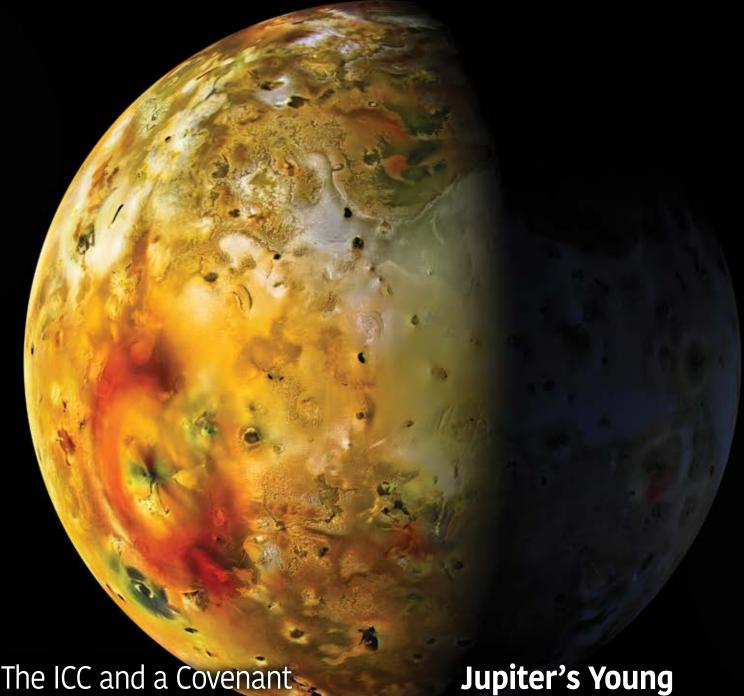
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MAY | JUNE



Dinosaur Valley State Park: Stepping into the Flooded Past page 10

for Civility and Respect

page 4

Jupiter's Young Moons

page 14

Remembering Dr. John Morris page 18



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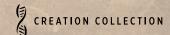




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Dr. Brian Thomas

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Dennis Davidson

[Jesus Christ] is the image of the invisible God, the firstborn over all creation. For by Him all things were created that are in heaven and that are on earth, visible and invisible, whether thrones or dominions or principalities or powers. All things were created through Him and for Him. And He is before all things, and in Him all things consist. And He is the head of the body, the church, who is the beginning, the firstborn from the dead, that in all things He may have the preeminence. For it pleased the Father that in Him all the fullness should dwell, and by Him to reconcile all things to Himself, by Him, whether things on earth or things in heaven, having made peace through the blood of His cross.

(Colossians 1:15-20)

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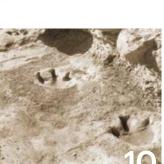
Front cover: Jupiter's moon lo Image credit: Shutterstock | joshimerbin











feature

The ICC and a Covenant for Civility and Respect

RANDY J. GULIUZZA, P.E., M.D.

apologetics

The Alarming Truth About **Headbanging Termites**

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

park series

10 Dinosaur Valley State Park: Stepping into the Flooded Past

BRIAN THOMAS, PH.D., AND TIM CLAREY, PH.D.

impact

14 Jupiter's Young Moons

JAKE HEBERT, Ph.D.

stewardship

Supporting ICR Research

CHARLES C. (CHAS) MORSE, D.MIN.

Remembering Dr. John Morris

research

21 Siccar Point, the Shrine of Deep Time

TIM CLAREY, Ph.D.

creation kids

23 Saguaros and Gila Woodpeckers

BETHANY TRIMBLE AND SUSAN WINDSOR

The ICC and a Covenant for Civility and Respect

RANDY J. GULIUZZA, P.E., M.D.



'm delighted to tell you about a very important upcoming creation conference—and it isn't being hosted by ICR. As you make summer plans, the 9th International Conference on Creationism (ICC) is worth your strong consideration. It will be hosted by Cedarville University in Cedarville, Ohio, on July 16-19.

The ICC happens every five years. That scarcity is good because it attracts top creation science researchers from around the world, although if you miss it, you'll have a long wait until the next one. If you want something different from a lecture, there are usually geological field trips associated with the conference. I believe some have been led in the past by Drs. Tim Clarey, Andrew Snelling, Steve Austin, or Marcus Ross. When the schedule is posted, you'll recognize the names of some longtime creationist researchers.¹

The ICC's size and scope have made it the foremost creation conference in the world. Its mission is to promote the development and dissemination of positive contributions to a young earth creationist model of origins, as well as to models of Earth history that recognize the reality of the global Flood described in Genesis. So, if you're interested in learning how creation-based explanations provide better answers for natural phenomena questions, or in networking with other

creationists, or even in seeking a collaborative partner to research an idea of your own, then attending the ICC will be time well spent.

ICR Research: Advancing Creation-Affirming Models

We plan to present our latest findings at the ICC. ICR's biological team has been researching cavefish pigmentation in our new laboratory. Cavefish are not only blind but are also light pink due to reduced skin pigmentation. Evolutionists claim these changes are a

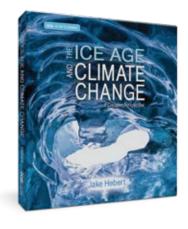


"loss of function" due to random mutations. But ICR's continuous environmental tracking model of adaptation² hypothesizes that reduced pigmentation is an innate engineered response to make the fish more suitable for life in a cave.

Our preliminary findings show that skin pigments can be purposefully modulated within these fish to fit their environment. There don't seem to be "broken" biological pathways, and we have observed no deadly struggles to survive. In fact, there've been no deaths. The paper ICR will present at the ICC not only challenges the evolutionary icon of "random mutation and natural selection" but showcases the Lord Jesus' unsurpassed engineering genius to create fish that can thrive in caves.

Researchers from Truett McConnell University, The Master's University, and I worked to craft an engineering-based model to explain *how* two independent organisms are *able* to work together. Evolutionists claim that "coevolution" explains the vast inter-cooperation observed between creatures in ecosystems. Our paper brings a fresh, rational description. We apply to biology the basic engineering principle that for two independent entities to work together, they must be connected by an interface system. Viewing creatures from an engineering perspective leads us to predict that the system the entities use to regulate exchanges will have features corresponding to the elements of a human-engineered interface.

ICR physicist Dr. Jake Hebert will describe mechanisms that enable organisms to scale proportionately up and down in size due to longevity or as they are exposed to new environments. He'll present a poster on his Ice Age research as it relates to the Milankovitch theory. ICR geneticist Dr. Jeff Tomkins and geologist Dr. Tim Clarey coauthored a paper



that discusses the correlation of the fossil record with the timing of the Flood.

Dr. Clarey will present the latest findings from his extensive research on worldwide borehole analysis. A powerful fact has emerged that some of the same rock layers are found in the same relative order on every continent. This is clear geological evidence of a worldwide flood. He can also infer the timing of Flood events and volumes of deposited sediments.

Civility and Love Amid Diverse Views

ICR's science staff vigorously advocates for positions that we



deem are strongly supported by research *and* by giving the Bible's words their normal contextual meaning. In addition, we believe that humility and love were key factors that powered the growth of the creation science movement.³ We try to emulate ICR's early leaders such as Drs. Henry Morris, Duane Gish, and Gary Parker, who passionately supported their positions and yet fairly evaluated contrary views. Though ICR's pioneers were often right, that fact never went to their heads. In this, they honored the Lord Jesus. Like them, we want to always let a gracious spirit be our most distinguishing characteristic.

The ICC can pose a challenge to creationists in *how* we respond when we hear others present ideas that are different—and sometimes radically divergent—from our own positions. At the ICC, the information and opinions span a wide range. Some content is so plainly consistent or inconsistent with biblical truth that it reinforces established positions. Other information is clearly on to something new that creationists might have missed for years. These are good things. When reacting to information that's new or that we disagree with, we must humbly remember that we "see through a glass darkly" in many areas (1 Corinthians 13:12, KJV), but we are still creationists and, foremost, Christians.

A few fundamental and distinctive beliefs unite creation sci-

entists. We believe that the Bible is the Word of God. It is inerrant; able to be reliably translated; clearly understandable to humanity; the highest authority; and the avenue to know Christ and His truth. Genesis is real history. We don't believe that nature is the 67th book of the Bible—even though invisible things of Christ are clearly seen (understood intuitively and through the scientific method) from His workmanship in nature (Romans 1:20).

As such, the Bible provides the definitive framework guiding our scientific studies. We know that the Lord Jesus created the universe in six literal 24-hour days, distinct kinds of biological entities, and humans in God's image only about 6,000 to 7,000 years ago. The whole world was inundated in a flood. The biblical framework from which creation scientists view natural history is radically different from the secular interpretive frameworks that espouse an ancient universe.

A Creationist Covenant

Humility and love are virtues in short supply in the academic arena. Creation scientists should keenly recognize this deficiency and resolve to be different. In our relationships with other creationists, we need to submit to these biblical admonitions: "These things I command you, that you love one another" (John 15:17). "Be kindly af-

fectionate to one another with brotherly love, in honor giving preference to one another" (Romans 12:10). "Put on tender mercies, kindness, humility, meekness, longsuffering; bearing with one another, and forgiving one another" (Colossians 3:12-13).

There are also serious warnings about how Christians should *not* treat "one another," such as do not bite and devour, envy, provoke (Galatians 5:15, 26), or be puffed up with pride with one another (1 Corinthians 4:6). Thus, creationists should pledge to reject and desist from singling out fellow creationists and dispensing professional sorrow like haughty unbelieving scientists do.

We should specifically refuse to suppress opposing views with such underhanded tactics as ignoring contrary research or killing it through an abusive peer review process; ruining other scientists' credibility or assassinating their characters by humiliating them in person, blogs, or sham "peer reviewed" papers; weaponizing our literature; engaging in name calling; publicly denouncing or anathematizing them; disrespecting them at meetings; or bringing on professional exile by shunning them at conferences.

From the many illustrations in Leslie Flynn's book *Great Church Fights*, it's plain that there will always be Christians firmly convinced that engaging in shameful behavior to damage other Christians they disagree with (in this case *scientifically*) is sanctioned by the Lord Jesus to save His church from embarrassment or theological ruin.⁴ ICR's pioneers understood that *how* error is addressed is equally important to actually addressing it. I admire how these founders didn't come across in a proud, ill-tempered, or dismissive way when they identified errors in the work of other creation scientists and evolutionists.

At ICR, we want to start with a clean slate. We regret and ask forgiveness for our August 2020 issue of *Acts and Facts*, in which we were condemnatory in our criticism of several fellow creation scientists, misrepresented some of their positions, and called them some names. The author also apologized for his words in a Letters to the

Editor section of the *Creation Research Society Quarterly*. We are truly sorry for the hurt we inflicted and are grieved that others have subsequently picked up on the name calling in our article to aid in new denunciations. We will endeavor to not engage in those behaviors in the future.

Creationists are passionate people by nature. We have a zeal for biblical and scientific truth that is diametrically opposed to the world's thinking. As creationists, let's covenant together

to reject the world's methods in how we express disagreement.

This year's ICC will bring together highly talented creation scientists and laypeople with important knowledge and critical skill sets. Let's rejoice that Christ will use us to edify other Christians by providing them with answers to the challenges presented by the huge crowd of secular scientists and skeptics who menace His church today. Together, we will strengthen each other as we "contend earnestly for the faith which was once for all delivered to the saints" (Jude 1:3).

References

Creationists are passionate people by

nature. We have a zeal for biblical

and scientific truth that is diametri-

cally opposed to the world's thinking.

As creationists, let's covenant together

to reject the world's methods in how

we express disagreement.

- 9th International Conference on Creationism. Hosted by Cedarville University July 16-19, 2023.
 For more information, visit International Conference on Creationism.com.
- For more information about continuous environmental tracking, visit ICR.org/cet.
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Dr. Guliuzza is President of the Institute for Creation Research. He earned his Doctor of Medicine from the University of Minnesota, his Master of Public Health from Harvard University, and served in the U.S. Air Force as 28th Bomb Wing Flight Surgeon and Chief of Aerospace Medicine. Dr. Guliuzza is also a registered Professional Engineer and holds a B.A. in theology from Moody Bible Institute.



The Alarming Truth About Headbanging Termites

he truth about headbanging termites is both alarming and astonishing. Like other creatures of the world, big and small, headbanging termites (e.g., *Macrotermes natalensis*) are cleverly constructed to communicate important messages.^{1,2}

Who could imagine—much less purposefully invent—an underground warning communication system operated by centimeterlong sentinels who knock their noggins upon the ground repeatedly and rapidly to sound an alarm?^{2,3} Astonishingly, that auditory-vibrational alarm is relayed from termite to termite in mere seconds, like a chain of signal fires.^{2,3}

Headbanging termites do what is improbable and impossible apart from God. They repeatedly strike their heads against the ground of subterranean "galleries" (ventilated nestmound chambers and networked tunnels), making a woodpecker-like rapid-drumming series of sounds and vibrations.⁴

Fungus-growing higher termites [especially *Macrotermes natalensis*] build long subterranean galleries that lead outwards from the nest to foraging sites. When soldiers are disturbed, they tend to drum with their heads against the substrate [i.e., floor] and thereby create vibrational alarm signals.²

But why? In Africa's savannas, even termites have predators. When predatory aardvarks or pangolins (or even ants) break into termite nest-mounds to consume the inhabitants, jeopardized termites need a warning system.²

How will termites know danger has arrived and warn nestmates to flee? Termites live inside gigantic nest-mounds that tower in height compared to the body size of the mound-building termites.⁴



Termite mound in the African savanna

article highlights

- Some African termites communicate alarm signals by knocking their heads against the ground.
- Changes in air currents alert specialized sentinel termites to predator attacks, and they warn others in the nest.
- These unique abilities are engineered into these tiny creatures and showcase our Creator's handiwork.

Predatory "home invasions" often occur with rushes of air currents, so sentinel termites, who continuously track their environmental conditions, react instantly and defensively to sudden air puffs.⁵ Accordingly, termite researchers used high-speed cameras and audio-recording tech-

nology to intrusively squirt puffs of air into termite nest-mound material to trigger and measure sentinel "soldier" termite headbanging.²

Most of us don't use hightech equipment to record and analyze the high-speed headbanging of underground termites in Africa. However, we can appreciate how the Lord Jesus Christ providentially planned, programmed, and produced these diminutive detritivores (organic waste

eaters)—mostly ignored by us, yet not by Him—as those humble headbanging termites illustrate Christ's creative imagination and bioengineering.⁶

Obviously, evolutionary accidents cannot explain, much less invent, such noggin-knocking communicators' design, development, and deeds. Headbanging termites are alarming, yes, but we can admire their purposeful communications as energetic exhibits of Christ's glory as Creator.

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- 2. "The signals consist of trains of pulses with a pulse repetition rate of 10–20 Hz. The galleries have physical features that promote vibrational communication and are used as channels for long-distance communication. In M. natalensis, the signal propagation velocity is ~130 m s⁻¹ and the signals are attenuated by ~0.4 dB per centimetre distance....Workers respond by a fast retreat into the nest and soldiers are recruited to the source of vibration." From Hager, F. A. and W. H. Kirchner. 2013. Vibrational Long-Distance Communication in the Termites Macrotermes natalensis and Odontotermes sp. Journal of Experimental Biology. 216 (17): 3249–3256. Pangolins relish ants and termites. See Sherwin, F. The Pangolin: A Mammal with Lizard Scales. Creation Science Undate. Posted on ICR org November 17, 2016.
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 Transmitted signals provide coded messages intended to influence message recipients (1 Corinthians 14:8). For ages, humans have used chain-like series of relay signals to rapidly communicate danger/distress across long distances. The practice of relaying a warning by signal fires (relay beacons) is depicted in J. R. R. Tolkien's Lord of the Rings. In real-world history, Vikings used relay signal fires to communicate impending dangers.
- 4. Termite nest-mounds are admirably ventilated. See Sherwin, F. Termite Nest Architectural Design Is Clearly Seen. Creation Science Update. Posted on ICR.org April 4, 2019. Soldier termites are only ~1 centimeter long, yet their distress signals are quickly transmitted across meters of distance underground to reach other termites. Thus, a termite's relayed alarm travels a distance 300+ times its own body length. See also Johnson, J. J. S. 2019. Termite Skyscrapers Hidden in Plain View. Acts & Facts. 48 (4): 21.
- 5. "Defending an extended nest system requires a communication system to inform nestmates in remote parts of the gallery about attacks and holes in the nest wall. The use of vibrational alarm signals that can be rapidly transmitted over long distances would allow fast retreat and defence reactions and would clearly be advantageous."

fast retreat and defence reactions and would clearly be advantageous." Hager and Kirchner, Vibrational Long-Distance Communication, *Journal of Experimental Biology*.

Revelation 4:11. Even "creeping things" glorify their Creator (Psalm

Revelation 4:11. Even "creeping things" glorify their Creator (Psalm 148:7-10).

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



MAY 5-7

Harris, MN

Dale Evangelical Free Church

Uncovering the Truth About Creation Conference

(R. Guliuzza, J. Hebert, T. Clarey) Register at ICR.org/HarrisMN or 214.615.8325



MAY 20 and JUNE 17

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MAY 27 and 29

Dallas, TX ICR Discovery Center

> The Creation Experience

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MAY 31 - JUNE 11

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MAY 31 and JUNE 5

Dallas, TX
ICR Discovery Center

Engineering in Biology Series

ICRDiscoveryCenter.org/Special-Events or 214.615.8325



Dr. Stuart Burgess



Dr. Royal Truman

JUNE 7-10

Rapid City, SD

Black Hills Creation Adventures and Conference

Register at ICR.org/BlackHillsCreation or 214.615.8306



JUNE 13-16

Dallas, TX

ICR Discovery Center

Christian Educators Conference

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Landmark Events Grand Canyon Raft Adventure

(T. Clarey)

ICR.org/raftGC or 210.885.9351



AUGUST 24-26

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The Berean Call Conference

(R. Guliuzza)

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OCTOBER 12-14

Phoenix, AZ

ICR Creation Mega Conference

(R. Guliuzza, T. Clarey, B. Thomas, F. Sherwin) ICR.org/Phoenix2023 or 214.615.8306



OCTOBER 16-19

Parks Across America Tour: Grand Canyon

ICR.org/GrandCanyon2023 or 214.615.8306





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Please check ICR.org/events for the most up-to-date event information. If you have questions about a specific event, please send an email to events@icr.org or call 800.337.0375 and press 6.



A team from ICR, including Drs. Brian Thomas and Jeff Tomkins, joined the Creation Science Fellowship of New Mexico for two days on the University of New Mexico campus. They interacted with students and professors, challenging them to consider the evidence for the biblical view of human origins and the flaws in the evolutionary story.



Dinosaur Week at the ICR Discovery Center on March 14-18 featured presentations, hands-on activities, life-size fossils, and a fossil casting demonstration. Over 3,400 people came from across the United States, which set a new attendance record!



Reasons for Hope brought their DeBunked Bus to the Get Bold! Student Conference at the ICR Discovery Center in March. The colorful bus is featured in street evangelism outreaches across the U.S.



Reasons for Hope speakers Carl Kerby and Frank Figueroa joined ICR's Dr. Brian Thomas and Dave Napier for a panel discussion on evangelism at the Get Bold! Student Conference, which encouraged students to boldly share their faith.



DINOSAUR VALLEY STATE PARK

STEPPING INTO THE FLOODED PAST

BRIAN THOMAS, PH.D., AND TIM CLAREY, PH.D.

article highlights

- The limestone dinosaur tracks near Glen Rose, Texas, preserve a unique history.
- Fossil track formation needs three things: mud, animals to walk across it, and another mud layer to quickly bury and preserve the tracks before they completely erode.
- Since limestone forms in marine environments, why would large dinosaurs walk on this type of deposit?
- The biblical Flood is the best explanation for these dinosaur tracks and others around the world.

bend in the Paluxy River winds through Dinosaur Valley State Park near Glen Rose, Texas. Turtles, fishes, moss, algae, and some snakes inhabit the waters flowing over flat limestone layers that preserve dinosaur footprints. Visitors might wonder when these large reptiles tromped through the lime mud that became the Glen Rose Formation. Park signs offer answers, but they reflect evolution's willful ignorance of creation and the global Flood.¹

Two features of these dinosaur tracks show why the Flood that evolutionary thinking disallows is the key to explaining how they got there.

Roland Bird organized the excavation of theropod tracks from the Paluxy for display in New York's American Museum of Natural History. Image credit: R.T. Bird, Wann Langston collection, ca. 1940





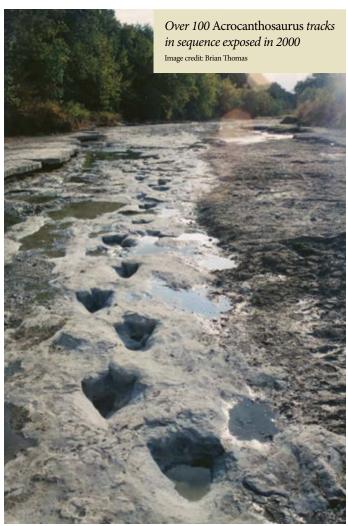
Paluxy River Tracks

I (Brian) remember in 2000 perching with my Pentax camera on a scaffold erected on the Paluxy riverbed. Dry weather had stopped the water's flow, enabling creation researchers to expose over 130 *Acrocanthosaurus* footprints normally hidden beneath watercovered mud. What a sight! Another dry spell in 2022 allowed mainstream workers

Acrocanthosaurus

to re-expose the same trackway, this time for national news. Now, even more people know about the tracks creationists have been pondering for a few decades.²

Acrocanthosaurus resembled a tyrannosaur. As one of the biggest theropods, it left big tracks. But some spots have even larger prints. Visitors can touch a track or two that the enormous Sauroposeidon left on the west bank at the main track site. With its tall shoulders and long neck, "an adult Sauroposeidon could have peered through a six-story window."



Was Sauroposeidon on Noah's Ark?

People sometimes mock the Genesis account of Noah's Ark by imagining every species of fully grown dinosaur on board and saying there wouldn't be enough room. That's easy to scoff at, but the Bible doesn't teach that scenario. Noah would likely have had younger, smaller sauropods on board. These would have taken up less space, needed less food, and had a longer life after the Flood.

Scripture says God brought to Noah two of every kind—identified by their ability to make offspring (or seed; Hebrew zera, Genesis 7:3). One kind can include many named species. Was Sauroposeidon proteles taken specifically? Not likely, but two representatives of its sauropod

kind—and we estimate about 11 of those—would

have fit fine.

Recreation of Sauroposeidon proteles

Image credit: Levi bernardo, Creative Commons Attribution-Share Alike 3.0

First Flood Feature Fit

What does it take to preserve tracks? Key conditions include a soft surface, a trackmaker, then more sediment to cover it soon after. That sediment needs to flow at just the right pace—not so slow that the fresh tracks have time to collapse or erode, and not so fast that it destroys the tracks beneath.

This leads to our first feature that fits the Flood. *Acrocantho-saurus* walked on multiple layers.⁴ Each layer spread atop the one beneath like a vast pouring of pancake batter. If these layers hap-

pened fast, then the same animals could have made these tracks, one set atop another.⁵

Most lime is a marine (ocean) deposit. Where today does marine mud blanket flat ground over and over? Nowhere. A river flood might drop sediment in a valley, but not lime mud over the whole land. So, ocean sediments flooded the continent.

Second Flood Feature Fit

For some reason, dinosaurs walked over this marine mud.



Why would dinosaurs have paced along shallow oceans? The Flood again explains this feature.

Such out-of-place behavior suggests a strange situation. Bear in mind that thousands of feet of Flood sediments lie beneath these track layers. Thus, these footprints occur near the top of the rising water phase of the Flood. These dinosaurs may have been some of the last living creatures outside Noah's Ark. "And the waters prevailed on the earth one hundred and fifty days" (Genesis 7:24).

ICR's global Flood model describes tsunami-like waves crashing across the land over and over as the floodwaters advanced. These would have made the rapidly stacked layers that we see. At some points during the Flood year, high-energy watery slurries went slack. The lower-energy waves were gentle enough to bury but not destroy fresh tracks and to leave ripple marks

The tsunamis' initial powerful waves could have washed these large dinosaurs off nearby pre-Flood wetlands and transported them alive to the Glen Rose area. Or they could have walked there during the early Flood and made tracks during lulls between each violent wave. We speculate that these dinosaurs left tracks wherever they could get their footing, desperate for rest. They could have tromped atop closely spaced layers in the same area as they walked across successive fresh marine sediments.

Did These Limestones Have Human Tracks?

In the late 1970s, ICR and other researchers scoured the Paluxy for better-quality examples of the few human-like tracks already known. The unique tracks lay next to and right inside a few theropod tracks. ICR's 1980 book *Tracking Those Incredible Dinosaurs* stated that no known creature except a human makes narrow tracks like those.⁸

However, erosion over the next few years transformed the impressions into three-toed red stains. Integrity demanded that we recall the book, which we did in 1984. Then in 2013, scientists described narrow tracks inside dinosaur tracks from Australia as impressions of soft tissue pads on dinosaur soles. Dinosaur feet and forgeries now explain most examples of what we once thought were human-like tracks.

Conclusion

If you enjoy cooling off in the clear water while visiting Dinosaur Valley State Park in the summer, then watch your step on the slick algae bottom. Imagine the size of the animals that made these tracks. Then remember two features that point to Noah's Flood. First, the Flood's uniqueness helps explain stacks of tracks that do not form today. Second, lime muds are marine deposits, and dinosaurs didn't belong in the seas.

Those waters must have overtopped the land, giving hardy dinosaurs wet places to walk before they finally perished in the Flood, just like the Bible says.



Dr. Don Patton and David Bassett examine over 100 Acrocanthosaurus tracks in the dry Paluxy riverbed. Ripple marks in the freshly exposed limestone show that water was flowing over the lime mud while the dinosaur walked across it.

Image credit: Brian Thomas

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- Hallett, M. and M. J. Wedel. 2016. The Sauropod Dinosaurs. Baltimore, MD: Johns Hopkins University Press. 47.
- 4. This identification is probable because of the few *Acrocanthosaurus* skeletal remains discovered nearby.5. Since each layer sharply contacts the ones above and below it, even the short time required for
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Dr. Thomas is Research Scientist and Dr. Clarey is Director of Research at the Institute for Creation Research. Dr. Thomas earned his Ph.D. in paleobiochemistry from the University of Liverpool, and Dr. Clarey earned his Ph.D. in geology from Western Michigan University.





For the serious science reader

Jupiter's Young Moons



Figure 1. The four Galilean moons of Jupiter, from left to right: Io, Europa, Ganymede, Callisto

Image credit: NASA/JPL/DLR

n 1610, Galileo Galilei aimed his telescope at Jupiter and discovered the four largest of the planet's 95 known moons. He recognized them as satellites, and they became known as the Galilean moons. In order of increasing distance from Jupiter, they are Io, Europa, Ganymede, and Callisto (Figure 1).

Four Warm Moons

Most, if not all, of the Galilean moons show evidence of interiors that are at least fairly warm. Generally, there are three ways to warm such bodies.

Leftover warmth: The moons could still be losing the energy they
had at the time they formed. For scientists who hold to evolution
and millions of years, however, this is not an option since small
bodies like Jupiter's moons should have lost this energy to space

article highlights

- Each of Jupiter's four largest moons is a distinctive world. Io is volcanic, Europa is smooth-surfaced, Ganymede has a magnetic field, and Callisto is pockmarked.
- These moons appear warmer than they should be if they are billions of years old.
- A new space probe, the Europa Clipper, is scheduled to launch in 2024 to investigate Europa and its possible internal ocean.
- All four Jupiter moons seem quite young, and we predict more youthful evidence will be found.

- eons ago. But it *is* an option for biblical creationists, as these moons could still be cooling off 6,000 years after the Lord Jesus created them.
- Heat produced by radioactive decay: Because radioactive elements are quite heavy, this is not always an option for small, low-mass moons.
- Tidal heating or flexing: Jupiter and its moons exert gravitational tugs on one another, and these tugs flex or stretch the moons' interiors, heating them.

Conventional scientists think radioactivity and tidal heating can explain the warmth of these moons, but their explanations often require special conditions that may or may not hold. Thus, the warmth of these moons is a potential problem for "deep time." But even if, for the sake of argument, one grants them these special conditions, problems still remain for the old-universe view.

lo

Io is the most volcanically active body in our solar system. The colors of its surface are due to the different temperatures of various sulfur-containing compounds. Io's volcanism is so intense that, at today's rates, it would have turned itself "inside out" more than 100 times in 4.6 billion years. Radioactivity can only make a small contribution to Io's heat output, so uniformitarian scientists attribute most of Io's present-day heat to tidal flexing.

For a long time, creationists made much of the fact that simple models of tidal flexing could only produce a small fraction of Io's observed heat output. This was an argument for youth because the only remaining option to explain Io's warmth was leftover heat from its formation, which is only possible if Io is young.¹

But these previous calculations focused mainly on gravitational tugs that Jupiter exerted on Io and the other Galilean moons. It was assumed that the tugs the moons exerted on each other were not as important. A recent paper, however, claims that this inter-moon tidal heating can be significant if the moons have subsurface liquid or magma oceans. If so, previous tidal heating estimates for these moons may need to be significantly revised.^{3,4}

So, present-day tidal flexing might be capable of explaining Io's heat output after all. This idea only works, though, if the presumed subsurface oceans have just the right thicknesses.^{3,4} Until additional data or calculations shed more light on the issue, I would caution against dogmatism on this point.

Even so, Io still presents problems for evolutionists because its erupting lavas are rich in magnesium. Geologists would say they are ultramafic. But magnesium is a heavy element, and magnesium should have settled deep into Io's interior after billions of years. In that case, lavas on Io should be depleted in magnesium, but this isn't the case.

The idea that Io's crust is ultramafic (magnesium-rich) seems inconsistent with the well-understood process of magmatic **differentiation**. Heat flow on Io is sufficiently high that Io was expected to have undergone partial melting and differentiation hundreds of times, producing a low-density crust, depleted in heavy elements like magnesium.⁵

Some scientists think a completely molten core and a crystalrich magma ocean together could explain how Io's crust could still be magnesium-rich after billions of years.⁵ But both possibilities are disputed by other uniformitarian scientists.⁶

Another option for evolutionists is to claim that Io's volcanism was much weaker in the past and only recently intensified. This would explain the presence of magnesium in Io's crust. But this would mean that we're lucky to be observing Io at such a special time in its history.

Europa

Europa has a smooth, young-looking surface. Long scratches or fractures on its surface called lineae are thought to be caused by tides in a large subsurface "shell" of liquid water, a kind of "stealth" ocean (Figure 2). In the past, conventional scientists have had trouble explaining Europa's apparent warmth,⁷ although some argue that radioactivity and tidal heating together may be a plausible explanation.

Because liquid water is necessary for life as we know it, evolutionary scientists think finding liquid water in space will make the evolutionary story seem more plausible. However, although water is

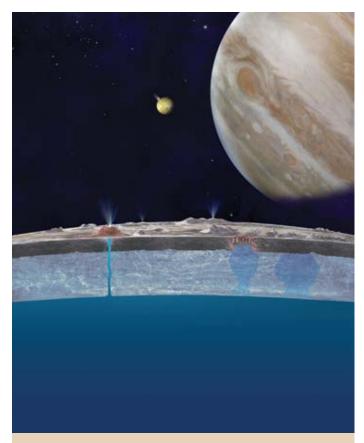


Figure 2. Many scientists think Europa has a subsurface ocean of liquid water. Jupiter and Io are in the background.

Image credit: NASA/JPL-Caltech

necessary for life to exist, it's not sufficient. Water is actually a problem for evolutionary origin-of-life scenarios since it breaks down the complex molecules that evolutionists claim formed spontaneously in chemical soups billions of years ago.⁸

Ganymede

Ganymede is the largest of the four Galilean moons and exceeds the size of the planet Mercury. Some think that it too has a subsurface ocean. Conventional scientists were surprised that Ganymede has its own magnetic field. Uniformitarian scientists invoke a dynamo theory to explain how magnetic fields of planets and moons can persist for billions of years. However, the dynamo theory has many problems. It requires the magnetic moon or planet to have a molten core, which requires a warm interior. Radioactivity and tidal heating are thought to be insufficient explanations for Ganymede's apparent warmth (but see the Io discussion above), so Ganymede was expected to be too cold for its own magnetic field. In

Some scientists have suggested that iron "snow" or the formation of iron-sulfide crystals within the core could help provide the necessary heat. But these proposals require particular concentrations of sulfur in the core that may or may not be present. ¹⁰⁻¹² The iron-sulfide mechanism could theoretically work for about

3.8 billion years, 11,12 but it requires the core to initially be about 36% sulfur by weight, which is a "very high" concentration of sulfur that could contradict cosmic evolutionary theories regarding Ganymede's origin.¹³ The "iron snow" mechanism, on the other hand, can only provide heat for at most about 800 million years. 11,12

This would mean that again we're simply lucky to be able to observe Ganymede's short-lived magnetic field at a special time in its history.

Callisto

Callisto is the most heavily cratered object known in the solar system. By uniformitarian reckoning, the large number of craters implies that the moon is very old, in contrast to the apparent youth of Europa's smooth surface. However, age estimates based on craters are very uncertain. There's some evidence that Callisto also has a subsurface liquid ocean. Conventional scientists were surprised by this, as Callisto is far enough away from Jupiter and the other Galilean moons that heat from tidal flexing was thought unimportant.

Radioactivity can provide some heat, but conventional scientists thought this heat would escape to space in a few hundred million years. For this reason, they were shocked by evidence for a subsurface ocean. "But people didn't quite believe it. How could Callisto have an ocean?" asked Jeffrey Kargel of the U.S. Geological Survey. 14 Some think sufficient amounts of an "antifreeze" such as ammonia, or perhaps certain salts, could help explain the existence of such oceans.¹⁵ But of course, we don't know how much of these quantities, if any, are actually present in these oceans, assuming they exist.

Water, Water Everywhere?

Europa has the strongest evidence for a subsurface ocean. There's also good evidence for such an ocean on Saturn's moon Enceladus. Some scientists think subsurface oceans may also exist on a dozen or so other small bodies within our solar system. Some of this could be evolutionists' wishful thinking due to their strong desire to find liquid water in space.

Even so, creationists should be excited about the possibility. Subsurface oceans of liquid water cannot exist unless these moons are relatively warm, and multiple warm small moons are much easier to explain if the solar system is young. As noted by one researcher:

Maintaining subsurface oceans against freezing over geological times requires a fine balance between internal heating and heat loss, and yet we have several pieces of evidence that Europa, Ganymede, Callisto and other moons should be ocean worlds.⁴

So, what are the odds that several (and perhaps more) small bodies in our solar system maintained such a "fine balance" for billions of years? Alternately, what are the odds that these bodies only recently became warm enough to maintain liquid oceans and that we are just in the right place at the right time to observe them?

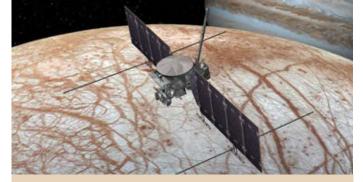


Figure 3. NASA's Europa Clipper mission is scheduled to be launched in October 2024

Image credit: NASA/JPL-Caltech

Conclusion

Uniformitarian explanations for the warmth of these moons often require special conditions in the moons' interiors that may or may not exist. They also often require us to assume that we're simply lucky to be seeing these moons at this special time in their history. This bothers evolutionary scientists because it seems that there are many such "coincidences" in our solar system.

The most active bodies out there—Jupiter's moon Io and Saturn's moons Enceladus and Titan-may be putting on limited-run shows that humans are lucky to witness. Saturn's brilliant rings, too, might have appeared relatively recently, and could grow dingy over time. Some such proposals make planetary researchers uncomfortable, because it is statistically unlikely that humans would catch any one object engaged in unusual activity—let alone several.16

Of course, all these observations are easily explained if our solar system is young. Creationists should look forward to data from the upcoming Europa Clipper and other missions to Jupiter's moons (Figure 3), as these will likely strengthen the argument that Jupiter's moons were created recently. None of this should be surprising, since according to Scripture the Lord Jesus Christ created our solar system—along with the rest of our universe—just 6,000 years ago.

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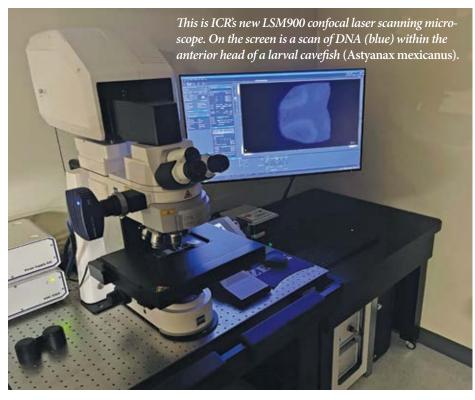
SUPPORTING ICR RESEARCH

he Institute for Creation Research views science through the lens of God's Word, communicating the many ways that scientific evidence affirms the accuracy and truth of the Bible. ICR's most recent research initiative is the development of a biological model that examines the innate abilities of living creatures in light of engineering principles.

With this new, exciting research paradigm, our staff transformed three areas on our Dallas campus into research venues—a blind cavefish laboratory, a molecular biology laboratory, and a microscopic imaging center. As more funds become available, we plan to expand our current research capabilities, including the acquisition of a combination scanning and transmission electron microscope.

Thanks to several large donations that enabled recent equipment purchases, our scientists are performing controlled experiments on one of the central icons of evolution—the blind cavefish. With no eyes and little skin pigmentation, this fish inhabits underground cave systems throughout the world. Evolutionists erroneously claim that cavefish are the "evolved" descendants of sighted surface-dwelling fish that diverged anywhere from eight million to as recently as 20,000 years ago.

Our laboratory has established reproducing populations of both surface fish and cavefish. Separate environments feature either cyclical high-intensity light to mimic sunlight or very low light combined with low pH levels that are regulated by CO₂ gas diffusion into the water. Preliminary results show that cavefish rapidly develop pigmentation when exposed to virtual sunlight and seem to be pre-adjusted to tolerate high CO₂



(low pH) water. The opposite is true as the surface fish lose pigmentation across their body when exposed to very low light combined with low pH levels.

These initial results are *not* surprising for those who realize that from the beginning of time, the Lord Jesus designed fish to be fruitful and "fill the earth" (Genesis 1:21-22). Our research is repeatable, not random, and shows that both of these control groups respond quickly, even within days. The findings contradict Darwin's theory, which uses natural selection over eons of time as a substitute for the work of our Creator.

If you are an ICR donor, please know that our Lord is working powerfully through your faithful efforts in both your prayers and giving. If you're new to ICR, please prayerfully consider coming alongside us as a co-laborer and donating to empower ICR's Christ-centered initiatives. Our goal is to always communicate the scientific evidence that affirms the clarity and truthfulness of God's written Word. Please visit **ICR.org**/

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ing options.

Dr. Morse is Director of Donor Relations at the Institute for Creation Research and earned his D.Min. from The Master's Seminary.



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June 12—Cross & Crown Church in Colorado Springs, CO

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DR. JOHN BERING

DECEMBER 7, 1946 — JANUARY 29, 2023

President Emeritus John Morris passed away on January 29, 2023, at the age of 76. He was deeply respected and dearly loved by family, friends, and colleagues. Fondly known to many as Dr. John, he demonstrated himself to be a leader with a heart for God and others.

God's Call on His Life

Born on December 7, 1946, John David Morris was the third child of Henry and Mary Louise Morris. In 1970, Dr. Henry Morris cofounded Christian Heritage College with Dr. Tim LaHaye. The college's Creation Science Research Center grew into what is now the Institute for Creation Research (ICR).

The year before, John graduated from Virginia Tech. Although he accepted Christ as his Savior at an early age, he had a period of wandering.

n t is R).

He recalled:

There were, unfortunately, several years of rebellion and rejection. I chose to blend in with the college crowd of the 1960s, and upon graduation with a B.S. in Civil Engineering...I took a job with the city of Los Angeles Public Works Department, primarily interested in worldly pleasures. Thankfully, the Lord never ceased calling me back to Himself.¹

John's attention was caught by the search for Noah's Ark. He was accepted on a 1971 expedition to Mt. Ararat, but the trip fell through. Disappointed, he joined a Holy Land tour later that year, and on this journey his life took another turn.

It was at Calvary and the Garden Tomb that I fully answered God's call, recognizing the mighty work He had accomplished there and the claim He had on my life—a life which has not been the same since.¹

In 1972, John took part in an ICR-sponsored Mt. Ararat expedition, and the following year he joined the ICR staff and Christian Heritage College as a college recruiter. He enrolled in the University of Oklahoma in 1975 and earned a masters in geological engineering in 1977, the same year he married Dalta Eads, with whom he had three children. He received his Ph.D. in 1980. After teaching at the university, he became a geology professor for ICR's graduate school in June 1984. After his father, Henry Morris, retired in 1996, Dr. John was appointed president.

Noah's Ark Explorer

John Morris is perhaps best known for his search for Noah's Ark. He led over a dozen expeditions to Mt. Ararat in eastern Turkey. His expeditions involved adventures such as being held at gunpoint, having foreign commanders take him into custody, ex-



The Morris family. Back row (L-R) John, Henry III, Kathleen, Andrew. Front row (L-R): Rebecca, Mary Louise, Henry, Mary



ploring rugged terrain in brutal conditions, confronting attack dogs, having local tribes try to stone him, and more.

Dr. John often shared the story of lying paralyzed in the snow on Mt. Ararat after being struck by lightning. He wrote about it in his final *Acts & Facts* article.

After what seemed like hours of icy immobility,...I finally realized as daylight ended that we were likely headed toward freezing to death that night. But God wasn't through with us yet. In answer to my fervent prayer, He graciously allowed us to recover and continue on up the mountain.²

He always gave God the glory for preserving his life and those of his teammates during that remarkable experience. Although he didn't find the Ark, he held out hope it might be discovered some day.

Creation Work

Dr. John published many books related to his field, including *The Young Earth*, *The Fossil Record* (co-authored with Frank Sherwin), and *The Global Flood*. He also



Dr. John with Duane Gish (center) and his father, Henry M. Morris (left)

participated in ICR research projects and frequently hosted the radio programs *Science, Scripture, & Salvation* and *Back to Genesis*. Dr. John spoke at many creation events, sharing his expertise on the evidence for creation and a young earth. He commented:

It has been my continual pleasure to study and teach the freeing news of creation, praising the Lord who has done so much for me.²

Dr. John was a contributor to ICR's magazine *Acts & Facts* for many years. He also regularly wrote devotionals for *Days of Praise*. One of his great loves was studying old Christian hymns. He based many devotionals on the rich doctrine of his favorite ones, and some were gathered into his book *How Firm a Foundation in Scripture and Song*.

culty talking, and his brother, Henry Morris III, shared that he'd say a few words and get stuck. Then he just smiled. That's Dr. John—full of joy. He treated everyone like a valued family member, encouraging and offering words of gratitude and praise easily.

John Morris was beloved by many, and ICR regularly receives letters expressing how he touched people's lives. We at ICR are deeply grieved by his passing, but we're so grateful for the life of this special man, and we know that his work will continue impacting lives far into the future.

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Portions of this article were adapted from "Dr. John Morris Is at Home with His Lord," posted on ICR.org January 29, 2023.

A Gentle Man

John Morris loved to tell folksy stories and corny jokes. When listeners saw a small mischievous grin cross his face, they knew an outrageous punchline was coming. He demonstrated a gentle and upbeat nature, even when dealing with numerous health issues. After being diagnosed with multiple sclerosis in 1975, he remained active but lost strength over time.

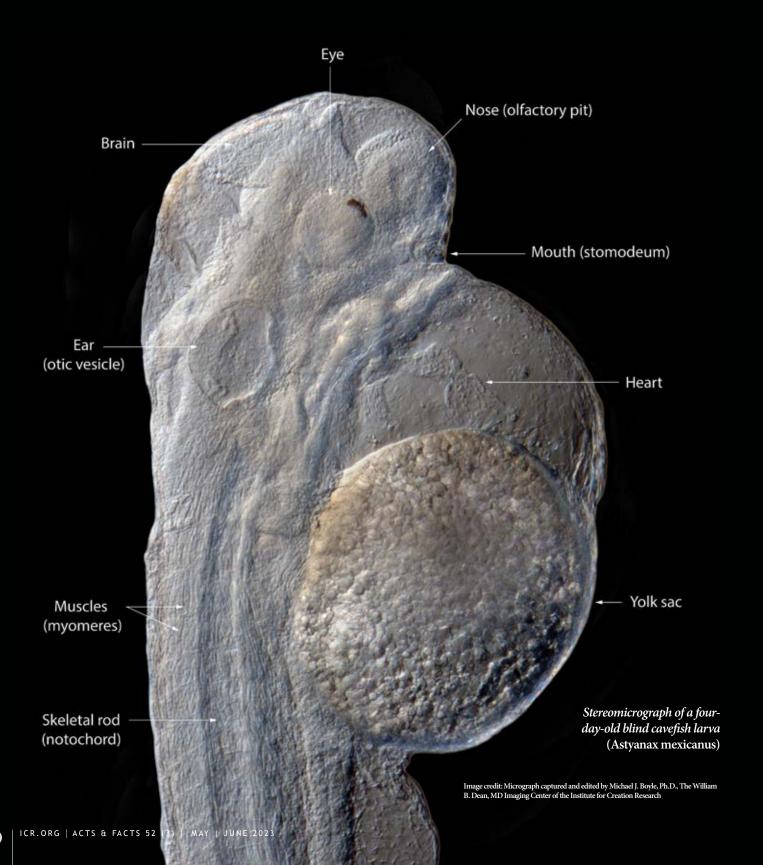
He retired from ICR in 2014 after suffering a stroke. He initially had diffi-

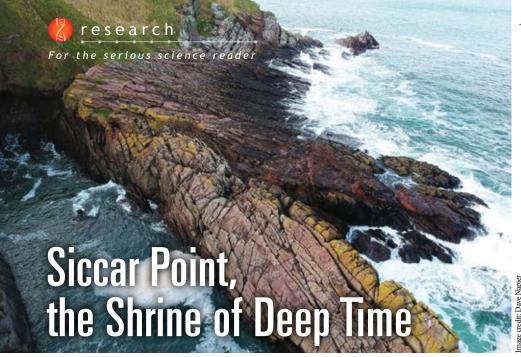


Dr. John with his wife, Dalta, in the lobby of the ICR Discovery Center in Dallas, Texas

"But now ask the beasts, and they will teach you; And the birds of the air, and they will tell you; Or speak to the earth, and it will teach you; And the fish of the sea will explain to you."

_____ Jов 12:7-8 ____





owing in a boat off the east coast of Scotland, geologist Dr. James Hutton told the boat pilot to pull ashore.1 Before his gleeful eyes was the "proof" of an old earth he was seeking. Rising from the sea at Siccar Point were two types of rocks stacked one on the other. On the bottom was a severely tilted, gray, shale-rich rock called primary micaceous schistus, now identified as Silurian greywacke (gray-wack-ee). Above were flatter red sediments known as the secondary sandstone strata, today called the Devonian Upper Old Red Sandstone.1 On that momentous day in June 1788, the three prominent Scottish academics in the boat—Hutton, geologist Sir James Hall, and geologist and mathematician John Playfair-believed they were staring into "the abyss of time."2

Prior to this moment, most learned people accepted the biblical 6,000-year-old age of the earth. But Hutton was convinced that Earth was immensely old. He didn't accept that catastrophes played a role in Earth's history, and especially denied a universal flood. Instead, he believed that new lands rose from below, driven by the heat of the earth's interior. Following uplift, erosion would slowly wear the landmass down until new forces again pushed up more land. Hutton saw this endless cycle of uplift and erosion as requiring eons of time. He argued that modern rates of erosion were too slow and necessitated vast amounts of time, much

more than the Bible's chronology allowed.

From these musings, Hutton's philosophy of uniformitarianism was born.³ He wrote at the end of the 1788 edition of his *Theory of the Earth*, "The result, therefore, of our present enquiry, is that we find no vestige of a beginning, no prospect of an end."⁴ The 1788 discovery at Siccar Point wasn't the first time Hutton suggested the earth was ancient. He had given a series of lectures in 1785 outlining his rationale for an earth age far beyond 6,000 years, but Siccar Point was the single exposure of rocks that gave plausibility to his theorized endless cycles of uplift and erosion.¹

What is seemingly so convincing about Siccar Point that old earth scientists consider it a "shrine"? Starting from the bottom, we see a sequence of rocks (the greywacke) that was deposited and then later tilted, eroded, and followed by deposition of another sequence of rocks on top (the Old Red Sandstone). But this series of events doesn't require cycles of uplift and erosion over vast amounts of time. Mount St. Helens has shown that deposition and erosion can occur rapidly and completely alter a landscape in a matter of hours or days.⁵

Hutton never witnessed such a cataclysmic event. Instead, his uniformitarian views have been entrenched in conventional scientific thought all the way to the present. Siccar Point also had a profound influence

article highlights

- Eighteenth-century geologist
 James Hutton believed slow, endless geological cycles of erosion and uplift formed the rock layers at Scotland's Siccar Point.
- Darwin meshed his ideas on evolution with Hutton's concept of deep time.
- Rocks can form and erode quite rapidly during catastrophic events like those observed during the 1980 and 1982 Mount St. Helens eruptions.
- Siccar Point isn't the deep-time proof many conventional scientists assume it is.

on geologist Charles Lyell, who visited the site in 1824.² He popularized Hutton's uniformitarianism and deep time in his 1830 book *Principles of Geology*. A young Charles Darwin read this book and readily accepted the uniformitarian paradigm. In fact, evolution couldn't have been conceived without being cloaked in the shroud of deep time.

Siccar Point remains a bastion of uniformitarianism and is still used to indoctrinate young minds in the falsehood of deep time. Ironically, the rocks themselves don't attest to formation over eons. Catastrophes like Mount St. Helens have demonstrated that similar rocks can form fast and erode quickly. Siccar Point is best explained as an example of rapid deposition and erosion during the global Flood just 4,500 years ago.⁶

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Dr. Clarey is Director of Research at the Institute for Creation Research and earned his Ph.D. in geology from Western Michigan University.







Dracorex hogwartsia Contest Winner!

In the December 2022 special Kids Edition of *Acts & Facts*, we included a contest for our young readers. We asked them to draw a picture of what they thought a living *Dracorex hogwartsia* looked like. We received many creative submissions and enjoyed looking through each one. After careful deliberation, we selected Jenson's drawing (pictured) as the winner. **Congratulations, Jenson! May God keep you passionate about creation science.**

I just wanted to say that your issue of *Acts & Facts* that was created around the Christmas season and made just for kids was fantastic!...It was very well laid out with facts and activities.

— K. A., homeschooling mom



I thought Dr. [Randy] Guliuzza's article ["Mutation-Selection: A Calamitous Creationist Concession," March/April 2023 Acts & Facts] illustrating and explaining the anti-God compromise inherent in all mutation-selection explanations was nothing short of brilliant.... The leadership of Dr. Guliuzza gives me confidence that ICR will stand for biblical truth for a long time. One can sense his pursuit of God's glory in everything he writes. Bravo!

— R. B.



Thank you for your courageous and profound concession confession.... Learning that creation is a fact makes for a robust faith and great witnessing tool to the truth of the Bible....**I'm confident now that random mutations** contribute nothing to benefit the survival and environmental adjustments of life.

— M. C.

I just finished reading your article in the *Acts & Facts* on mutation-selection. **I think it's brilliantly written and should be considered a watershed article in creation science.** It certainly opened my eyes. I plan on sending a link to it to our supporters and contacts.

— R. O.



This is in regard to the "Creation *Ex Nihilo* Through Christ Jesus" article [by Dr. Jeffrey P. Tomkins] in the January/February 2023 [*Acts & Facts*] magazine. I agree that Christians shouldn't say "out of nothing" when referring to creation; we should say something more like "out of words." **You used the perfect reference when you quoted Hebrews 11:3, "By faith we understand that the worlds were framed by the word of God, so that the things which are seen were not made of the things which are visible."** The "word of God" framed the worlds; and "things which are seen" were made of the things which are invisible.

— J. H.



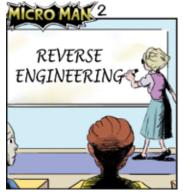
Dr. [Greg] Brewer, your article ["Building a Human Body: Jesus Christ's Amazing Engineering"] in January/February [2023] *Acts & Facts* was so eye-opening on the creation of a human body. **As I read it, I thought all this is so incredible, and a male and female would have had to "evolve" at the same time and in the same place, with the knowledge of how to unite to propagate an offspring. It is simply easier to believe the creation story than to believe in any theory of evolution.**

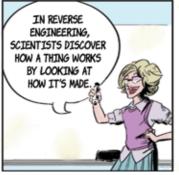


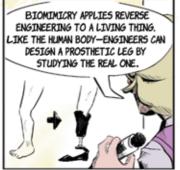
— J. D.

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Creation Kids

Saguaros and Gila Woodpeckers

Saguaros (suh-WAR-ohs) are the largest cactuses in the U.S., growing 40 to 60 feet tall and weighing over a ton. They have a symbiotic relationship with the Gila woodpecker, which nests in a hole in the cactus. When it chisels the hole, the woodpecker eats the cactus' fruit and scatters its seed. This helps other saguaros grow in the desert habitat. Did you also know...

Animals and plants have a symbiotic relationship when they rely on each other to live.

After making the hole, the Gila woodpecker waits for the inner pulp of the cactus to dry and harden. This makes the nest more solid.

You can only find saguaros in the Sonoran Desert.

Once the Gila woodpecker babies grow up, the hole becomes a nest for other birds like elf owls, kestrels, and purple martins.



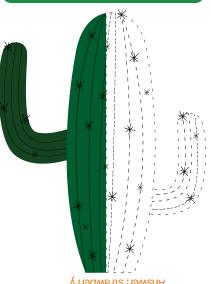
What does the fruit of the saguaro cactus taste like? Use the code above to find out.



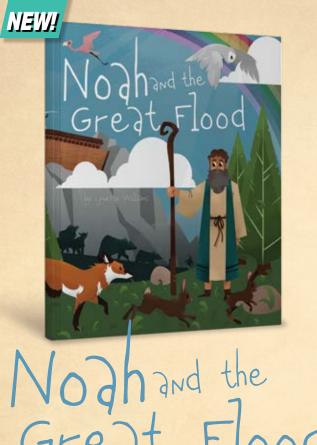
Help the Gila woodpecker find his way to the saguaro.



Color the other half of the cactus.



Answer: strawberry





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