath raised up Jesus again; as it is also written in the second psalm, Thou art my Son, this day have I begotten thee" infar (Acts 13:33).

He is the only begotten Son eternally and now the first begotten Son by resurrection, "the firstfruits of them that slept" (1 Corinthians 15:20). What a wonderful Savior is Jesus Christ, our Lord!

The Lord Jesus is not only the unique Son of God by eternal generation and by resurrection, but also by divine inheritance. God has "spoken unto us by his Son, whom he hath appointed heir of all things" (Hebrews 1:2).

The Uniquely Incarnate Son

His unique human birth, miraculously conceived with a divinely created body in a virgin's womb, had also marked Him as the incarnate Son of God. To Mary, the angel had said: "Fear not...that holy thing which shall be born of thee shall be called the Son of God" (Luke 1:30,35).

His unique righteousness, in both character and action, still further marks Him as Son of God, for He alone possessed the divine

nature from the beginning. He said: "The Son can do nothing of himself, but what he seeth the Father do: for what things soever he doeth, these also doeth the Son likewise" (John 5:19).

He was even identified as God's Son by heavenly proclamation. "There came a voice from heaven, saying, Thou art my beloved

Son, in whom I am well pleased" (Mark 1:11).

The Lord Jesus Christ is thus Son of God by miraculous conception and virgin birth, by heavenly proclamation, by His uniquely perfect human nature, by divine inheritance, and by triumphant resurrection.

But, most of all and first of all, He is Son of God by eternal generation—the

Second Person of the Holy Trinity, the only begotten Son of God!

The Son Given

The Lord Jesus

is not only the

unique Son of

God by eternal

generation and

by resurrection,

but also by divine

There is another great Christmas verse: "For unto us a child is born." That child was the infant Jesus, born of the virgin as prophesied hundreds of years in advance (Isaiah 7:14), in the little town of Bethlehem (Micah 5:2). At the same time, "Unto us a son is given." That Son was the only begotten, eternally begotten Son of God. "And the government shall be upon his shoulder," for He holds the whole wide world in His hand! "And his name shall be called Wonderful, Counsellor, The mighty God, The everlasting Father, The Prince of Peace" (Isaiah 9:6).

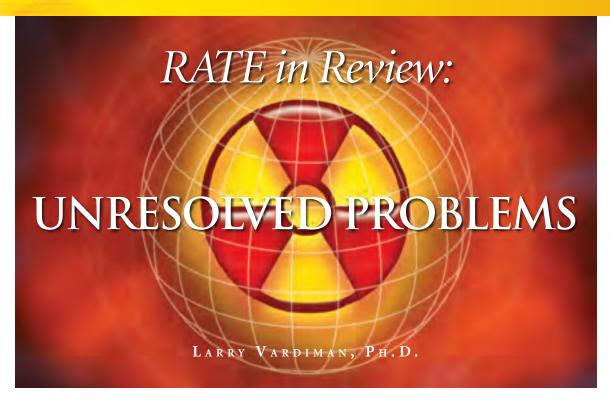
As one with the everlasting Father in the Tri-une Godhead, He is also the mighty God. He is our Creator, our Redeemer, our Resurrected Savior, our King of kings and Lord of lords. "Wherefore he is able also to save them to the

uttermost that come unto God by him" (Hebrews 7:25). ●

Adapted from Dr. Morris' article "God's Only Begotten Son" in the December 1997 edition of *Acts & Facts*.



Henry M. Morris 1918-2006



his month I will complete a threepart review of the RATE project (Radioisotopes and the Age of the Earth). In October I presented the background considerations leading up to the project. In November I discussed the interpretation of Genesis as history, which was an important biblical basis for the scientific studies. The RATE project found that:

- » A large amount of radioactive decay has occurred in earth history.
- » Nuclear decay processes were accelerated during episodes in earth history.
- » Conventional radioisotopic dates are therefore incorrect by large factors.

These findings led to the major conclusion that the earth is thousands—not billions—of years old. However, RATE left three unresolved problems concerning theology, heat, and radiation.

The Theological Problem

The use of the term "accelerated decay" for nuclear processes during the Creation Week seems to create an apparent conflict for some people with the statement given by God in Genesis 1:31: "And God saw every thing that he had made, and, behold, it was very good." The RATE project was able to show that accelerated decay occurred during the Genesis Flood, but this was

not sufficient to explain all the observed daughter products in rocks, such as lead. The production of lead by accelerated decay during the first three days of the Creation Week could explain this, but that would introduce the concept of "decay" during this period that was stated by God to be "very good." This issue probably merits further study, but could easily be resolved if the term "decay" were understood as "process." The RATE group suggested that the apparent conflict may only be due to semantics.

The Heat Problem

Of greater concern to both supporters and skeptics of the RATE project is the issue of how to dispose of the tremendous quantities of heat generated by accelerated decay during the Genesis Flood. The amount of heat produced by a decay rate of a million times faster than normal during the year of the Flood could potentially vaporize the earth's oceans, melt the crust, and obliterate the surface of the earth. The RATE group is confident that the accelerated decay they discovered was not only caused by God, but that the necessary removal of heat was also superintended by Him as well. Dr. Russell Humphreys, a member of the RATE group, has suggested one possible mechanism that may explain this dilemma. He has found evidence, both scientific and scriptural, that cooling of the earth by the expansion of the cosmos may have occurred simultaneously with the heat produced by accelerated decay.

The Radiation Problem

Another consideration is how Noah and his family could have survived the massive dose of radiation unleashed during the Flood. It is likely that the humans aboard the Ark would have been protected from most of the radiation occurring on the surface of the earth by the water covering the planet. It is common knowledge that water absorbs radiation, and an average of 8,000 feet of water covering the earth would have made a very effective shield. However, some have expressed concern that a radioactive element like potassium-40 that is present in the human body may have produced radiation within Noah's body itself.

Further Research

These problems and others will be explored as the RATE II program continues in the coming years. Evidence for accelerated decay in meteorites has been identified as one of the most important research projects for the future. We'll keep you posted on our progress in upcoming editions of *Acts & Facts*.

Dr. Vardiman is Professor of Atmospheric Science and Director of Research.

INSTITUTE for CREATION RESERVE The Bible is Scientifically / **

<u>Meeting Highlights</u>

Equipping the Creation Classroom

hristian teachers are very special witnesses to God, because their responsibility and privilege is the cultivation of their students' potential in Christ. While ICR's mission remains rooted in scientific research, the next "layer" of our work consists of education, preparing leaders and educators to take the message of the accuracy and relevance of God's Word to those within their spheres of influence.

Our founder, Dr. Henry M. Morris, understood the vital ministry that teachers perform, and placed an emphasis on "teaching the teachers." The ICR Graduate School was established to provide graduate-level training in science within a biblical creationist context. This fall ICR renewed its efforts to reach Christian schools, teachers, and administrators with the message of biblical authority as it relates to science education.

In October, ICR expanded its mission to many of the conferences held by the Association of Christian Schools International (ACSI). Founded in 1978 to provide resources and assistance to Christian educators and schools, ACSI is described on its website as "the largest association of Protestant schools in the world." ICR has found these gatherings of teachers and administrators to be fertile soil for reaching men and women who love the Lord and who can use our resources to help accurately communicate the facts of science in relation

to God's Word.

Danielle Perez, ICR Promotions Specialist, has overseen many of the arrangements for travel, registration, exhibit space, and the countless details that accompany participation in regional conferences such as these.

Lalo Gunther, our Special Events Coordinator, organized the materials and resources that we shipped to the various locations, and has also served as ICR's ministry representative at many of the conferences.



ICR faculty and staff took many opportunities to teach from their own scientific specialties at ACSI conference seminars. Dr. Daniel Criswell and William Hoesch spoke to teachers at the Portland, Oregon, conference in early October. And Frank Sherwin, John Rajca, Gary Parker, and others shared at ACSI gatherings throughout the U.S. in October and November,

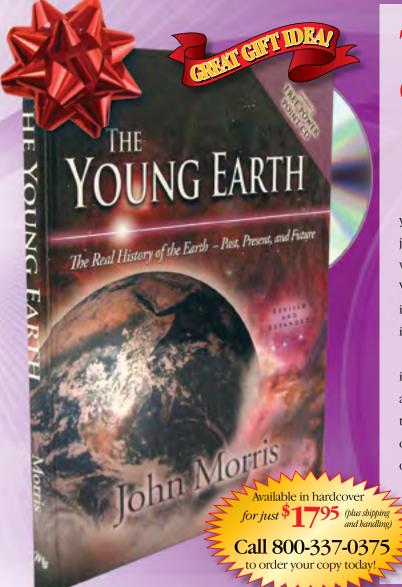
Ye shall be witnesses unto me both in Jerusalem, and in all Judaea, and in Samaria, and unto the uttermost part of the earth.

(ACTS 1:8)

with attendance at two more conferences slated for January.

Danielle Perez reported that at the Aurora, Illinois, convention in October, many of the teachers she spoke with said that "there is a hole when it comes to biblical science resources for the classroom." They stated that many secular science resources compromise the message of the Bible, and they were glad to discover a source for biblical creationist teachings. Our exhibit booth provided materials and the chance to subscribe to our free *Acts & Facts* and *Days of Praise* publications.

As the premiere educational institution in providing Christian teachers with advanced degrees in science education, ICR provides many other resources that can be used in the classroom. We also offer an online, self-paced Creationist Worldview Certificate program for teachers and administrators who want a thorough grounding in the biblical creationist worldview. ICR's message can also be found in the *Christian School Education* magazine, the ACSI National Directory, and regional convention programs. Based on the fruitful responses received thus far, we are encouraged to extend our message, even to "the uttermost part of the earth."



The age of the earth—does it really matter?

ow important is it whether you believe in a literal six-day creation or an evolutionary past that stretches back billions of years?

If you have ever been asked this—or asked it yourself—Dr. John Morris' newly-revised *The Young Earth* is just the resource you need to examine the scientific, as well as theological, significance of the question of origins. Whether the earth is young or old is not just a matter for idle speculation. On the contrary, it is vital to understanding not just earth science, but also the biblical record.

The Young Earth asks, "What does our earth reveal about itself?" Designed for both group and self-study, this classic and definitive work includes a CD with PowerPoint presentations that illustrate key concepts such as salt levels in the oceans, the age of the atmosphere, the accumulation of ocean sediments, and much more.

Follow Dr. Morris as he takes you through the evidence that ultimately demonstrates that scientifically—and irrefutably—the truth of God's world proclaims the truth of God's Word.

IRA Rollover: Final Call

ime is running out! Owners of a traditional or Roth IRA who are at least 70½ years old can distribute up to \$100,000 *tax free* to the charities or non-profit organizations of their choice—but only until the end of December 2007. We want to make sure that everyone who qualifies and wants to take advantage of this opportunity has the chance to get the information they need before the moment slips away.

So whether the Lord leads you to sup-

port ICR or any another ministry that is accomplishing His work, now is an excellent time to practice good stewardship and aid those tax-exempt organizations that God has laid on your heart. To find out more about making a contribution through the IRA rollover provision, please contact your financial advisor before the end of the year. Or for more information on this and other ways to contribute financially to the Lord's work,



contact Henry Morris IV, ICR's Director of Donor Relations, at 800-337-0375.

A BLUEPRINT FOR PROGRESS

HENRY M. MORRIS III, D.MIN.

henever we have to go through a construction project in our home, church, or office, it often seems like everything "normal" takes a back seat! Excitement grows as the preliminary planning and dream become reality, but "fear" sneaks itself into the mix as well, while strangers invade our space and every day seems to present a new set of challenges. That's a bit how we have been feeling recently as the renovation of Building B on our new Dallas campus nears completion.

Some of the unwritten "rules" of construction are:

- 1. It always takes longer to get started than you hoped.
- 2. It always costs more money than you estimated.
- 3. It always takes longer to complete than you planned.

With city permits in hand, a general contractor hired, and plans approved, we began construction on October 22nd (about a month later than we anticipated). Walls have come down, old carpet has come out, a small asbestos abatement has taken place, and we're starting to see a building that was originally intended to be a warehouse developing into a first-class office and laboratory complex where students can learn, community leadership can grow, and people can actually come to demand the evidence for biblical creation from ICR!

You may remember from earlier descriptions in *Acts & Facts* that our Dallas campus contains three buildings totaling some 52,000 square feet. The administration building (Building A, about 10,500 square feet) currently houses Administrative Services, Internet Ministries, Commu-

nications, Information Technology, and the ICR Graduate School offices. Building B (about 11,000 square feet) will house faculty offices and two major science laboratories, computer and telecom centers, radio studios, and associated support functions.

New, larger biology and geology labs will enable our research and technical staff to use state-of-the art equipment and have space to pursue upcoming and continuing projects. An additional classroom will be equipped to allow interactive class and lab work, lectures, and presentations, as well as be available to the Christian community for appropriate functions. The building will also house ICR's theology library, many of whose 3,500 volumes are rare editions from the Arnold Eilhert collection. Making these wonderful books available to our staff, as well as to local teachers and church leadership, will further our mission goals. The science library, for those of you concerned about that, is now all online.

The schematic drawing of our early floor plans will help you visualize the new space somewhat, but, allowing for Rules 2 and 3 above, changes and tweaks here and there should make the building a bit more

functional. In upcoming issues, we will try to have some pictures of the completed complex for you. As of this writing, our target date for occupancy is December 12th. Please pray with us about this important step in our growth.



Henry M. Morris III is Chief Executive Officer of the Institute for Creation Research.

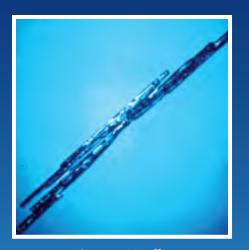


Figure 1. Needle.

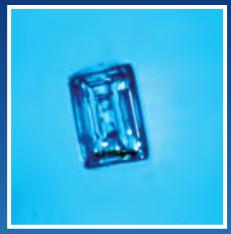


Figure 2. Hexagonal column.



Figure 3. Hexagonal plate.



Figure 4. Broad branch stellar.



Figure 5. Hexagonal plate with extensions and rime.



Figure 6. Stellar.



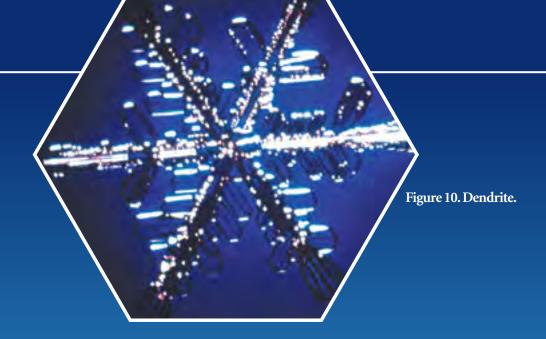
Figure 7. Dendrite.



Figure 8. Double dendrite.



Figure 9. Capped columns.



Microscopic Masterpieces: Discovering Design in Snow Crystals

LARRY VARDIMAN, PH.D.

ne of the most beautiful wonders of nature God has given us is the amazing variety of shapes of snow crystals that fall from the sky on a cold winter's night. Johann Kepler, the famous astronomer known for his laws of motion of the earth around the sun, conducted a study he titled A New Year's Gift, or On the Six-Cornered Snowflake when he was a young, aspiring scientist. Kepler was crossing the Karlsbrücke (Charles Bridge) in Prague, Czechoslovakia, on his way to a New Year's Eve party at the home of John Matthew Wacker when he noticed specks of down falling on his coat, all with six corners and feathered radii. He was embarrassed to appear before his patron without a New Year's gift and decided that a study of the pattern of a snowflake that "comes down from heaven and looks like a star" would make a perfect present.

Kepler's study was done entirely without a microscope or other equipment that could have allowed him to observe the microscopic structure of snow crystals and how they form. He was limited to optical observation, analogy, and logic in trying to explain why the snow crystals all had six corners. He considered the stacking of cannonballs, beehives, flowers, and other space-

filling geometries that later proved fundamental to the field of crystallography. He finally concluded after considerable exploration of many possible explanations that a "formative faculty" exists within the essence of ice that causes it to form in hexagonal patterns. Seldom has a mind of the first order so charmingly articulated an approach to solving a problem.

Modern Approaches

Hallet and Mason² offered a modern explanation of why snow crystals exhibit hexagonal patterns. They found that water molecules are preferentially incorporated into the lattice structure of ice crystals as a function of temperature. Molecules from the surrounding vapor that land on a growing crystal migrate over its surface and are fixed to either the axial or basal planes depending upon four temperature conditions. For example, snow crystals will grow lengthwise to form long, thin needles and columns like Figures 1 and 2 when the temperature is between about -3°C and -8°C. When the temperature is between about -8°C and -25°C, plate-like crystals will form as shown in Figures 3 through 10. Beautiful stellar and dendritic crystals form at about -15°C. In addition, the relative humidity

of the air and the presence of supercooled liquid cloud droplets will cause secondary growth phenomena known as *riming* and dendritic growth. The small, dark spheres attached to the edges of the plate in Figure 5 are cloud droplets that were collected and attached to the snow crystal as rime as the crystal fell through these droplets on its way to the earth's surface. The dendritic and feathery edges of Figures 6 through 10 are produced by the rapid growth of snow crystals in a high-humidity environment.

A number of other scientists have also studied snow crystals in detail. Notable among these were Nakaya,3 and Magono and Lee4. In addition, many crystallographers have studied and written on the characteristics of crystal growth and why molecules and atoms form into a limited number of basic patterns. The modern explanation of the hexagonal symmetry of snow crystals is that a snow crystal is a macroscopic, outward manifestation of the internal arrangement of the molecules in ice. The molecules form an internal pattern of lowest free energy, one that possesses high structural symmetry. For the water molecule this is a type of symmetry called hexagonal close pack. Science is still searching for the genesis of this property

that Kepler called the "formative faculty."

Evidence of the Creator

Whyte concluded:

Modern scientists have the advantage of sophisticated laboratory facilities for growing and observing ice crystals, high resolution photomicrographic equipment, and conceptual advances in understanding very small particles. However, the most basic principle of why the initial molecules in an ice crystal assemble in a hexagonal pattern has still not been fully simple water explained. In his essay on molecules that form ice Kepler's snowflake study,

If

Yet a puzzle remains. For the fact which so impressed Kepler still constitutes a challenge: threedimensional geometrical the DNA molecule that symmetry plays an important role in the visual world and yet it is not clear how it is generated in a universe supposedly dominated by random interactions and disturbances. We should not expect complete knowledge of highly complex systems, but it is reasonable to require of science a simple explanation of simple observations. If the hexagonal snowflake is

Science always asks the questions of how and why. But in this case an even more basic question comes into play-how can order be explained in the context of a random, chaotic universe? In other words, if we don't believe in a Creator God, the universe should not be ordered. Where is this structure coming from?

highly complex, is there no short cut from

the postulates of physics to our visual ob-

servations? What in the ultimate laws pro-

duces visually perfect patterns?5

The issue could be turned around. Because we observe order and design in the universe, as exemplified by the six-cornered snowflake, doesn't this demand a Creator who supplies this order and design? Kepler basically concluded this when he proposed his term "formative faculty." That is, a basic tendency was built into the very atoms and molecules of our world to produce this order. The characteristics of the oxygen and hydrogen atoms were designed by God to combine in ways that produce the hexagonal close pack pattern and form the six-cornered snowflake. Unlike linear molecules like carbon dioxide, the water molecule is asymmetric. It is that asymmetry that favors the hexagonal arrangement.

Ice crystals are composed of simple, re-

peated internal patterns that pro-

duce beautiful, external shapes.

And built into the laws that

govern ice crystal growth

patterns are temperature crystals exhibit the "formadependencies that add tive faculty" of God's creative filigrees to the basic hexagonal form. Colhand, consider how much umnar shapes, needle more design is included in shapes, plate shapes, stellar shapes, and dendritic shapes are just some of the determines life additional patterns in which forms. snow crystals grow. In fact, because of the myriad of possible combinations of the millions of individual molecules that make up a single ice crystal, it can truly be

> And if simple water molecules that form ice crystals exhibit the "formative faculty" of God's creative hand, consider how much more design is included in larger molecules such as the DNA molecule that determines life forms. The order and design we see in DNA and the laws of nature should forever put to rest the belief that God does not exist. The very molecules testify to God's existence and His love of order and beauty.

said that no two snow crystals are exactly alike!

I corresponded with astronomer Carl Sagan for two years before his death and had conversations about such evidences for God's existence. In one of his letters he wrote, "The only 'Author' of Earth history that I see is the laws of Nature. Where they come from and why they are the way they are is another and of course very difficult issue." So, the evidence of order and design in our world is a very powerful witness, even to professed unbelievers.

A previous Acts & Facts article6 discussed

the erroneous use of the growth of snow crystals as justification for the increase in order that would be necessary for spontaneous evolution. It was demonstrated that the total change of entropy in the universe during the growth of a snow crystal results in a net decrease in order, which agrees with the second law of thermodynamics. The presence and growth of order in snow crystals are evidences for the existence of God, His design in natural processes, and His love of order and beauty. How much more validation of Scripture does one need in order to believe the Lord when He says, "All things were made by him; and without him was not anything made that was made" (John 1:3)?

Beautiful Images of Snow Crystals

For readers who would like to study snow crystals in more detail, several books containing beautiful photomicrographs are available. A classic book containing over 2,000 snow crystal images taken in the late 1800s and early 1900s by a Vermont farmer known as "The Snowflake Man" is Snow Crystals by Bentley.7 A modern collection of award-winning snowflake photographs was recently published by Libbrecht.8 Some of his snow crystal pictures were recently used in a collection of stamps by the U.S. Postal Service. He also has a website at www.snowcrystals.com.

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JOHN D. MORRIS, PH.D.

hristian apologetics—the systematic defense of the faith—has become popular in recent days. We are commanded to know what we believe and why we believe it, and to be able to defend it scripturally, historically, and scientifically against all detractors (1 Peter 3:15). Indeed, it is a welcome sight to see so many believers embracing this concept.

Several Christian universities are now awarding degrees in apologetics. Many ministries are giving seminars on the subject, and numerous Christian radio programs use the term apologetics to describe themselves, as do a few Christian television programs. There are apologetic ministries that specialize in prophecy, and others that specialize in cults. Some are geared for high schoolers, and some for college students. We can't help but appreciate those who strive to equip Christians to stand strong in the faith. Such endeavors are sorely needed.

Most Christians engaged in apologetics claim to believe in biblical inerrancy. At ICR we take this to mean that you believe all of Scripture, even the literal teachings of young earth creation. But what do we make of the fact that most national apologetic ministries accept some form of evolu-

tionary or old-earth thinking? It has become commonplace for those involved to say, "I haven't made up my mind on the age of the earth," which is like saying "Three days of the week I'm a young earther, three days I'm an old earther, and one day I just don't know."

Often I'm an invited guest on "apologetic" radio programs. All too often, the host does not practice defending Scripture as it relates to creation, but instead points out what he perceives to be its weaknesses in relation to modern scientific theories. For myself, I am certain that science supports a young earth. Scripture is authoritative and clear on that. Why don't self-proclaimed Christian "leaders" rejoice in the evidence supporting scriptural truth, rather than naively accepting Big Bang cosmology, progressive creation, or theistic evolution?

Several years ago I debated old-earth and Big Bang advocate Hugh Ross on a nationwide Christian radio program. I brought up several scientific problems with the Big Bang, but focused on the scriptural evidences. The program ended with the host proclaiming, "Morris has the better scriptural case, but Ross has better science. I'll stick with Ross." How dare the Christian host call himself a *biblical* apologist? Is not Scripture enough? Must we rely on atheists like Carl Sagan to tell us how to interpret Scripture? Even if young earth science were not firmly grounded on the evidence—which it is—shouldn't Christians hold their questions in abeyance until more research is done, rather than abandon the clear teaching of God's Word?

Modern apologetic efforts are frequently a fence-sitting exercise, and all too often slide over to the other side when it comes to the Bible's scientific accuracy and relevance. But Scripture is clear on this point, and absolutely sufficient. When Christian "leaders" persist in waffling on important issues, perhaps Christ's message to the church of Laodicea is appropriate:

I know thy works, that thou art neither cold nor hot: I would thou wert cold or hot. So then because thou art lukewarm, and neither cold nor hot, I will spue thee out of my mouth. (Revelation 3:15-16)

Dr. Morris is President of the Institute for Creation Research.

Galloping Glaciers

WILLIAM A. HOESCH, M.S.

y the nearly imperceptible and inexorable work of glaciers, even the mighty mountains are worn down." Such dogma was routinely heard only a few decades ago in all of our university campuses. It is true that modern slow-moving glaciers are gradually eroding rock today and that glacial ice was responsible for some of earth's most breathtaking scenery. But have glaciers always moved at these slow rates? What does glacial surge tell us about the time it may have taken to create stunning landscapes like Yosemite Valley?

A curious thing happens from time to time

in glacier-filled valleys around the world. A minority of glaciers that usually flow at rates measured in centimeters per day are sometimes known to surge, or "gallop," at rates of up to 112 meters per day. The significance to geology is that the erosion done in a single, day-long gallop may be far more extensive than what the normal rate of erosion can accomplish in a year.

> Glacial misbe-

havior like this is sometimes hazardous to normal human activities. For example, when central Asia's largest valley glacier (the Fechenko Glacier) recently surged, the inhabitants of several villages watched helplessly as the ice mass plowed over their homes. And Pakistan's Kutiah Glacier advanced 12 kilometers over a period of 3 months in 1953.

Eyewitness accounts of galloping glaciers seem to substantiate the claim that the surge begins high up on a glacier and then pushes down-valley in a wave. As the brittle upper surface of the glacier buckles violently, it apparently generates a deafening noise. Some people have described loud rumblings and snapping sounds; others have mistaken the sounds for earthquake tremors.

Positive evidence exists for ice surges on a far grander scale in the past. Deep sea cores from the North Atlantic reveal a highly irregular glacial record during the post-Flood Ice Age. Rather than regular and steady sediment accumulation, the core evidence points to large pulses of ice-rafted debris that accumulated suddenly. Marine sediments directly overlying these debris concentrations reveal a peculiar freshwater signature, leading to the interpretation that vast bodies of ice-melt suddenly freshened the oceans on the heels of major surges of continent-scale ice sheets.

Called Heinrich events (after marine geologist Hartmut Heinrich), these glacial phenomena have come under sharper focus as political fears concerning climate change have grown in recent years. What is most puzzling, however, is that the events appear to correspond with globally cold periods, not warm ones. In any event, it is increasingly evident that erosion during the Ice Age was not protracted over vast periods of time, but rather occurred primarily during very brief episodes. The need to invoke a long timescale in glacial geology does not seem to be based on

Like all areas of earth history, it is becoming clear that the "rare event" in glacial geology may have provided more significant erosional force than that produced by routine and gradual processes. A biblical post-Flood Ice Age that lasted only a few

thousand years makes good sense as an explanation for large-scale, glacially-eroded landscapes on earth.



William A. Hoesch is Research Assistant in Geology.

Image courtesy of Alicia Hoesch.

Inflating the Evid

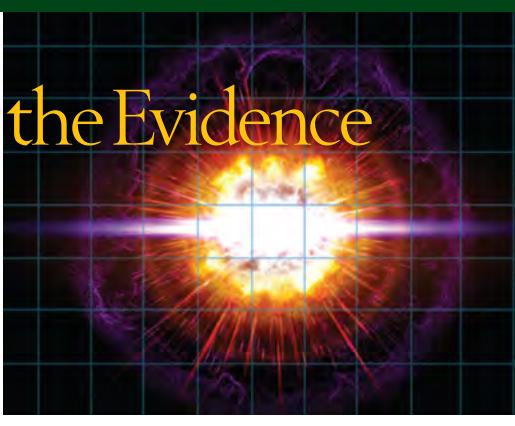
DAVID F. COPPEDGE

n their quest to disprove design in the universe, scientists have produced evermore speculative models of cosmology. Big Bang cosmology, for example, relies heavily on a process called *inflation*, an ad hoc speculation that remains highly controversial 26 years after it was first proposed.

By the 1980s, cosmologists were struck by the homogeneity and flatness of our universe. In other words, matter appears to be uniformly distributed on a large scale, and the average density of matter in the universe is balanced against its expansion rate to a high degree of precision. These and other properties appear too finely tuned to be a matter of chance.

Uncomfortable with this apparent design, scientists sought a naturalistic explanation. In 1981, Alan Guth proposed the first inflationary cosmology, postulating that "the universe expanded exponentially for a tiny fraction of a second very early in its history—growing from a patch as small as 10^{-26} m[eter], one hundred billion times smaller than a proton, to macroscopic scales on the order of a meter, all within about 10^{-35} s[econd]." This expansion theoretically flattened space-time with a quick stretch, masking any inhomogeneities in the original fireball.

Cosmologists jumped on this hypothesis as a way for the finely-tuned state of the cosmos to appear "natural," meaning that scientists might characterize its initial conditions and the laws governing its evolution. "If any system should be natural, it's the Universe," said Sean M. Carroll in *Nature*. "Nevertheless, according to the criteria just described, the Universe that



we observe seems remarkably unnatural."2

Does inflation make the universe's apparent fine-tuning a "natural" outcome? Carroll answered that despite its popularity, "there is a skeleton in the inflationary closet, at least as far as entropy is concerned." Such rapid expansion would need extremely low entropy. He concluded that "it would seem that the conditions required to start inflation are less natural than those of the conventional Big Bang." Inflation, therefore, is a step backward in explanatory power.

On the question of matter, Guth concluded that resonances between quantum fields produced it: "Large numbers of particles would be created very quickly within specific energybands," he said. "This dramatic burst of particle creation would affect space-time itself, as it responded to changes in the arrangement of matter and energy." 5 So within a tiny fraction of a second, a material universe inflated by 26 orders of magnitude and filled itself with matter. Hardly a "natural" explanation.

Guth's original model was shown to be unworkable, but others arose to take its place: chaotic inflation, spontaneous inflation, and even eternal inflation. "Needless to say, proposals of this type are extremely speculative, and may well be completely wrong," Carroll stated.6

In short, inflation is no help to the Big Bang theory. It *assumes* the flatness of the universe rather than predicting it, relegating the idea to an untestable speculation that says nothing more than "strange things happen."

There is one form of inflation that matches the observations perfectly, but is never considered by secular cosmologists. This model alone, however, has the initial conditions and power to explain all the properties of the universe:

He hath made the earth by his power, he hath established the world by his wisdom, and hath *stretched out the heavens* by his discretion. (Jeremiah 10:12, emphasis added)

Observed design makes sense when the Designer is not arbitrarily excluded from the model. lacktriangle

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David Coppedge works in the Cassini Program at the Jet Propulsion Laboratory. The views expressed are his own.

TO THE **EDITOR**



Thank you for both Acts & Facts and Days of Praise. I teach in the jail ministry here...[and] had included in one of my sermons a portion of Days of Praise that spoke on The Light. As a result...a man was saved that night. This was not your typical jail house salvation. He wanted to know how and when that Light would come into his life. With many tears and an unashamed walk to the front of the class and then kneeling, he received Christ as his Savior in front of the other 25 men. In his words he repented and asked Christ to take over his life. We started the night reading your devotional and ended it in a salvation prayer. Thank you.

-G.R.

Just finished reading the latest issue [of Acts & Facts], and the articles by D. Russell Humphreys on Pioneer anomalies and David F. Coppedge on Io eruptions were both exceptional! I've been supporting ICR for over a year and look forward to visiting the museum next month when I'm in the area. I also enjoy listening to your Radio Log each month. Thanks for everything y'all do!

— G.G.

I just wanted to send a note of thanks for the article by D. Russell Humphreys, Ph.D., "Creation Cosmologies Solve Spacecraft Mystery." I never understood creation like he explained or visualized it in "Figure 2. Basic biblical cosmos."

I've been sharing Acts & Facts with a couple of gentlemen at my last place of employment. I no longer have a job, but I still send the A&F into the office for them.

I've been reading A&F for years now and love it when you have exciting articles like this one by Russell. Please feed me more. It's almost like feeding on the Word of God. I love to learn what A&F has to offer.

— *P.P.*

Correction

In the article "Mutations: The Raw Material for Evolution?" in the September 2007 edition of Acts & Facts, a ratio was listed on page 12 as 0.000041. The correct ratio is 0.00041.

Have a comment? Email us at editor@icr.org. Or write to Editor, P. O. Box 59029, Dallas, Texas 75229.



Weekend of December

Oh, Deer!

There are many different types of deer and these beautiful and graceful creatures can quietly roam through the forest, or run like thunder across the tundra. But does the wide variety of deer give credence to evolutionary assumptions? To hear what creation scientists say about this, tune in to this informative program!

Weekend of December

Gold, Frankincense, and Myrrh

During the Christmas season we sing songs proclaiming the wondrous birth of our Lord and Savior. One such carol describes the gifts of the wise men, but

was there a special reason for the treasures given to the Christ child? Listen in as we discuss the gifts of the Magi and unwrap the meaning behind them.

December

Weekend of Beautiful Bethlehem

What was it like in Bethlehem so long ago on that wonderful night when Jesus was born? Although most of us won't be spending Christmas in Bethlehem this year, learning about the birthplace of our Lord can help us focus on the true meaning of Christmas. Come along with us as we spend some time in beautiful Bethlehem!

Weekend of December

Creation and the Virgin Birth

At Christmas, we celebrate Messiah's coming to earth to redeem us, and we wonder in amazement

at His miraculous virgin birth. But why was it significant that Christ be virgin-born, and how was that accomplished? For answers to these important questions, tune in this week!

Weekend of December

Winter Animal Camouflage

Within the beauty of a snow-covered meadow or on the frozen tundra, winter life abounds, though

it may be hard to see! Some animals are masterfully camouflaged for the winter season, but is this feature just a lucky evolutionary benefit? Listen in to learn about some of the unique creatures that were created with the ability to change color for the white wintry season.

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To find out where you can hear ICR broadcasts, please email radio@icr.org with your name and address. We will gladly send you a radio station listing for your state. If our programs are not aired in your area, we would be happy to send you a free demo packet to take to your local station.



HENRY M. MORRIS IV

f you have children in your family, this is a question you probably only need to ask once as Christmas approaches. It is usually followed by a chorus of "got-to-haves" and "have-to-haves," delivered with such passion and conviction that it just about breaks your heart! And like any good parent, grandparent, aunt, or uncle, you try your best to oblige.

While it is certainly biblical "to give good gifts" to our children (Matthew 7:11), the true reason we give gifts at Christmas is often lost during the frenzy of activity surrounding the season. With gifts to buy, decorations to put up, meals to prepare, and get-togethers with family and friends to plan, it is little wonder we may lose focus on God's perfect "Gift" to us

Advertisers bombard us with constant messages to buy the latest "treasure" to show how much we care for those we love. We have all felt pressure to give something, and while our intentions may be good, it is all too easy to get caught up in the materialistic side of Christmas. Is it any wonder we become distracted and focus our attention on earthly "treasures" rather than on the ultimate Gift? Consider what the Gift Himself had to say about this in the Sermon on the Mount.

Lay not up for yourselves treasures upon earth, where moth and rust doth corrupt, and where thieves break through and steal: But lay up for yourselves treasures in heaven, where neither moth nor rust doth corrupt, and where thieves do not break through nor steal: For where your treasure is, there will your heart be also. (Matthew 6:19-21)

Jesus instructed believers to "lay up…treasures in heaven" rather than on earth. The term "lay up" means to store or build up a reserve, and implies a dedication of skill, energy, and resources over time. While the pursuit of earthly treasure is certainly not wrong if it is used to provide for your family and other Kingdom purposes, the treasures we should "lay up" are the heavenly kind. The reasons for this are quite simple—heavenly treasure does not decay, nor can it be stolen from the Creator's mighty hand!

But the final sentence provides the real zinger, for here we learn why our focus should be on heavenly treasure. "Treasure," in whatever form, indicates the attitude of the heart. In other words, what you spend your time, energy, and money on reveals the true nature of your desires. How humbling and convicting! Truly, the Word "is a discerner of the thoughts and intents of the heart" (Hebrews 4:12).

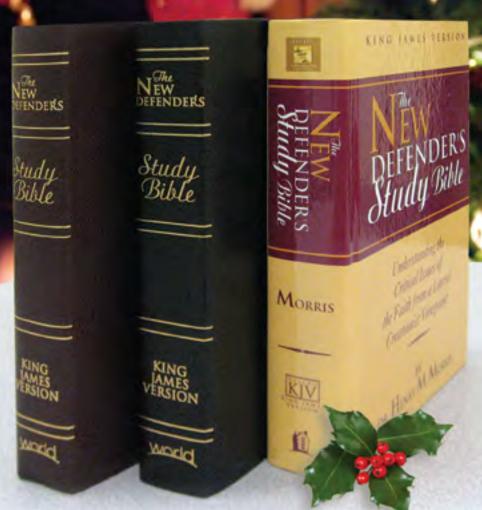
It seems fitting then, with the approaching Christmas season, to rephrase our Christmas question in context with our Lord's instruction: "So, where is your treasure? Where is your heart?"

Please know that the "heart" of ICR is to uphold the matchless Word of our Creator, and we are so humbly grateful to those who share our vision through their prayers and finances. Our agenda for 2008 is positively bursting with new science and minsitry initiatives, and we pray that our Creator will provide the means to see these bear much lasting fruit. If you are able, please consider how you can help in this work.

Henry M. Morris IV is Director of Donor Relations.

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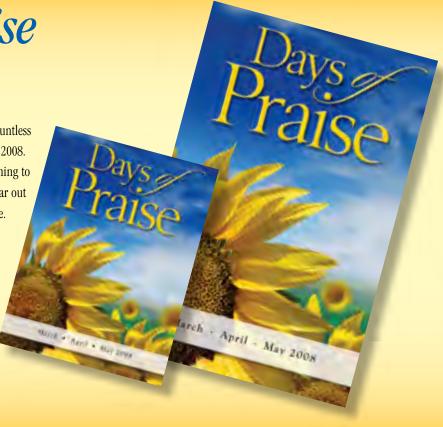
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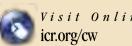
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