

INSTITUTE FOR CREATION RESEARCH

www.icr.org

MAY 2014

BROKEH GISTERKS

Page 5

New Dog Genome Research Nixes Evolutionary Paradigm Page 9 The Solar System: Asteroids and Comets Page 12

Ancient Whale Graveyard Points to Genesis Flood Page 16 Do Tree Rings Disprove the Genesis Chronology? Page 21

THE BOOK OF BEGINNINGS: VOLUMES ONE, TWO, AND THREE DR. HENRY M. MORRIS III





enesis has become, for some, the forgotten book. Many pastors and teachers avoid it for fear of controversy. The result is that growing numbers of Christians are ignorant of God's revelation about our beginnings.

In his *Book of Beginnings* trilogy, Dr. Henry M. Morris III comprehensively demonstrates that the Genesis record can only be understood as God's inerrant documentation of human history.

In volume one, Dr. Morris presents commentary on the Genesis creation account through the eve of the great Flood. Volume two explores the pre-Flood world, Noah's preparations, the Flood's destruction, and the restarting of human history. The final volume picks up with Abraham and his descendants as God builds the nation through which He will work out His great plan of redemption.

The book of Genesis is the foundation of the Bible. Today's world desperately needs the truth that is only found in God's Word. *The Book of Beginnings* provides a powerful resource for all those who would impact their world for Christ.

The Book of Beginnings trilogy includes:

- Vol. 1: Creation, Fall, and the First Age
- Vol. 2: Noah, the Flood, and the New World
- Vol. 3: The Patriarchs, a Promised Nation, and the Dawning of the Second Age

sтвов <u>Set of Th</u>ree \$19.99 Also available individually for Kindle, NOOK, and through the iBookstore.

Please add shipping & handling to all orders. Visit the ICR store today at www.icr.org/store or call 800.628.7640.



VOLUME 43 NUMBER 5 MAY 2014

Published by INSTITUTE FOR CREATION RESEARCH

P. O. Box 59029 Dallas, TX 75229 214.615.8300 www.icr.org

EXECUTIVE EDITOR

Jayme Durant

SENIOR EDITOR Beth Mull

EDITORS

Michael Stamp Christian Staley Truett Billups

DESIGNER

Dennis Davidson

No articles may be reprinted in whole or in part without obtaining permission from ICR.

Copyright © 2014 Institute for Creation Research











FEATURE

5 Broken Cisterns Henry M. Morris III, D.Min.

RESEARCH

9 New Dog Genome Research Nixes Evolutionary Paradigm JEFFREY TOMKINS, PH.D.

IMPACT

12 The Solar System: Asteroids and Comets JASON LISLE, PH.D.

BACK TO GENESIS

16 Ancient Whale Graveyard Points to Genesis Flood

FRANK SHERWIN, M.A.

17 From the Sea to the Land JOHN D. MORRIS, PH.D.

APOLOGETICS

19 Contending for the Faith and the Genesis Mandate

JAMES J. S. JOHNSON, J.D., TH.D.

20 Creation Conversion: The Turning Point

CREATION Q & A

21 Do Tree Rings Disprove the Genesis Chronology?

BRIAN THOMAS, M.S.

STEWARDSHIP

22 Honorable Substance

HENRY M. MORRIS IV



Unlocking the Mysteries of Genesis

or over a year, ICR has poured our efforts into creating a DVD series that captures the truths of creation for those who may not be able to hear our speakers in person. After countless hours, days, and months spent in labs, studios, and outdoor settings—all with the goal of addressing the critical issues of creation science—we're excited to share a resource that features cutting-edge insights from experts in a variety of science disciplines, along with compelling research and breathtaking images. *Unlocking the Mysteries of Genesis* arrives in-house this month, and you can be one of the first to enjoy this newest release from ICR!

I've had the pleasure of working behind the scenes on this incredible production, and after watching it I know you'll walk away with a fresh understanding of the sometimes difficult-to-comprehend issues surrounding creation. Our dynamic host will lead you through discoveries of truth in awe-inspiring locations around the country. We visited gardens and nature sites throughout Texas and even filmed at the Grand Canyon, the Dinosaur National Monument in Utah, and most recently at the Matanuska Glacier in Alaska (see pictures below). From discussions on dinosaurs to the Ice Age, the series covers the origin of the universe, the origin of man, design, fossils, Noah's Flood, the age of the earth, ancient civilizations, and more.

Unlocking the Mysteries of Genesis is perfect for churches, home and community small groups, and homeschool co-ops. You can use this set in weekly Bible studies, mid-week church services, youth group meetings, homeschool enrichment classes, and Sunday church services. This series equips participants to counter evolutionary tenets and share creation truths with confidence—an ideal unit study or summer program. Designed to reach a millennial generation full of questions, this series will engage all ages. Everyone will learn from the powerful takeaways in each episode and enjoy the challenging questions in the viewer guidebook that accompanies each 12-DVD collection.

Order your set after May 15 while the series is discounted for a limited time only. For more information, go to pages 10 and 11—you can place your order at www.UnlockingTheMysteriesOfGenesis.org. Be sure to spread the word about this unique new series!

In his article this month, "Broken Cisterns" (pages 5-7), Dr. Henry M. Morris III reminds us that man-made philosophies are "broken cisterns" that can never hold the living water of God's truth. Strong cisterns are always constructed on the bedrock of God's creation account. Dr. Morris goes on to remind us that "who God is and what God has done is observable to everyone by 'the things that are made.'" Understanding creation begins with observing what God has created. *Unlocking the Mysteries of Genesis* prepares us to debunk man-made philosophies and recognize the "living water" that comes from our Creator God alone.

Jayne Durant

Jayme Durant Executive Editor



BROKH CISTERIS

HENRY M. MORRIS III, D.MIN.

"For My people have committed two evils: They have forsaken Me, the fountain of living waters, And hewn themselves cisterns—broken cisterns that can hold no water."

(JEREMIAH 2:13)

early 27 centuries ago, the prophet Jeremiah delivered God's message of pending judgment to the nation of Judah. Some 150 years prior to Jeremiah's ministry, Judah's northern neighbor, the

nation of Israel, had been taken captive by Assyria. Both nations had capitulated broadly to idolatry. Although Judah had experienced earlier periods of revival, with the death of faithful King Josiah it became a pagan nation, falling into gross immorality, open political corruption, and a deplorable form of cultic Baal idolatry.

God's Comparison

It is a bit difficult for us to understand the significance of the holy anger expressed by the Lord through Jeremiah toward the nation of Judah. Part of that difficultly lies in our unfamiliarity with the use of "cisterns"—particularly as God identifies Himself as a "fountain of living waters" and condemns the pathetic attempt of the nation to build "broken cisterns" to replace the "living waters" supplied by Jehovah. The Samaritan woman came to the well to draw the water she needed to live. Jesus told her that He could give her "living water"—an internal spring of water—that would provide eternal life.

Most of us will remember the Lord Jesus' interchange with the Samaritan woman recorded in chapter four of John's gospel. She had come to draw water out of a public well—Jacob's well in this case—that was very similar in construction to the cisterns of antiquity, which were pits dug around a ground spring (living water) or an underground water table, then enlarged and plastered to hold a significant quantity of water. Most villages and nearly all cities had such a cistern that was maintained by the responsible government of the area and made available to the local citizens.

Some private homeowners built private cisterns, usually on the top of their houses, that were used to catch rainwater or to conveniently store enough for household needs. These private cisterns were rarely used for drinking water since they could easily be contaminated. But the "government cisterns" were constantly cleaned and routinely purged to provide fresh "living water" for the population.

The Samaritan woman came to the well to draw the water she needed to live. Jesus told her that He could give her "living water"—an internal spring of water—that would provide eternal life (John 4:11-14; compare John 7:38). That is the sense in which the Lord told Jeremiah that the people of Judah had forsaken the "fountain of living waters" and were attempting to construct "cisterns" that would not, and indeed, could not, hold any of the eternal water that came only from God. Any cistern we create for ourselves will be a broken cistern.

Rabshakeh's Taunt

Earlier, during the reign of Hezekiah, Sennacherib of Assyria sent his army under General Rabshakeh to threaten the nation of Judah. Hezekiah—a rare faithful king like Josiah—had recently completed the construction of an underground water tunnel to carry a large stream of "living water" into Jerusalem. He "stopped the water outlet of Upper Gihon, and brought the water by tunnel to the west side of the City of David" (2 Chronicles 32:30) and "made a reservoir between the two walls for the water of the old pool" (Isaiah 22:11).

Thus, the city of Jerusalem was given



a secure and sanitary source of fresh water for the needs of its population, and was prepared for an Assyrian siege should it come. And come it did as the huge army under Rabshakeh arrived on the outskirts of Jerusalem. The city quickly buttoned up to prepare for war, and Hezekiah sent out an envoy of his key counselors to meet with Rabshakeh and attempt to stave off a debilitating siege and a likely carnage.

Rabshakeh would have no parley. Brazenly, he strode to within shouting distance of the wall of Jerusalem (which was lined with the citizenry) and taunted them to forget the provisions of Hezekiah and Hezekiah's God. That speech promised the population of Jerusalem that if they would give up control to Assyria, pay tribute to Sennacherib, and worship the much more powerful gods of Assyria, they (the citizens of Jerusalem) would enjoy the benefits of a peaceful relationship with the greatest nation on Earth.

"Do not listen to Hezekiah; for thus says the king of Assyria: 'Make peace with me by a present and come out to me; and every one of you eat from his own vine and every one from his own fig tree, and every one of you drink the waters of his own cistern." (2 Kings 18:31)

Revival Came with Judah's Refusal

Fortunately, King Hezekiah and the nation of Judah listened to God's prophet Isaiah and refused the bluster and false promises of Rabshakeh. They trusted in the direction and counsel of God and His personal promise of protection given through Isaiah. And God delivered.

"Therefore thus says the LORD concerning the king of Assyria: 'He shall not come into this city, Nor shoot an arrow there, Nor come before it with shield, Nor build a siege mound against it. By the way that he came, By the same shall he return; And he shall not come into this city,' Says the LORD. 'For I will defend this city, to save it For My own sake and for My servant David's sake." And it came to pass on a certain night that the angel of the LORD went out, and killed in the camp of the Assyrians one hundred and eighty-five thousand; and when people arose early in the morning, there were the corpses—all dead. (2 Kings 19:32-35)

Broken Cisterns

Some things are fairly obvious. Anything that we do that forsakes the living waters provided by the God of creation will fail. He is "the way, the truth, and the life" (John 14:6). "Nor is there salvation in any other, for there is no other name under heaven given among men by which we must be saved" (Acts 4:12). All "other gospels," no matter where or how they come, are to be totally rejected (Galatians 1:8-9). Most evangelicals enthusiastically embrace an exclusive gospel that is only provided by the grace of God given through the substitutionary death of the Lord Jesus on the cross of Calvary and gloriously demonstrated as effective by the physical resurrection of Jesus of Nazareththe risen Christ is living proof of His victory!

But not all do so. There are "broken cisterns" being built in seminaries and departments of religion in universities across our land. These man-made cisterns appear to hold water but they leak because their foundations are not built on the Word of God. Some teach a universal salvation-the belief that ultimately all will be saved because God is good and would not eternally punish His creation with an eternal hell. Others promote a cooperative relationship whereby we maintain our salvation by good works and a careful adherence to certain systems and sacraments. Still others propose that salvation is ushered in as mankind becomes more "godlike"-that humanity will ultimately embrace the best of all religions and philosophies, becoming "one" with that which offends no one. These various kinds of theology have one thing in common: They each turn their back on the authority of God's Word and the efficacy of His gospel. May God rebuke those who teach them.



"Whoever drinks of the water that I shall give him will never thirst. But the water that I shall give him will become in him a fountain of water springing up into everlasting life." (John 4:14)

Slow-Leaking Cisterns

There are, however, more subtle breaks than these in the cisterns that men construct to store the "living water" of our great God. As we mature in our relationship with the Lord, much of our faith is dependent on our trust in the accuracy and authority of His revealed Word. The very first sin was brought about through the manipulation of Eve by the Adversary, who deceived her into doubting what God had said. This then led her to entertain the thought that God either could not or would not do as He said He would, and finally to suspect the very character and nature of God, and even ascribe malicious and self-serving deception to the Creator in His instructions for His creation.

Many times in the New Testament we are warned not to fall into the same trap of the "broken cisterns" of man-made philosophy.

Beware lest anyone cheat you through philosophy and empty deceit, according to the tradition of men, according to the basic principles of the world, and not according to Christ. (Colossians 2:8)

O Timothy! Guard what was committed to your trust, avoiding the profane and idle babblings and contradictions of what is falsely called knowledge—by professing it some have strayed concerning the faith. (1 Timothy 6:20-21)

You therefore, beloved, since you know this beforehand, beware lest you also fall from your own steadfastness, being led away with the error of the wicked. (2 Peter 3:17)

At the foundation of all false doctrine is the rejection of who God is. The classic overview that our Lord gave to the apostle Paul recorded in Romans 1:18-25 should be sufficient to focus our minds and hearts on the ultimate problem with "broken cisterns." This passage makes clear that who and what God has done is observable to everyone by "the things that are made." When anyone rejects that knowledge, there is no longer any excuse. Once the "living water" is rejectedwhether by a nation, an organization, or by an individual-any man-made cistern is insufficient to hold the great truths of the Creator because that cistern exchanges "the truth of God for the lie" and sets up a manmade device that worships "the creature rather than the Creator." The Scriptures are clear! "Living water" comes from God alone.

Any cistern that we manufacture from our own knowledge or capabilities will always be broken.



Dr. Morris is Chief Executive Officer of the Institute for Creation Research.

MAY 4 Grand Prairie, TX Oaks Baptist Church (B. Thomas) 972.263.2224

MAY 4 Tampa, FL Bayside Community Church (J. Johnson) 813.837.6007

 MAY 16-18 Chambersburg, PA Chambersburg Bible Church
 (J. Hebert) 717.264.2620 MAY 19-22 Chicago, IL Moody Bible Institute (R. Guliuzza) 312.329.4407

MAY 21
 Chicago, IL
 The Moody Church
 (R. Guliuzza)
 312.327.8600

MAY 22-25 Kissimmee, FL Florida Parent Educators' Association Homeschool Convention 2014 (J. Hebert) 877.275.3732 MAY 25 Dublin, OH Northwest Chapel (F. Sherwin) 614.761.0363

MAY 25 Hilliard, OH Oikos Community Church (F. Sherwin) 614.738.9794

MAY 29-31 Anaheim, CA 31st Annual CHEA Convention (J. Lisle) 562.864.2432

MAY 29

Yongsan International School of Seoul 285 Itaewon-ro, Yongsan-gu Seoul, Korea, 140-210 (R. Guliuzza) (82-2) 797-5104 ext. 210

May 30-31 2014 KACR Annual

Creation Conference Wonju, South Korea. (R. Guliuzza) www.kacr.or.kr

PASTORS CONFERENCE

May 19-22, 2014

Chicago, IL Moody Bible Institute (R. Guliuzza) 312.329.4407

For more information on these events or to schedule an event, please contact the ICR Events Department at 800.337.0375, visit www.icr.org/events, or email us at events@icr.org.

volutionists are desperate to find genomic evidence proving Darwinian ideas about natural selection and evolution. One of the chief areas where they have searched for such evidence is in the canine (dog) genome, by studying the DNA of both domestic and wild dogs.

ESEARCH

The basic paradigm describing the domestication of dogs is typically proposed as a two-phase process.¹ In the first part, it is believed that dogs were originally taken from the wild as wolves by early humans who selected and bred different varieties that were useful for companionship, hunting, and protection. In the second stage, which has continued up to this time, dogs allegedly co-evolved with humans, who became their caregivers. During this stage, humans developed the vast array of modern dog breeds that show remarkable variability in traits



number of wolf and wild dog genomes.³ The researchers discovered that the copy number of amylase genes was actually not fixed or stable across diverse dog, wolf, and wild dog genomes—but instead varied widely. In fact, as the data set for dog genomes has increased, it is now apparent that no consistent pattern for dietary evolution exists at all. The evolutionary lingo for such an observation is that the patterns are now called "complex" instead of showing evidence for selection.

Several evolutionists recently published a review of these two research papers, stating, "These results suggest a more complex pattern of amylase copy number variation in dogs and wolves that reflects our long-standing relationship with dogs, but may not have resulted during early domestication."⁴ The use of the term "complex pattern" means that no evolutionary trends could be detected for these genes.

The concept of natural selection has

New Dog Genome Research Nixes Evolutionary Paradigm

JEFFREY TOMKINS, PH.D.

for personality and appearance.

Related to this whole two-stage paradigm is the hypothesis that the genes associated with the digestive system of dogs would have evolved over thousands of years to reflect a change to a more human-oriented diet. Specifically, this is thought to be the case for dogs in modern human populations that eat high levels of carbohydrates found in grains and vegetables. Evolutionists believe that when humans first domesticated wolves these canines were hunters and therefore primarily meat eaters. Then humans and dogs, over time, became more dependent on the high-starch foods of agriculture-providing a type of "selective pressure" on the dog genome.

One recent study seemed to support

the idea that post-domestication selection altered the dog genome. Researchers concluded that, compared to wolves, a variety of regions in the dog genome showed evidence of changes in genes associated with the digestion of carbohydrates (starches).² With some digestive enzymes, such as amylases that encode enzymes that break down starch, the number of copies of those genes can vary in the dog genome. In particular, researchers in this study reported that modern dogs, which would benefit from more amylase genes because of their high-starch diet, had more copies of them in their genome compared to wolves.

However, this initial study was soon debunked by additional, more comprehensive research that examined a much greater once again lost steam as a viable model proving evolution—even within a single group of interfertile animals. And a recent supporting argument for it that seemed at first to be backed by hard science has now fallen in the wake of the genomics revolution.

References

- Wang, G. et al. 2013. The genomics of selection in dogs and the parallel evolution between dogs and humans. *Nature Communications*. 4 (5): 1860.
- Axelsson, E. et al. 2013. The genomic signature of dog domestication reveals adaptation to a starch-rich diet. *Nature*. 495 (7441): 360-364.
 Freedman, A. H. et al. 2014. Genome Sequencing High-
- Freedman, A. H. et al. 2014. Genome Sequencing Highlights the Dynamic Early History of Dogs. PLOS Genetics. 10 (1): e1004016
- (1): e1004016.
 Larson, G. and D. G. Bradley. 2014.
 How Much Is That in Dog Years? The Advent of Canine Population Genomics. *PLOS Genetics*. 10 (1): e1004093.

Dr. Tomkins is Research Associate at the Institute for Creation Research and received his Ph.D. in genetics from Clemson University.



UN OCKING THE MYSTERIES OF GENESIS

This generation wants HOPE. They want the ANSWER.

Give it to them!

"Absolutely fantastic!" "Best thing I've ever seen!" "Rivals anything on television!"



Includes one viewer guidebook-additional copies sold separately.

Host Markus Lloyd

Order May 27th Special Introductory Price! \$129.99 \$109.99

Order at UnlockingTheMysteriesOfGenesis.org, ICR.org/store, or 800.628.7640



- Captivate your audience this summer with this biblical blockbuster
- Satisfy your seekers with cutting-edge research
- Share the excitement about science that confirms the Bible
- Marvel at the stunning visuals and amazing facts

A 12-DVD series on Science and Creation like no other!



Add shipping & handling. Introductory price effective May 27 through June 30, 2014.



n the year 1801, Italian astronomer Giuseppe Piazzi discovered a new planet in our solar system between the orbits of Mars and Jupiter. Named Ceres, this new world was far smaller than the other planets, but unlike a moon it orbited the sun directly. The next year, astronomers found another small planet, also between the orbits of Mars and Jupiter, and named it Pallas. In 1804, yet another small planet, Juno, was discovered and then another, Vesta, three years later. By the middle of the nineteenth century, 15 of these minor planets had been located. Around that time, astronomers began to reserve the term planet for only the largest eight worlds of our solar system, and from then on, the newly discovered small worlds were called asteroids.

The Minor Planets

Today, astronomers have discovered and catalogued hundreds of thousands of asteroids. They revolve around the sun primarily in a "belt" between the orbits of Mars and Jupiter. The term asteroid belt may conjure images of a thick band of billions of rocks tumbling and colliding-surely a hazard to any spaceship that would dare pass through such a region! Science fiction reinforces such notions; consider the spectacular asteroid chase in the cult classic The Empire Strikes Back. But the real asteroid belt doesn't appear this way at all. Although there are likely millions of asteroids orbiting the sun, the volume of space in which they orbit is enormous. So, the average separation between any two asteroids could be hundreds of millions of miles. In other words, if you were standing on an asteroid, you probably would not even be able to see another asteroid with the unaided eye because they are so far apart.

William Herschel coined the term asteroid in 1802, shortly after the discovery of Pallas. The term is from the Greek and means "star-like" or "star-shaped"—a fitting name since in a telescope an asteroid looks just like a star. Both are point-like, showing no sizeable disk, unlike the eight large planets. The only way to visually discern an asteroid from a star is to look again at a later time; the asteroid will have moved relative to the stars. During the early 1800s, astronomers used the terms asteroid and planet inter-

MPACT

changeably for these new small worlds. But by the late 1800s, the asteroids were considered a separate category from planets. Even today asteroids are sometimes called "minor planets."

Ceres is the largest asteroid by far. It is 590 miles in diameter, about one-fourth the size of the moon, and is composed of rock and ice. The orbit of Ceres is nearly circular at an average distance of 257 million miles from the sun, giving it a 4.6-year orbital period. Other than its large size (compared to the other minor planets), Ceres is a fairly typical asteroid. Unlike the smaller asteroids, Ceres has sufficient gravity to force it into a spherical shape-just like the planets. For this reason, Ceres is also classified as a "dwarf planet." Since all the other asteroids lack sufficient gravity to maintain a spherical shape, Ceres is the only asteroid that is also a dwarf planet.

The second-largest asteroid by volume is Pallas.¹ However, the second-most-massive asteroid is Vesta. It is only slightly smaller than Pallas but is significantly denser. Vesta orbits at an average solar distance of 220 million miles in a nearly circular path. It is the only asteroid regularly visible with the unaided eye, but only at its closest approach to Earth, when it appears as a faint star. We now have detailed images of Vesta, courtesy of the *Dawn* spacecraft that orbited this asteroid from 2011 to 2012. The images reveal a large, not quite round, cratered boulder in space.

A handful of other asteroids have been visited by spacecraft. These include Gaspra, Eros, Itokawa, Lutetia, Mathilde, Steins, and Ida. Spacecraft provide high-resolution images of these tiny worlds that would not be possible with Earth-based telescopes. When the *Galileo* spacecraft flew past Ida, images revealed that this asteroid had an orbiting moon, which was named Dactyl. Dactyl is less than one mile in diameter, about onetwentieth the size of Ida. Since then, many other asteroid moons have been discovered.

Most asteroids tend to orbit relatively close to the plane of the eight planets, but a substantial fraction do not. Almost all aster-



Comet Hale-Bopp taken by Wally Pacholka on April 5, 1997, from the Joshua Tree National Park in California. Image credit: ©1997 Wally Pacholka of Long Beach.

oids orbit the sun prograde—the same direction as the planets. Less than 100 known asteroids are retrograde. Asteroid orbits can be nearly circular or highly elliptical. Despite their many numbers, the combined mass of all the asteroids is estimated to be less than the mass of the moon.

Classes of Asteroids

Asteroids can be classified either by their composition or by their orbit. Usually, the former can only be estimated by spectroscopic analysis. There are three common asteroid composition groups: group C (carbonaceous—the most common type, accounting for three-quarters of all asteroids), group S (stony/silicaceous—the secondmost common), and group M (metallic), along with a handful of rarer types. There are also subcategories of the main groups.

Classification by orbit is simpler and determined from observations. Most asteroids orbit between Mars and Jupiter without crossing the orbit of either planet. These are "main belt asteroids." But there are several other orbital classes as well. In most cases, each class is named for the first asteroid discovered of its type.

As you might imagine, of particular

interest are those asteroids that come relatively close to Earth. They are divided into four classes based on their orbit. First are the *Amor* asteroids. These have a perihelion (the closest point to the sun) that is closer to the sun than Mars but not as close as Earth. Most Amor asteroids cross the orbit of Mars, but they do not cross Earth's orbit. Second, there are *Atira* asteroids. Their orbits are entirely inside Earth's orbit, but they are very rare—only six Atira asteroids have been discovered.²

The last two classes of near-Earth asteroids are the *Apollo* and *Aten* groups. These asteroids actually cross the orbit of Earth. Those in the Apollo class have an average distance to the sun larger than Earth's and, consequently, an orbital period longer than one year. But due to their elliptical path, they occasionally come closer to the sun than Earth does. About nine out of ten of the Earth-crossing asteroids are of the Apollo class. The rarer Aten-class asteroids have an average distance to the sun smaller than Earth's, a period smaller than one year, and cross Earth's orbit near their aphelion (their farthest distance from the sun).

It may seem at first that with so many Earth-crossing asteroids, a devastating collision would be inevitable. But, the asteroids do not orbit in exactly the same plane as the Earth's. In most cases, their orbits never actually intersect, and therefore they can never collide. There are only a handful of known, relatively large Earth-crossers that pose potential danger for collision in the distant future. However, astronomers can accurately compute the future positions of these asteroids and have determined that

none pose any realistic threat in our lifetime. A number of smaller Earth-crossing asteroids may yet be discovered. But smaller asteroids would cause less damage upon impact, and the smallest ones burn up in Earth's protective atmosphere before they can reach the surface.

Trojans

An especially interesting group of asteroids is called Trojans. The majority of these asteroids orbit at the same distance from the sun as Jupiter. Consequently, they have an orbital period of just under 12 years-the same as Jupiter. The Trojans generally orbit in regions that are 60 degrees ahead of Jupiter or 60 degrees behind the planet. These locations are the L4 and L5 Lagrangian points respectively-locations of gravitational stability that form an equilateral triangle with the sun and Jupiter.³ The Trojans are so named because they "hide" in the orbit of Jupiter like the Greeks who hid in the wooden horse in the story of the Trojan War.4 Nearly 6,000 Trojan asteroids have been detected.5 Curiously, those in the leading L4 group outnumber those in the trailing L5 group by nearly 2 to 1.

Recently, astronomers have discovered that Jupiter is not the only planet to have Trojan asteroids sharing its orbit, though it certainly has the most by far. The asteroid Eureka, discovered in 1990, was found to occupy the L5 Lagrangian point of Mars. At least three other Mars Trojans have been discovered since then. Earth has one confirmed Trojan, the tiny (1,000-foot-diameter) asteroid 2010 TK_{7} . Venus and Uranus each have one confirmed Trojan, and nine Neptune Trojans have been discovered.

Our sun is merely one of over 100 billion stars in our galaxy. And we estimate there are over 100 billion galaxies in our universe.

Comets

Much like asteroids, comets are small solar-system bodies that orbit the sun directly. The main difference between asteroids and comets is their composition. Asteroids are rocky, whereas comets are essentially made of ice and dirt. Comets tend to have eccentric (highly elliptical) orbits. They spend most of their time in the outer solar system, far beyond Jupiter, where their ice remains a frozen mass. But when comets enter the inner solar system, the region occupied by the four terrestrial planets, solar heating vaporizes some of their surface ice. The materials begin to disperse into space but are pressed back by solar wind and radiation, causing the comet to form a highly visible "tail" of debris that points away from the sun.6

At their closest approach to Earth, the brighter comets are easily visible to the unaided eye and have been known since very ancient times. Until the late 1500s, comets were thought to be atmospheric phenomena. But the astronomer Tycho Brahe was able to measure the distance to a comet for the first time in 1577 and showed that they are far beyond the distance of the moon and are therefore celestial.

Anatomy of a Comet

Some of the more spectacular images of comets show a long tail of debris that may extend millions of miles into space.

But the source of that debris, called the *nucleus*, is typically only a few miles in diameter. Surrounding the nucleus is a nearly spherical cloud of gas and dust called the *coma*. When comets first reach the inner solar system, the coma

usually develops before any tail. Often, comets never develop a visible tail at all but appear as small spherical clouds in a backyard telescope.

The brighter comets generally do form a tail and usually two tails that differ by color. A light blue ion tail is narrow and always points directly away from the sun. This tail is composed of low-mass charged particles (ions) that are heavily influenced by solar wind. The ion tail is also called a plasma tail or gas tail. A white or yellowish-white dust tail is also present in many comets. Since dust particles are heavier than ions, they are launched into their own orbits that differ slightly from the comet's orbit. For this reason, dust tails are often curved-their particles are following Kepler's laws. Dust tails are usually wider and can be far more complex than ion tails. They can even fan into multiple tails in some instances. When Comet Hale-Bopp approached Earth in 1997, it beautifully manifested a blue ion tail and a white, curved dust tail. But some comets show only one of these two tails.

It boggles the mind to contemplate the possibility of billions of solar systems, each with treasures far different from our own. We are only at the very beginning of our exploration of God's universe.

Almost all comets have highly elliptical orbits, venturing from the inner solar system to beyond Neptune. Based on their orbital characteristics, there are two types of comets: short-period and long-period. Shortperiod comets have an orbital period less than 200 years and tend to orbit the sun prograde and in roughly the same plane as the planets.⁷ Long-period comets are those with a period larger than 200 years and have no particular preference in their orbital plane or direction. For example, Comet Hale-Bopp has an orbital period of over 2,500 years, and its orbit is inclined to the plane of the planets by almost 90 degrees.⁸

Both short- and long-period comets are a confirmation that God created them thousands of years ago, not millions or billions. Comets lose mass every time they pass through the inner solar system. We can estimate the mass loss from observations of the comet's tail. Based on this rate, and the mass of the nucleus, a typical comet can last no more than about 100,000 years. Some comets disintegrate much faster. Astronomers have observed a number of comets that were completely destroyed as they passed close to the sun. Such an event happened with Comet Ison this past December. Comets can also be lost through gravitational encounters with the planets, especially with Jupiter. In some cases, the comet is put on a collision course with Jupiter, as happened with Comet Shoemaker-Levy 9 in 1994. In other cases, the trajectory no longer forms a closed path, and the comet is literally ejected from the solar system.9

Centaurs

In 1977, American astronomer Charles Kowal discovered a minor planet orbiting in the outer solar system between the orbits of Saturn and Uranus.10 The object was named Chiron and was the most distant asteroid known at the time. As this asteroid approached its perihelion, it developed a coma-much to the amazement of astronomers. Yet Chiron is estimated to be 80 miles in diameter-far larger than any known comet but right in line with asteroids. This new object seemed to exhibit characteristics of both an asteroid and a comet. And it wasn't alone. Astronomers have subsequently discovered several hundred other minor planets in the outer solar system that are similar to Chiron. This new class of object is now called a centaur.11 Centaurs are minor planets that orbit between Jupiter and Neptune.12 Minor planets that orbit beyond Neptune are classified as trans-Neptunian objects (TNOs), whereas minor planets that orbit closer to the sun than Jupiter does are classified as asteroids.

Conclusion

The complexity and sheer beauty of our solar system inspire a sense of awe and wonder. We have a sun that emits heat and light equivalent to 4 trillion-trillion 100-watt light bulbs. We have eight planets, each with its own marvelous characteristics and beauty. We have discovered 173 moons in total orbiting these planets. And we have hundreds of thousands of small solar-system objects—asteroids, centaurs, TNOs, and comets. If the solar system had been the only thing God created, it would certainly be a praiseworthy achievement.

But our sun is merely one of over 100 billion stars in our galaxy. And we estimate there are over 100 billion galaxies in our universe. We now know that some of these stars have orbiting planets. Over 1,000 extra-solar planets have been detected, and in a handful of cases, they have been directly imaged. It boggles the mind to contemplate the possibility of billions of solar systems, each with treasures far different from our own. We are only at the very beginning of our exploration of God's universe. Who can guess what undiscovered gems the Lord has placed among the stars for our delight and His glory?

References

- Pallas is 360 miles across at its widest point, and is not quite round. Pallas orbits at about the same average distance as Ceres, and consequently has the same orbital period of 4.6 years. But unlike Ceres, Pallas has a fairly elliptical orbit that is tilted to the plane of Earth's orbit by 35 degrees.
- What Are Atiras, Atens, Apollos and Amors? NASA Near Earth Object Program FAQ. Posted on neo.jpl.nasa.gov, accessed March 1, 2014.
- 3. As a matter of definition, the L4 point leads Jupiter by 60 degrees and the L5 point trails Jupiter by 60 degrees. The three remaining Lagrangian points L1, L2, and L3, are unstable equilibrium points, and are therefore not expected to contain asteroids on any permanent basis.
- 4. Those Trojan asteroids in the L4 group are named after Greek participants in the Trojan War, whereas those in the L5 group are named after those on the side of Troy. There are only two exceptions; Patroclus and Hektor are in the "wrong" camp because they were named before the convention was adopted.
- List Of Jupiter Trojans. The International Astronomical Union Minor Planet Center. Posted on minorplanetcenter. net, accessed January 27, 2014.
- Solar wind is a stream of charged particles (mostly protons and electrons) that have been released from upper atmosphere of the sun.
- Halley's Comet is a notable exception. It is a short-period comet with a period of 76 years, yet it has a retrograde orbit.
- Comets are named after the person or persons who discovered them. Comet Hale-Bopp is named after Alan Hale and Thomas Bopp.
- 9. To rescue the notion of billions of years from this evidence to the contrary, secular astronomers have proposed an *Oort cloud*, a hypothetical, enormous, spherical cloud of cometsize icy masses. These icy objects supposedly orbit far beyond Neptune and are occasionally dislodged from the Oort cloud and thrown into the inner solar system, thereby becoming a new long-period comet. The Oort cloud is therefore supposed to resupply long-period comets as the old ones evaporate, all over billions of years. Likewise, the *Kuiper Belt* is supposed to contain trillions of progenitor comets just beyond Neptune that resupply the solar system with short-period comets. However, neither the Oort cloud nor a genuine Kuiper Belt with trillions of comet-size mass have been observed.
- 10. Chiron's orbit is elliptical and briefly brings this little world closer to the sun than Saturn, and then farther from the sun than Uranus. Chiron spends most of its time in between the orbits of Saturn and Uranus.
- 11. The term centaur refers to a creature from Greek mythology that is half human, half horse. Likewise, solar system centaurs seem to be a hybrid between asteroids and comets.
- 12. To be precise, the *average* distance of a centaur from the sun must be greater than that of Jupiter and less than that of Neptune. Most centaurs cross the orbit of one or more of the outer planets.

Dr. Lisle is Director of Research at the Institute for Creation Research and received his Ph.D. in astrophysics from the University of Colorado.



Ancient Whale Graveyard Points to **Genesis Flood**

CK TO GENESIS

BA

ccording to a recent evolutionary article, anywhere from 6.5 to 9 million years ago a catastrophic event occurred in what is now the Atacama region of Chile.1 Four distinct layers of fossil marine mammals were unearthed on the edge of one of the driest deserts on the planet, leading evolutionists to exclaim, "There has never been a find of this size or this diversity anywhere in the world."2 Indeed, at least 40 baleen (water-filtering) whales-species including minke, fin, and the modern blue whales-were found, as well as seals, dolphins, and sharks.

The Proceedings of the Royal Society B study on this amazing discovery begins with a paean to evolutionism, claiming that marine mammals "evolved from trophic obscurity."1 In other words, land mammals-doing just fine where they were-decided to venture back into water, where they made incredible physiological and anatomical adjustments to their new aquatic life. One secular paleontologist asserts that although hard to imagine, this transition did in fact happen:

Looking at the great blue whale, 30 m [~100 feet] long, or a fast-swimming dolphin, it is hard to imagine how they evolved from terrestrial mammal ancestors, and yet that is what happened.³

With no compelling fossil evidence for these remarkable alterations, we begin our commentary on this Chilean discovery by recognizing that the creatures are 100 percent modern whales, seals, dolphins, and sharks. The fossils are "remarkably complete,



having being subjected to very little scavenging at death" despite having "a few nicks," possibly made by crabs, according to a BBC article.4

What phenomenon would bury an unbelievably dense accumulation of complete and articulated whales, belly up, along a line parallel to the coast? What could have done this to such capable swimmers? Secular scientists suggested four separate mass strandings, but a better explanation might involve successive, inescapably strong tsunamis or currents.

While the evidence clearly suggests some kind of flood of catastrophic proportions, the study's explanation veers to an altogether bizarre conclusion: The creatures all died due to a supposed algal bloom and were then washed ashore by storm waves. Although proffered as a very plausible explanation, the evidence for such mass poisoning is tenuous at best. For instance, area sediments were free of algal cell fragments, and why would an algal bloom suddenly kill all these various species? There were small spheres in the sediments the correct size to be dinoflagellate (marine algae) cysts, but were they of the deadly type? Scientists simply do not know. Regardless, secular explanations must avoid the obvious in this case and create other explanations unfettered from cataclysmic (biblical) explanations.

Evolutionary geologists state these four layers, or horizons, of the fossil vertebrates span some 16,000 years. But in virtually every circumstance time is actually the enemy of evolution. The supposed age of the deposit is 3.5 million years, meaning these deposits formed during one half of one percent of that time. Are we expected to believe that things were placid and calm for the rest (99.5 percent) of the time as measured in millions of years? No other storm surges or killer tides interrupted the peaceful and tranquil uniformitarian time? If these layers really did span 16,000 years then there should be dozens of other similar graveyards.

Creation scientists have a more credible explanation not based on ethereal millions of years or cryptic poisonous algal blooms. Masses of well-preserved fossils of various modern types-their bodies remarkably unscavenged and whole-indicate an enormous widespread catastrophic process, considerably more than a mere storm surge.

References

- Pyenson, N. et al. 2014. Repeated mass strandings of Mio-cene marine mammals from Atacama Region of Chile point to sudden death at sea. *Proceedings of the Royal Society B.* 281 (1970) (1781): 20133316.
- Halliday, J. Whale graveyard shows mass stranding of spe-cies millions of years ago. *The Guardian*. Posted February 26, 2014, accessed March 2, 2014.
- Dependence of the second second
- whale graveyard explained. BBC News. Posted on bbb.com February 25, 2014, accessed March 2, 2014.

Mr. Sherwin is Research Associate, Senior Lecturer, and Science Writer at the Institute for Creation Research.



From the Sea to the Land

JOHN D. MORRIS, PH.D

he Back to Genesis section of *Acts & Facts* received its name years ago to reflect ICR's thinking about origins research and how we approach scientific data. As Biblebelieving Christians, we have a firm conviction that Scripture is true and accurate on all subjects that it addresses. Our faith in Scripture is not a blind faith but a reasonable faith that has been studied, tested, and reinforced time and again. Scripture doesn't always provide all the details about a given subject, but it does give us "the big picture"—the worldview within which we frame our understanding and studies. Facts by themselves do not speak clearly but must be interpreted within a presupposition set—a worldview.

The biblical worldview handles the data better than any other worldview, especially as they relate to unobserved origins questions. Just as Genesis teaches, we believe that all things were created in a perfect, "very good" state (Genesis 1:31), that mankind and all his dominion suffers under the Curse due to Adam's sin (Genesis 3:11-19), and that all things were altered by the great Flood of Noah's day. No datum observed today could have escaped any of these great, worldwide events. Thus we must always go "back to Genesis" to get to our focal point—our starting point. When we do, we have a chance to properly interpret the data. Starting with the wrong presupposition virtually guarantees a wrong interpretation.

Let me give a simple example. Scientists often refer to evolution to trace how land animals evolved from some sea creature. Supposedly, fish evolved legs from fins and lungs from gills, and then they crawled onto the land. Was it a lobe-finned fish like coelacanth or *Tiktaalik*? Did a lack of food drive the transition, or was it a periodic drought? Was a mega-mutation involved or a series of tiny point mutations? Did the change occur slowly or rapidly? There is so much evolutionists don't and can't know. The answer lies in the creation account of Genesis 1. In clear language we read that on Day Five of the creation week God created animal life to live in the sea. The ocean was literally "teeming" with life. Today, we observe life of all types crowding every spoonful of seawater. Scripture could not be more correct. The vertebrate fish are numerous and diverse, but they are all recognizably fish, and all utilize gills for breathing.

According to evolution, fish descendants, beginning with the amphibians, were and are air-breathing land creatures. While all vertebrates share some features, the proposed transitional forms between them are systematically missing in the fossil record and in living creatures today. All proposed candidates fail to exhibit the proper features. None have part-way lungs or half-legs. In short, no "fishibians" have been found. But according to Scripture, they shouldn't be found because they simply never existed. Land creatures of all kinds were created fully formed on Day Six. No Day Five animal was altered to live on land, and the fossil record reflects this. Land animals were created without ancestor relationships. No hint of deep time or evolutionary change can be found in Genesis.

It should be no surprise that the evidence fits this biblical record. Just as Genesis relates, all basic life forms were created *ex nihilo* and fully functional. Our scientific studies confirm the truth of Genesis. On the authority of God's Word, we can be certain that creation was accomplished without millions of years of trial-and-error evolution. We have every reason for confidence in His infallible record to

us. It is the basis for not only our scientific studies but our certain hope for the future.

Going "back to Genesis" for all understanding makes sense. ●





SPREAD THE WORD

You can be a part of the ICR message by sharing biblical truth with your friends and neighbors, whether it be online, in print, or in conversation. You can impact your world with the tools ICR offers you, from "liking" us on Facebook to giving your pastor the resources to preach with authority. You can make a difference.

















18

Contending for the Faith and the Genesis Mandate

elievers are commanded to share the gospel, but they sometimes face political obstacles when they try to "earnestly contend for the faith."¹

For example, in the early 1800s missionary William Carey, the Father of Modern Missions, began evangelizing India's prodigious population. But despite heroic efforts, his work was frustrated by colonial politics. British colonial policy forbade introducing any activity that disturbed local customs, and his translating of the

Holy Bible into Hindi was already aggravating some indigenous customs. Carey's Great Commission work was being derailed in the name of social stability.

OLOGETICS

One local Hindu convention was the horrid practice of burning widows alive—after they had been drugged and immobilized—on their husbands' funeral pyres. This widow-killing (*sati*) was an unquenchable grief to William Carey and his friends, as was his frustration year after year at failing to effectively evangelize Hindu Indians.

The dreadful widow-burning custom was essentially a culturally imposed violation of the Genesis mandate. God's command in Genesis 9:1-7 to Noah and his family after they left the Ark was a new mandate to populate the earth and to treat innocent "Expect great things from God, attempt great things for God." - William Carey

human life as sacred. Not only was killing the widows clearly murder (or at least a form of assisted suicide), it also prevented those same widows from remarrying and obeying the post-Flood command to "be fruitful and multiply."

Carey needed a political breakthrough, and it occurred through the hand of a government official—a Danish colonial governor named Ole Bie.

Danish civil-rights activist, Colonel Ole Bie, was an active coalition partner of England's William Carey (and a few others), in the successful lobbying of India's traditional (and colonial) laws, to prohibit the widow-burning practice of *seti* [also spelled *suttee* or *sati*], a political blessing to countless women of India, not to mention all descendants of their children born after they (as surviving widows) remarried.²

Colonial Bie was a compassionate Lutheran Christian who val-

ued the groundbreaking evangelical work that Carey and his American Baptist allies strove to accomplish in India. How did Bie "defend the faith" and further the Great Commission?

Colonel Bie gave Carey political asylum in the Danish trade colony of Serampore. Bie even provided financial support to Carey from his governmental resources by employing him as the Danish governor's gardener, which also gave Carey diplomat-like passport privileges. Carey's Danish employee status protected him from British

> government persecutions—and this enabled Carey to complete his pioneering Bible translations, to teach native children Christianity, and even to establish Serampore College in 1818.

> Finally, after many years of tireless political lobbying by Carey, Bie, and others, the British government banned the widow-burning custom of *sati*—a huge blessing to India's posterity, especially for all descendants of the surviving widows who remarried!²

> Is Ole Bie famous as a "big" player in world politics, as a public servant in India? No. But like Nehemiah, Colonel Bie performed an important work by defending the faith thoughtfully and persistently. Surely the archives of eternity will prove that the cause-and-effect chain of

dominoes set in motion by Colonel Bie's activism in the little Danish colony of Serampore greatly advanced both the Genesis mandate and the Great Commission.

Sometimes those who "earnestly contend for the faith" need some political help. William Carey's and Ole Bie's work provide a perfect example of contending earnestly for the faith while promoting Genesis mandate values. ●

References

- Compare Matthew 28:18-20 with Jude 1:3. Consistent with Genesis 9:1-7 and Psalm 102:18, the faith can be defended by those who also defend innocent humans and their posterity.
- Johnson, J. J. S. January 2006. Dominoes of Destiny: Danish Historical Impacts and Precedents. *Baltic Heritage Review*, 9. The British colonial government finally decreed the practice of *sati* (widow-burning) illegal in 1829.

This article is adapted from a lesson in the online Associate of Christian Education program of ICR's School of Biblical Apologetics (SOBA).

Dr. Johnson is Associate Professor of Apologetics and Chief Academic Officer at the Institute for Creation Research.



Creation Conversion: The Turning Point

ast month we ran our first Creation Conversion article, in which ICR zoologist Frank Sherwin described his shift from adhering to a billions-of-years evolutionary model to believing in biblical creation, which holds that the universe is only thousands of years old. A scientist with a similar experience, nuclear physicist Dr. Vernon Cupps, came to ICR from Fermilab, America's particle physics laboratory.¹ He describes his creation conversion as follows:

I came to believe in a young-earth view of creation when I took the time to investigate the actual scriptural, observational, and experimental evidences for both the young- and old-earth hypotheses. A young-earth view of creation is first of all, and most importantly, what is clearly taught by a straightforward reading of Scripture. Dr. Steven W. Boyd presented a particularly persuasive argument for this interpretation of Scripture in Radioisotopes and the Age of the Earth.² When one considers that the most reasonable explanation for the fossils in various rock strata is a sudden catastrophic burial-[along with] the absence of transitional [fossil] forms in the rock strata, the presence of collagen in dinosaur bones supposedly hundreds of millions of years old, and the presence of measurable 14C in that collagenit becomes very difficult to hold an old-earth view. The preponderance of observational and experimental data seem to support the concept of a young earth.

It was a great relief to erase the tension which had always existed between what I clearly understood from the Bible and





what I was hearing on the university campuses. Sometimes you hear ideas and thoughts from other people which you know are wrong but you don't know exactly why. So I began investigating the so-called evidence pointing to long Earth ages and evolution *ex nihilo* [a universe existing without God] which were

being so strongly advocated by the secular world. To my horror I discovered that the basic assumption which upheld all of modern science was "naturalism," i.e., there is no need for God because everything can be explained by natural causes. In essence the secular world had equated science with epistemology.³ My search ultimately led me to conclude that the biblical ac-

"My search ultimately led me to conclude that the biblical account was absolutely accurate and that God did not expect me to believe in something that was counter to the rational evidence all around me."

count was absolutely accurate and that God did not expect me to believe in something that was counter to the rational evidence all around me.

In 2 Timothy 2:15, the Scriptures state, "Be diligent to present yourself approved to God, a worker who does not need to be ashamed, rightly dividing the word of truth." I would encourage every believer, and indeed everyone, to investigate thoroughly the facts about creation because what you believe about creation is intimately tied to what you believe about God and His glorious gospel. ●

References

 Fermi National Accelerator Laboratory is in Batavia, Illinois. Its vision is to inspire the world and enable its scientists to solve the mysteries of matter, energy, space, and time for the benefit of all. Scientists at Fermilab carry out research in high-energy physics to answer these questions:

- What is the universe made of? How does it work? Where did it come from?Boyd, S. W. 2005. Statistical Determination of Genre
 - Boyd, S. W. 2005. Statistical Determination of Genre in Biblical Hebrew: Evidence for an Historical Reading of Genesis 1:1–2:3. In *Radioisotopes and the Age of the Earth: Results of a Young-Earth Creationist Research Initiative*. El Cajon, CA: Institute for Creation Research and Chino Valley, AZ: Creation Research Society.
 - Epistemology is the study or theory of the nature and grounds of knowledge, especially with reference to its limits and validity.
 Bealm (10) Borneyre 1:10, 20.
 - 4. Psalm 19; Romans 1:19-20.

Dr. Cupps earned his Ph.D. in nuclear physics at Indiana University-Bloomington is Research Associate at ICR.

"When one considers that the most reasonable explanation for the fossils in various rock strata is a sudden catastrophic burial—along with the absence of transitional fossil forms in the rock strata, the presence of collagen in dinosaur bones supposedly hundreds of millions of years old, and the presence of measurable ¹⁴C in that collagen—it becomes very difficult to hold an old-earth view." — Dr. Vernon Cupps



BRIAN THOMAS, M.S.

EATION Q&A

Dating a tree sounds simple—just count the number of rings from the trunk's outer edge

to its center and you discover the number of years the tree was alive. Secular researchers have determined that a few rare trees have more rings than the number of years since Noah's Flood. Debater Bill Nye recently used these tree studies to challenge the biblical timeline.¹ Do they really disprove the Genesis chronology? Let's do our homework and look at secularists' technical reports about tree rings.

One states that "in a tree with no missing or false rings, a simple ring count can establish the date of a particular ring in a particular sample, provided the date of the outer ring is known."² Thus, trees might skip a ring or grow extra "false rings" in a given year. How can a researcher determine which rings truly represent whole years?

Researchers often crossdate trees to build a better chronology or history. "Crossdating, the matching of patterns of ring variation among trees, is the one immutable principle of tree-ring science. Any analysis that does not employ rigorous, replicable crossdating is not dendrochronological [tree-ring dating] in nature: counting rings does not afford the comparative validation necessary to produce absolutely dated ring sequences."³ Thus, one cannot build reliable chronologies simply from counting tree rings.

But even crossdating does not always work. For example, "unfortunately, the lowelevation Huon pine[s] do not crossdate well and the ring-width chronologies that have been developed show a complex but weak temperature signal."² In other words, forest scientists sometimes have difficulty figuring out which ring features correspond to which temperature range or calendar year. And some tree rings are quite faint: "The ring that marked the change could not be dated directly in each core because some rings, especially those near the outer part of the trunk, are indistinct."⁴

Indistinct or missing rings pose two problems, and extra rings present a third. "Sometimes more than one growth ring is produced in the same year."5 And ring growth appears to be inconsistent: "Sometimes tropical trees that show cambial increment [woody growth] during each month of the year produce multiple growth rings, emphasizing the uneven utilization of carbohydrates."6 But are growth rings consistently annual in temperate climates? "In some temperate trees that at times produce multiple rings, growth can occur in two or three periods, separated by brief intervals of dormancy. Dormancy of this type is classified as temporary, as it lasts a few days or a few weeks."7 In other words, a tree can form a countable ring in a matter of weeks!

What causes a new ring? Winter conditions can, but so can droughts. "In study of high resolution wood property variation in *Picea abies*, an increase in wood density occurred (creating a false ring) in association with increased drought stress.⁷⁸ That was in Tasmania. But it was also found in Norway, where "wood density responded strongly to drought events, and a dry period in June 1996 induced false-ring formation."⁹

Instead of calling it a "false ring," maybe they should have called it a "false year." Understanding that climate and other changes cause trees to produce more rings than the number of years they've been growing reconciles tree rings with biblical history. And given the wild climate swings since the Ice Age, there is every reason to expect extra rings in trees that began growing soon after the Flood.

References

- Thomas, B. Nye vs. Ham Debate: No True Scotsman. Creation Science Update. Posted on icr.org February 7, 2014.
- Drew, D. M. et al. 2013. Wood properties in a long-lived conifer reveal strong climate signals where ring-width series do not. *Tree Physiology*. 33 (1): 37-47.
 Taylor, R. E. and M. J. Aitken, eds. 1997. *Chronometric Dat*-
- Taylor, R. E. and M. J. Aitken, eds. 1997. Chronometric Dating in Archaeology. New York: Plenum Press, 34.
- Sigafoos, R. S. 1964. Botanical Evidence of Floods and Flood-Plain Deposition. United States Geological Survey Professional Paper 485-A. Washington: US Government Printing Office, A20.
- Kramer, P. J. and T. T. Kozlowski. 1979. *Physiology of Woody Plants*. New York: Academic Press, 91.
 Ibid. 384.
- Fritts, H. C. 1976. Tree Rings and Climate. New York: Academic Press, 195.
- Drew, D. M. et al. 2009. High resolution temporal variation in wood properties in irrigated and non-irrigated *Eucalyp*tus globulus. Annals of Forest Science. 66 (4): 406.
- Bouriaud, O. et al. 2005. Intra-annual variations in climate influence growth and wood density of Norway spruce. *Tree Physiology*. 25 (6): 651-660.

Mr. Thomas is Science Writer at the Institute for Creation Research.

HONORABLE SUBSTANCE

HENRY M. MORRIS IV

uring my college days, case studies were often used to teach practical business concepts. In the moneymotivated '80s and early '90s, there was certainly no lack of cases illustrating wild successes and dramatic failures in business. We studied such success stories as the rise of Pac-Man and the video-gaming industry, Chrysler's financial turnaround under Lee Iacocca, and the meteoric growth of Microsoft after IBM adopted its rudimentary DOS program in 1981. And we examined the demise of the savings and loan industry, the factors that caused the "Black

EWARDSHIP



Monday" stock market crash in 1987, and the political-economic effects of communist policies that eventually led to the collapse of the Soviet Union.

One case study that was particularly memorable was the popular 1984 television campaign for Wendy's hamburger chain. Those of my generation will remember the three elderly ladies who were served a tiny hamburger patty on top of an enormous hamburger bun. While two of the women poke at it, exchanging bemused comments, they are interrupted by their no-nonsense companion, who, after searching in vain for customer assistance, loudly demands, "Where's the beef?" The slogan caught on, to say the least, and became an iconic cultural catch phrase questioning the real substance of any idea or product.

Matters of true value and substance are broadly covered in Scripture. In particular, the word "substance" (as rendered by the King James translators from the Hebrew הוֹן, pronounced $h\bar{o}n$) occurs 50 times throughout the Bible. With few exceptions, it specifically refers to a person's possessions, assets, and wealth. Interestingly enough, it is used most often by King Solomon-eight times in the book of Proverbs and once in his Song of Songs. Considering case studies that pertain to godly business practices, Christians will certainly find no better model to study than the extraordinary success granted by God to young Solomon at the beginning of his reign (2 Chronicles 1:11-12).

Remarkably, Solomon uses "substance" most often in a negative sense to warn of the potential loss of assets from following ways of unrighteousness. In those few passages in which he refers to a person's substance in a positive light, there is only one that contains a promise from the Lord:

Honour the LORD with thy substance, and with the firstfruits of all thine increase: So shall thy barns be filled with plenty, and thy presses shall burst out with new wine. (Proverbs 3:9-10)

All of our substance comes from the Creator God in the first place, so it is right that He should expect the best we have not the leftovers. We honor God when we give the "firstfruits"—literally, the best and choicest parts—from all our "increase." And though we should never give with the selfish intention of gaining more, no one who honors God with their substance will ever be impoverished by doing do. God will provide more than we need if we will simply trust in Him.

ICR's "substance" is found in our 44 years of uncompromising defense of biblical accuracy and authority. Through rigorous scientific research, solid educational programs, an extensive speaking ministry, and our many publications and media resources, ICR has equipped multiple generations of believers to stand for God's truth. We seek to honor the Lord in all that we do, but we need your help to continue our ministry. So please consider sharing a portion of your

substance with ICR. Together, we will honor the Lord in mighty ways. ●





22

TTERS TO THE EDITOR



Thank you so much for the March *Acts* & *Facts*. When I was a new believer many years ago, the lineage line in the New Testament was one of the first things I saw to make me know the age of the earth was not as old as I was led to believe. Thank you for all you do. -EG.

I appreciated your [Dr. Henry M. Morris III's] recent article "How Old Is Our Planet?" Many Christians are skeptical about the power of God's voice and have incorporated theistic evolution into their theology to explain Genesis chapter one. We know God didn't need billions of years to create



the cosmos and man. He is our all-powerful God! Perhaps in one of your future articles you could expand on the nine "God saids" in Genesis one. That would be of great help to me as I attempt to help others who struggle with the time factor.

-M.R.



My family and I just watched Dr. [Jason] Lisle's most recent DVD: *The Secret Code of Creation*. Fantastic! In fact, we have every Dr. Lisle DVD offered, and we love them all. Just wanted to say thank you and keep up the excellent work. Eagerly awaiting the next DVD!

-D.F.

Thank you [Dr. Henry M. Morris] so much for this correct application of the Blessed Hope ["Asleep in Jesus," *Days of Praise*, March 7, 2014]. Many people only apply it to those who were alive at Christ's coming and do not realize that when one expands it to include those who have died in Christ it actually is a much



broader blessing. I thank the Lord so much for your devotionals, as well as those of the rest of your family; they are always a real blessing and shepherd, leading me in my morning prayers!



Thank you [Dr. Henry M. Morris III] for the copy of [*Your Origins Matter*] that you sent. I appreciate it! I have been a believer and follower of Jesus for over 30 years, struggling hard to know Him, to listen to His voice, and to obey Him. So I am not new to this journey. Your book, however, is special. It is very succinct, it is very readable, it felt like someone

sharing from beside the fireplace! When I finished it last night, there were tears in my eyes. It wasn't an intellectual treatise, although obviously there had been much research involved in the writing. It was just simple and to the point. But you covered so many of the questions that I think most of us have, not just about the origin of the universe itself but about our own place in it. I think you showed us who we really are. When we study our Earth and our origins from an atheistic or anti-theistic worldview, it changes so much. No longer are we looking at how we matter to God and to one another. But when we acknowledge that God indeed created all, then we belong. We are His kids!

— J.P.

Just a quick note to let you know that your materials are being used. The church I am now attending has open

arms to your point of view concerning creation and especially Genesis 1:1 to 2:3. One article from *Creation Science Update* is provided to the congregation weekly, and every two weeks one of the *That's a Fact* videos is played during the service. Thank you for all you are doing, God bless all involved.

-K.L.

Thank you for what you do to build the Kingdom. I first used *Acts & Facts* when my children were young. It was so helpful in strengthening their faith. Now I am privileged to teach Genesis 1–12 to middle-school students from our local public school in a released-time program. Over 250 kids attend these Bible classes two–three times a week. Your resources are invaluable to me.

— С.В.

Have a comment? Email us at editor@icr.org or write to: Editor, P. O. Box 59029, Dallas, Texas 75229 Note: Unfortunately, ICR is not able to respond to all correspondence.

-M.P.

More Homeschool Resources



Guide to Creation Basics BGTCB – Hardcover \$14.99 (reg. \$16.99)

Guide to Animals Frank Sherwin BGTA – Hardcover \$14.99 (reg. \$16.99)



Creation Basics & Beyond

An In-Depth Look at Science, Origins, and Evolution BCBAB \$7.99 (reg. \$9.99) (Or \$19.99 for both this and Guide to Creation Basics – SCBB)



Exploring the Evidence for Creation: Reasons to Believe the **Biblical Account** Dr. Henry M. Morris III BETEFC1 \$11.99 (reg. \$13.99)

The Design and

Dr. Jeffrey Tomkins

BDCC1 - Hardcover

\$16.99 (reg. \$19.99)

Complexity of the Cell





Made in His Image *Examining the* complexities of the human body Dr. Randy J. Guliuzza BMIHI1 \$7.99 (reg. \$9.99)

CLEARLY SEEN



Clearly Seen Constructing Solid Arguments for Design Dr. Randy J. Guliuzza BCS1 \$7.99 (reg. \$9.99)

INSTITUTE FOR

CREATION RESEARCH

P. O. Box 59029, Dallas, TX 75229

www.icr.org

Hitler and the Nazi Darwinian Worldview Dr. Jerry Bergman BHATNDW \$15.99 (reg. \$17.99)





DINOSAURS



Your Origins Matter -Set 1 (DVD) SYOM-01 This set of three DVDs includes:

- Human Design: The Making of a Baby Dr. Randy J. Guliuzza Astronomy Reveals
- Creation Dr. Jason Lisle • What You Haven't
- Been Told About Dinosaurs Brian Thomas \$19.99 (reg. \$29.97)

Save \$9.98 when you buy all three together.

CREATION



The Secret Code of Creation (DVD) Dr. Jason Lisle DTSCOC \$7.99 (reg. \$9.99)

What You Aren't Being **Told About Astronomy** - Vol. 1 (DVD) Spike Psarris DWYABTAA1 \$12.99 (reg. \$15.00)

What You Aren't Being **Told About Astronomy** - Vol. 2 (DVD) Spike Psarris DWYABTAA2 \$12.99 (reg. \$15.00)

Many titles also available for Kindle, NOOK, and through the iBookstore.



While supplies last. Please add shipping & handling to all orders.

Visit the ICR store today at www.icr.org/store or call 800.628.7640.

Prices good through May 31, 2014.



