

EVOLUTION

Crossing the Divide

Like others who have rejected creationism and embraced evolution, paleontologist Stephen Godfrey is still recovering from the traumatic journey



SOLOMONS, MARYLAND—On a clear January day, Stephen Godfrey is dressed for fossil-hunting: frayed baggy jeans, a puffy green vest, and a leather jacket that's seen better times. A paleontologist and curator at the modest Calvert Marine Museum here, Godfrey frequents the nearby Calvert Cliffs, which rise from the shoreline of Chesapeake Bay and hold everything from ancient shark teeth to dolphin skulls. "You start collecting them because, well, they're beautiful," he says of his beloved fossils.

It was the study of fossils that, 25 years ago, set Godfrey on an anguished path. Raised in a fundamentalist Christian family in Quebec, Canada, embracing a 6000-year-old Earth where Noah's flood laid down every fossil, Godfrey began probing the underpinnings of creationism in graduate school. The inconsistencies he found led step by step, over many years, to a staunch acceptance of evolution. With this shift came rejection from his religious community, estrangement from his parents, and, perhaps most difficult of all, a crisis of faith that endures.

Powerful emotions bind together young-Earth creationists, members of a movement making inroads from Kenya to Kentucky, where a \$27 million Creation Museum opened last year. Scientists and educators have responded mainly by boosting biology's place in the classroom and building rational arguments for evolution. But reason alone is rarely enough to sway believers. That's because letting go of creationism carries enormous emotional risks, including a loss of identity and community and an agonizing, if illusory,

choice: science or faith.

People like Godfrey tend not to advertise their painful transition from creationist to evolutionist, certainly not to scientific peers. When doubts about creationism begin to nag, they have no one to turn to: not Christians in their community, who espouse a literal reading of the Bible and equate rejecting creationism with rejecting God, and not scientists, who often dismiss creationists as ignorant or lunatic.

"Nothing else I have done in my life has made me such an outsider," says Brian Alters, director of McGill University's Evolution Education Research Centre in Montreal. Alters has written books on teaching evolution and testified in the 2005 Dover, Pennsylvania, trial against bringing intelligent design—a form of creationism—into the classroom. But few of his friends or his enemies know that Alters, who had a fundamentalist Christian upbringing in southern California, rejected creationism in college. More than 2 decades later, he says, "I still have childhood friends and relatives who won't speak to me."

Faithful upbringing

Religion anchored Godfrey's childhood. He was the third

of five children—"a great place to be overlooked," he jokes. Every evening after dinner, his father, a Sunday school teacher, pulled out the Bible. "We would go systematically through two readings of books," says Godfrey, and devote time to prayer. The family attended church twice on Sundays, in the morning and in the evening, and one parent or the other often dropped in on a Bible study class midweek.

From a young age, Godfrey had a keen interest in biology. He adored touring natural history museums and collected pinecones, rocks, minerals, and anything else he could find outdoors. Skeletons in particular captivated him for their visual aesthetic. During visits to his mother's family in New York state, he began gathering the skeletal remains of groundhogs and squirrels left by the side of the road, carefully wrapping them in black garbage bags for the trip home to Quebec.

His parents saw no conflict between their son's love of biology and their beliefs and encouraged his interests. "I guess they figured that the young-Earth creationist position was strong enough, was robust enough, that he would believe in young-Earth creationism and he would be a biologist, and that would



Turning point. These fossilized footprints from an early reptile sent Godfrey into a tailspin and forced a letting go of creationism.

CREDITS (TOP TO BOTTOM): J. COUZIN/SCIENCE; COURTESY OF STEPHEN GODFREY

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◀ **Digging for answers.** Paleontologist Stephen Godfrey rests his hand on shells embedded in Maryland's Calvert Cliffs, which were underwater 14 million years ago.

be fine," says Godfrey.

Now 48, Godfrey came of age after young-Earth creationism took hold in North America in the early 1960s. Its leaders argued that during the previous 150 years, Bible-believing Christians had gone too far in accommodating science in their interpretation of scripture and pushed for a literal reading of the Bible, says Ronald Numbers, a historian of science at the University of Wisconsin, Madison. Fossils, for example, are the remains of plants and animals left out of Noah's ark. The description of Adam and Eve in Genesis suggests that humans had never been subject to evolution. Using calculations drawn from genealogy, young-Earth creationists consider the planet to be 6000 to 10,000 years old. (Geologists say it is about 4.5 billion years old.)

Godfrey, who subscribed wholeheartedly to these views, vividly recalls his earliest encounter with evolution. In the first grade, when he was about 6 years old, a student teacher said that apes were the ancestors of people. "I remember having this visceral reaction ... and saying, 'No, that can't be.'" Around the dinner table that night, his family discussed the experience, concluding that the teacher must have been mistaken. "It couldn't be true because apes aren't evolving into humans today; they're apes," Godfrey remembers. And that was that.

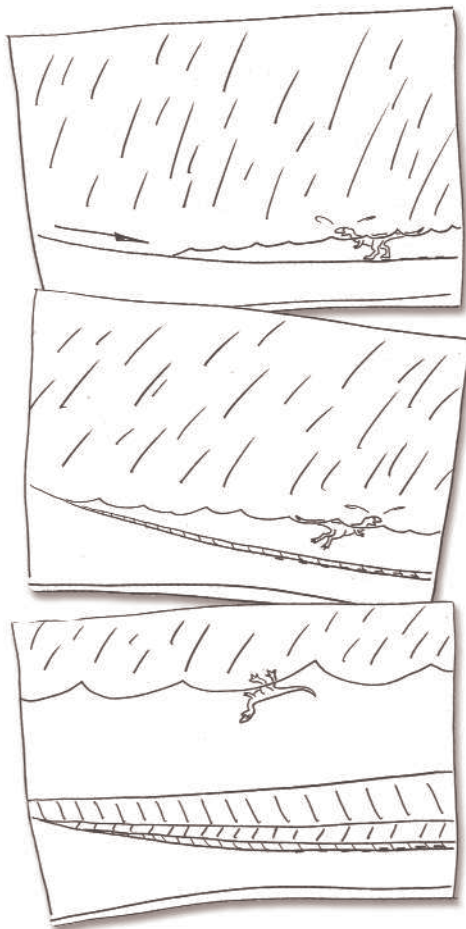
Although creationism might seem bizarre to individuals who have never believed in it, for those who do, its power is almost beyond words. Alters remembers, as a young teenager, sitting in on a sermon by Robert Schuller, a televangelist whose California church is fairly liberal. Listening to Schuller endorse the views of scientists who consider rocks to be millions of years old, Alters began to cry, horrified that the preacher would lie. "It was almost as if he stood there and said Jesus Christ didn't exist," he recalls. For biblical literalists, belief is generally an all-or-nothing proposition.

Identity crisis

Godfrey entered college convinced that scientists were engaged in a vast conspiracy to promote evolution. At Bishop's University in Sherbrooke, Quebec, he majored in biology and lived at home, several kilometers away. In one sense, his studies had little effect on his faith. "You can learn facts, and you can do really well on exams and not believe" what you're learning, he says. But then, his classes

also raised niggling questions that biblical literalism could not easily answer.

For example, there was the quandary of death. A literal reading of Genesis indicates that no animals perished before Adam and Eve ate the fateful apple—in other words, that there were no carnivores preying on other animals. But in his biology classes, Godfrey learned of predators perfectly framed to kill: cats with stereoscopic vision, enlarged canines, and claws; spiders that weave webs as traps; and sharks that replace serrated teeth throughout their life. "They're not eating sea-



Rebutting Noah's flood. Godfrey drew these sketches to show how Noah's flood cannot explain fossil footprints, as they're found in different layers of rock and depend on an animal resting its weight on the ground.

weed," says Godfrey, who puzzled over how these animals had emerged if God hadn't intended them to prey on others. "That was the first thing at university that really started to disturb me," he says.

In his final year, Godfrey gave a presentation on the origin of flight, arguing that *Archaeopteryx*, the earliest known bird, could not have evolved from the dinosaurs.

Although impressed by similarities between *Archaeopteryx's* anatomy and that of dinosaurs, he pushed this to the back of his mind. By this time, Godfrey was at a crossroads and determined to find out for himself whether the claims of biologists and paleontologists were true. He enrolled in graduate school in paleontology at McGill University and was taken in by Robert Carroll. Carroll had heard that Godfrey was a creationist but didn't give it much thought, he says now. In Carroll's lab, Godfrey prepared and described fossils of an ancient amphibian called *Greererpeton*. The fossils "could have come from the moon," says Carroll. Analyzing them out of context had little impact on Godfrey's views.

Then Godfrey's world came crashing down.

His first summer in graduate school, he was invited to join a field expedition in rural Kansas, where University of Toronto paleontologist Robert Reisz and some students were digging for pelycosaur, 300-million-year-old animals that display some features of mammals that evolved later. Living in tents on a farmer's field in searing heat and humidity and surrounded by cows, the group visited the nearest town, Garnett, weekly for food and other supplies. At night, the sky glowed with stars, and Godfrey pointed out the constellations to his companions.

By day, quarrying through thin layers of rock, "we started to come across footprints of terrestrial animals," says Godfrey. "You can't imagine a global flood and animals finding ground to make footprints on. ... That, more than anything, any other experience in my life, really shook me to the core." Godfrey agonized about where these footprints might have come from. Some creationists argue for floating mats of vegetation during the flood, but Godfrey found that unconvincing.

"He was one of the brightest students that I'd ever seen," says Reisz, who at the time knew that Godfrey was a devout Christian but had no idea of the crisis triggered by his fieldwork. "The ease with which he learned, the ease with which he accumulated new ideas, ... all spoke to a superior intelligence."

Godfrey held out from embracing evolution, however, until after moving in 1989 to Drumheller, Alberta, dubbed the "dinosaur capital of the world" because of its diversity of fossils. Godfrey often drove southeast to Dinosaur Provincial Park, passing through a landscape of sediments laid atop one another: deposits from freshwater and terrestrial environments in one, marine organisms and mollusks in another, and a third that mimicked the



Earth according to Bible.
The expansive Creation Museum in Petersburg, Kentucky, opened last May.

first, a mix of fossils from fresh water and land. “These animals were living here in this same place, but they couldn’t have all been there at the same time,” he says, a fact that was irreconcilable with flood geology. It was then that “the rest of the young-Earth creationist ideas kind of exploded.”

Godfrey ran through bitterness, anger, and disappointment about having been deceived for so many years. He sought out creationists and confronted them. Late in graduate school, he and his devout Christian wife, mother-in-law, and mother attended a weekend symposium at a Bible school in New York state, where Godfrey says he angrily stood up at the end of a talk and argued passionately with the speaker.

It was there, and in conversations during holiday meals, that Godfrey’s parents realized that he had changed. Deeply unhappy, they worried whether their son could endorse an old Earth and remain a Christian. Their message was, “It’s all or nothing,” says Christopher Smith, Godfrey’s brother-in-law and a pastor at the University Baptist Church in East Lansing, Michigan. “I do remember a discussion one year at Christmas; the tone quickly turned angry,” Smith says. Godfrey’s father eventually asked that he stop mentioning evolution, as the topic was too upsetting to the family, who believe that their afterlife depends on embracing creationism.

Parents often cannot cope with such an upheaval in a child. “The day I had to tell my mother I wasn’t a young-Earth creationist was the scariest day of my life,” says Denis Lamoureux, who teaches science and religion at St. Joseph’s College in the University of Alberta in Edmonton, Canada. His mother was so embarrassed by his work in

biology that she told her friends her son was still in the profession he once belonged to: dentistry. Some compare these conversations to informing fundamentalist Christian parents that they are gay—but perhaps even more wrenching.

Jagged resolution

Trying to articulate where his religious beliefs stand now, Godfrey’s eyes fill with tears. “It’s been so long, a lifelong struggle, to sort out,” he says. He has flirted with atheism but found it too depressing. Several years ago, he stopped attending church for a year before returning. He believes in God today, he says, but tomorrow may be different.

Complicating matters are the people he most loves and their stance on creationism. Godfrey and his wife met as teenagers in a church youth group. They and their five children have always attended an evangelical, young-Earth creationist church. About 6 months ago, Godfrey seethed through 12 weeks of a DVD presentation on creationism. During an early session, he raised objections in front of a church youth group that included his 15-year-old daughter. The group was not brought back for later showings.

“I was really torn,” he says, “because I would have loved to have been given the opportunity to say, ‘Okay, I’m now going to do a presentation on the other side.’ But they don’t want to hear it. It’s too threatening and it’s too upsetting.”

Like many creationists-turned-evolutionists, Godfrey is conflicted about how, and how forcefully, to press his case. In 2005, he and his brother-in-law Smith published *Paradigms on Pilgrimage*, a book describing their own transition and making the case for evolution.

His father prayed that it would not be published, and Godfrey did not send his parents a copy. He thought his book would change minds among creationists but isn’t sure it has.

“I haven’t” read it, says his younger sister Esther Godfrey, of Sherbrooke. “I’m feeling it’s a very odd way of viewing the Bible, if you can choose which parts you believe literally and not literally.” Esther Godfrey is not sure what turned her brother away from a young Earth, as they’ve never discussed it. “I know he saw something at some point, maybe a fossil, and thought the Earth has to be old,” she says. “That is what I’ve heard.”

Just as he longs for biblical literalists to be more receptive to evolution, Godfrey also wishes that biologists would join the discussion. He was incensed 5 years ago when, participating in an evolution-creationism debate at Bishop’s University, where he once argued against the fossil record, no one from the biology department attended.

“I continue to think that scientists have made a serious mistake in not engaging the issue,” agrees entomologist Susan Fisher of Ohio State University in Columbus. Fisher, always an evolutionist, was shocked to learn that more than half the students in her 700-person introductory biology class identified themselves as creationists. Last year, she received funding from the John Templeton Foundation to bring in scholars, most of them Christians who reject creationism, to speak to the students. “We need to figure out among students changing their minds, what does that?” says Jason Wiles, who studies evolution education at McGill and Syracuse University in New York state and was himself once a creationist.

But sometimes, former creationists believe, changing minds is not worth the heartache it brings. Godfrey no longer considers evolution worth mentioning to his parents, now 78 and 79 years old, and he asked that they not be contacted for this article. “You can live your life just fine and not know squat about evolution,” he says.

When it comes to his children, Godfrey’s not sure what they believe nor how firmly to steer them. Certainly, he says, they are exposed to creationist teachings. Of all his children it’s his youngest, 4-year-old Victoria, who shows the strongest penchant for science. Wandering the beaches near her home, she often asks to bring home bones she finds, just as her father did years ago. Will her view of the world make room for evolution? Godfrey watches and waits and wonders whether to step in.

—JENNIFER COUZIN