

Commonly Asked Questions About **Science** and the **Bible**

BY ARIEL A. ROTH

One of the greatest intellectual conflicts of all time is the battle between science and the Bible. This warfare has been raging for two centuries. Many, including teachers and students, are confused as they face opposing interpretations. Here are some commonly asked questions that should help explain the conflict and answer students' questions.¹

1. What is the conflict between science and the Bible all about?

Science claims that life on Earth developed gradually, by itself, over billions of years. This is the evolution model. The Bible claims that God prepared the Earth and created living things in six days a few thousand years ago. This is the creation model. Obviously, there is a great chasm between these two concepts. It would be hard to imagine two interpretations that are more different.

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various ways, such as evolution or creation. The Bible's statements, on the other hand, do not allow for a very broad interpretation in this area. There is only one model of origins in the Bible—God created in six days. There is no suggestion in the Bible of life having evolved over billions of years, as science claims.

2. Why don't scientists believe the Bible?

Some scientists do believe the Bible. They see lots of evidence in nature to support a creationist interpretation. However, the majority do not. Some believe in God but not the Bible. Studies in both 1916 and 1996 indicated that 40 percent of scientists in the United States believed in a God that answered their prayers, 45 percent did not, and 15 percent were not sure.² In light of the fact that many scientists believe in God, it is strange that they do not consider Him as an explanation for what they observe in nature. Here we are dealing with a worldview, the modern scientific attitude, that tries to explain everything without God. Some scientists want to consider only what nature reveals and don't believe in God at all. Others believe in

some sort of “intelligent design” but not a personal God, while a smaller group seek to harmonize science and the Bible. Several centuries ago, the pioneers of modern science, such as Kepler, Boyle, Linnaeus, Pascal, and Newton, believed in God and His active involvement in the creation of nature. Today, scientists who believe in God tend to practice that belief only on weekends when they go to church. The current scientific attitude is to exclude God and to look for naturalistic explanations for scientific phenomena.

3. Has science discovered God?

While evolutionists try to explain everything without a Creator God, some new scientific data about our universe is so mind-boggling and precise that it suggests very strongly there must be a higher Power who designed things. If this were not the case, there would be no universe, and we would not be here. For instance, if the ratio of the electromagnetic constant to the closely related gravity constant varied by only one part in 100000000000000000000

00000000000000000000 (40 zeros), stars would be either blue giants or red dwarfs, and we would not have a sun that gives us the right kind and amount of light to support life on Earth.³ The number given above represents an extremely precise relationship. The likelihood of the phenomenon’s occurring by chance is incredibly improbable—each zero divides the previous value by 10, three zeros represent one part out of a thousand, and six zeros represent one part out of a million, etc. The mass of a neutron could not differ by one part in 1,000, or stars would collapse into neutron stars or become black holes. There are many kinds of precisely related factors similar to these.⁴ A great deal of scientific evidence suggests that the universe and life have a Designer. It is somewhat like discovering a well-manicured garden deep in a forest. Even if you do not see a gardener at work, the neatly arranged rows of flowers and vegetables tell you that there must be someone who planted and maintained the garden. Likewise, the complexity and precision we see in nature tells us that there must be a God.

4. What are the main problems science poses for creationists?

A. *Radiometric dating*, which suggests that life has existed on Earth for billions of years instead of a few thousand, as proposed in the Bible. In measuring the age of everything from rocks to wood to bones, radiometric dating analyzes radioactive atoms that slowly change to other kinds of atoms. The more change, the older the item. Carbon-14 and potassium-argon dating are two of the methods used. Many radiometric readings suggest that various fossils and rocks are millions or billions of years old. However, other methods produce results indicating an age of only a few thousand years.

One of the problems in determining age is that we do not know how much radioactive material there was to start with. For instance, volcanic lava on Rangitoto Island in New Zealand produced readings indicating an age of less than 1,000 years by carbon-14 but as old as 465,000⁵ years using the potassium-argon method. Scientists think that in this case, the carbon-14 date is cor-

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Unique rock layers are often extremely widespread, as would occur during a major flood.

rect, and the potassium-argon date is erroneous because of the common problem of excess argon that makes things date older than they are.

The Flood described in the Bible doubtless had a dramatic effect on the concentration of the components used to establish age in radiometric dating systems. However, since most scientists do not believe that a worldwide flood occurred, they do not factor these effects into their calculations.

B. *Fossils*. In Earth's layers, we find many fossils, the preserved remains of past life. Overall, these fossils increase in complexity from lower to higher layers. This trend is interpreted by many scientists as strong evidence for evolutionary progression over billions of years.

Creationists believe this layering was produced by the Flood. As the waters gradually rose, they eroded and redeposited the various pre-Flood landscapes, which contained organisms increasing in complexity from lower to higher.⁶

On the globe today, we still see some of this increase in complexity. In the deep rocks, we see only simple one-celled organisms. Above them, we have the oceans with marine organisms of intermediate complexity, while the most advanced organisms live higher up on land. This interpretation is called the ecological zonation theory.

One aspect of the fossil record strongly supports this theory while posing a serious problem for evolution. According to evolutionary interpretations and radiometric dating, virtually no evolutionary development occurred for the first 85 percent of evolutionary time. Organisms remained basically of the one-cell type. Then, in less than three percent of evolutionary time, practically all the major groups (phyla) of animals evolved. Evolutionists call this sudden burst of diversity in life the Cambrian Explosion. But what explains why there was virtually no evolution for so long, and then, suddenly, a wide variety of animal groups appeared? This is a problem for evolution but fits well with creation. The Cambrian Explosion, whose organisms are almost exclusively ocean forms, represents the low seas before the Flood. They occur in the geological layers where we would expect to find

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them according to the ecological zonation theory.

5. What problems does science pose for evolutionists?

A. *Origins of life*. Probably evolution's most difficult problem is to explain how life began. Even the simplest kind of independent life is so complex that one can hardly imagine its evolving all by itself from any non-living matter. One chemist calculated that the probability of this happening is only one chance out of the number 1 followed by 5 billion zeros.⁷

B. *Complex systems*. Advanced life forms pose huge problems for evolutionists. They have a multitude of complex systems with interdependent parts that do not work unless all the necessary components are present.⁸ The complex human eye provides an example. The mechanism that increases or decreases the size of the pupil contains a complex of muscles, nerves, and a control center that must work together. This poses a problem for evolution because it cannot explain how such complex systems came into being.

In fact, it appears that the survival of the fittest, proposed by Darwin as the mechanism for evolutionary advancement,

actually interferes with the development of complex systems. Survival of the fittest would eliminate non-functional developing systems because they could not work until all their necessary parts had evolved. For two centuries, scientists have been seeking a mechanism to explain the evolution of complex structures, but thus far, none has been found.

C. *Intermediate life forms*. Another problem for evolution appears in the fossils. If the first simple life forms on Earth really evolved gradually into all the kinds of organisms we see today, one would expect to find a variety of intermediate fossils in the process of gradually evolving into other forms. However, we find hardly any, and the few proposed by evolutionists may not be real intermediates. The reptile-bird *Archaeopteryx* is an example, but it lacks intermediates to other kinds. Here is where evolution fails one of its most crucial tests. Between major groups of organisms (phyla, divisions), we would expect to find the greatest number of intermediate forms, but it is precisely at these points that such intermediates are notoriously absent. Fossils thus offer little support for evolution from simple to complex life forms.

6. What is the difference between microevolution and macroevolution?

Microevolution usually refers to minor changes within species, such as occurs when a germ becomes resistant to an antibiotic. This ability to adjust to small variations in the environment permits organisms to survive in varying environments. Both cre-

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ationists and evolutionists see these adaptations as part of the normal activity of living things.

On the other hand, evolutionists postulate that the accumulation of many small changes could lead to larger changes, eventually producing very different kinds of organisms—including new genera, families, orders, classes, phyla, and divisions. Such changes are called macroevolution. Most creationists believe that macroevolution has not occurred except in a very limited or degenerative mode. While microevolution has been well demonstrated in the laboratory and in the field, macroevolution has not. Furthermore, the fossil record does not support macroevolution.

7. What about all those intermediates between modern humans and ape-like forms?

There haven't been that many found. Scientists have discovered many skeletons of creatures that closely resemble *Homo sapiens* (Cro-Magnon, Neanderthal, archaic *Homo sapiens*, *Homo erectus* group), which appear to be varied types of ancient human beings who lived after the Genesis flood.⁹ They

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have also found good representatives of ape-like australopithecines like the famous Lucy, but the intermediates between the two, the *Homo habilis* group, is poorly represented and very controversial. We do not have a good sequence of fossils showing the evolution of man, although books and magazines often portray this. Furthermore, one of the great controversies in science has centered around the validity of the australopithecines as evolutionary ancestors to man. There is probably no area of science that has evoked more

controversy—and reinterpretation—than questions about human ancestry. Actually, we don't have enough fossil material to draw valid conclusions.

It does not appear that human beings evolved from some ape-like ancestor over many hundreds of thousands or millions of years, as evolutionists claim. As we look at the reliable evidence of past human activity, it all seems very recent. If human beings have been around for half a million years, as evolutionists claim, where is the evidence of this—such as many good skeletal remains, ancient civilizations, and written history? We do find these, but they all seem to be only a few thousand years old. It does not appear that humans have been building pyramids and writing manuscripts for millions or even hundreds of thousands of years. The Bible indicates that God created human beings in His

image a few thousand years ago, and the data supports that.

8. Have we found any remains of humans who lived before the Flood?

There have been a number of reports of skeletons or tracks of human beings in the layers that would have formed before or during the great flood described in Genesis. None of them seems to be unquestionable, and most are extremely doubtful. There may be several reasons for this scarcity:

- It is unlikely that a large number of humans lived before the Flood. People reproduced much more slowly then. According to the biblical record, the pre-Flood patriarchs' eldest sons were born, on the average, after their fathers were well over 100 years old.¹⁰
- During the Flood, humans escaped to the highest regions, where their chance of preservation by burial in sediments was very poor.
- Before the Flood, humans may have resided in higher, cooler regions, so we would not expect to find their remains in the lower geologic layers.
- The devastation caused by the flood-

waters destroyed the evidence of pre-Flood humans.

9. Where did dinosaurs come from? Were they preserved in Noah's ark?

We do not know, but the following seems likely. The main kinds of dinosaurs were probably created by God and thus would have been preserved in the ark, along with the other major kinds of animals. They perished, along with a number of other animals, soon after the Flood, perhaps as the result of dramatic changes in climate and/or habitat. Most dinosaurs were small, the size of a turkey or deer, and we do not know much about them. The huge ones may not have been created by God but rather the result of manipulation, similar to the way modern humans have bred different breeds of dog. Such monsters as the Tyrannosaurus would not have been preserved in the ark and probably perished in the great Genesis flood.

10. How old is the Earth?

We are not sure. The Bible indicates that God prepared the Earth and created life a few thousand years ago in six days.¹¹ There

are also some suggestions in the Bible¹² that the Earth may have been a dark, empty, water-covered sphere before Creation week, but the texts only imply this. Life has been here on Earth for only a few thousand years. Some scientific data are more easily explained if we assume that there was an empty Earth here long before Creation week began.

11. What does the flood described in the Bible have to do with Creation?

Many of the rock layers on the surface of the Earth contain some fossils. Evolutionists say that these represent plants and animals buried over billions of years as they evolved. But, as described above, there are many problems with these theories.

On the other hand, the Bible indicates that God created the various life forms in six days a few thousand years ago. So where did the fossils come from? The great worldwide flood best explains the formation of fossil layers. Most of the fossils we find are organisms that lived before the Flood and were rapidly and sequentially buried during that horrendous event. If millions of years elapsed between layers that contain differ-

ent kinds of fossils, as evolutionists claim, there is no way that God created all kinds in six days. A small, local flood in Mesopotamia, as suggested by some, would not help. The deluge would have to be sudden and worldwide, as described in the Bible, to explain the fossil layers on all the continents.

12. What is the evidence for a worldwide flood?

The Bible is specific about the Flood having been a worldwide event.¹³ However, there is abundant evidence elsewhere, as well:

- In folk stories about the past, the idea of a worldwide flood appears as a dominant theme all around the globe—six times as common as causes for any other gigantic calamities.¹⁴ This idea would probably not be so dominant if it were not based on a real event.
- We find many fossils of marine organisms on mountains and deserts where we would not expect to see them. They should be in the ocean; yet layers containing materials that originated in the seas are much thicker on the continents than in Earth's

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oceans. Something very unusual, like a worldwide flood, must have caused this.

- As we study the characteristics of the rock layers on the continents, we see evidence that lots of them were laid down underwater, as would be expected during a flood.¹⁵

- Unique rock layers are often extremely widespread, as would occur during a major flood. Some extend over 400,000 square miles, as far as from Texas to Canada.¹⁶ We do not see this kind of widespread laying down of layers occurring now, but a major flood would do this.

- It appears that the layers of rock containing fossils were deposited rapidly, and

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not over the billions of years believed to be necessary for evolutionary development. The laying down of many layers, once

thought to have occurred slowly, has been shown by new tests to have happened very rapidly. Furthermore, in many places throughout the Earth where major portions of the layers are missing, there is little evidence that a lot of time elapsed between the laying down of progressive layers, as proposed by the evolutionary time scale. With missing layers, we would expect to see a lot of irregular erosion that occurred during the millions of years that elapsed, but the contacts are usually flat, indicating that one layer was laid down rapidly on top of another.¹⁷ Furthermore, the continents erode so quickly that in the proposed billions of years suggested for their existence, all of Earth's landforms would have been washed into the oceans more than 100 times.¹⁸ But they are still here, indicating that they are not very old. All this fits better with the biblical flood model.

13. Were there ice ages?

As we examine the rocks on the surface of the Earth, we find strong evidence that glaciers covered parts of the continents that are now ice-free. (Of course, parts of the Earth like Greenland and Antarctica are still in an "ice age.") Scientists who believe in the biblical account of beginnings think that there was a single ice age soon after the Flood caused by the changes from that event.¹⁹ Other scientists think there were four ice ages, mostly earlier, but there is considerable disagreement as to the number and dating of them.

14. Could God have created life over billions of years instead of in six days?

Yes, He could have, and many have suggested this explanation of how life began. However, this does not seem to be the case. It would be a strange kind of God who would stretch creation out over billions of years and then tell us, in the Ten Commandments, some of His most direct commands to humankind,²⁰ to keep the seventh-day Sabbath holy because He created everything in six days. Furthermore, Jesus and the writers of the New Testament referred to Creation and the Flood as real events.²¹ We also have evidence for the Flood which strongly indicates that life did not develop over billions of years.

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Creationists believe human beings were created in the image of God, rather than evolving from some ape-like creature, as evolutionists claim.

15. Which is true: creation or evolution?

The Bible is God's Word. It contains only one model of origins—creation. That alone says a lot about creation being true. But, in addition to that, science has failed to make a compelling argument for evolution. (See Question 5.) Science does not know how life could occur on its own; it doesn't have a way of explaining how complex systems could evolve; and it lacks a satisfactory explanation for the missing links between major fossil kinds. While it claims there is lots of evidence that the fossil layers were laid down over billions of years, there is also good evidence for the Genesis flood and for these layers being laid down rapidly. The Creation model makes more sense. ☞

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lege and university appointments and is a member of several learned societies. Before his recent retirement, he was for 14 years the director of the Geoscience Research Institute in Loma Linda, California. For the past 23 years, he has been the editor of the journal *Origins*. Dr. Roth has been active in the evolution-creation controversy in the United States as a consultant or witness to the states of California, Oregon, and Arkansas; and has conducted numerous paleontological and geological field trips in Australia, New Zealand, Europe, and North America. The author of more than 150 articles in both scientific and non-technical journals, he is a popular lecturer throughout the world. His book *Origins: Linking Science and Scripture* (Review and Herald, 1998), which presents scientific evidence that authenticates the Bible, is being translated into 11 languages.

NOTES AND REFERENCES

1. For a comprehensive discussion of these problems, see the recent book by the author: *Origins: Linking Science and Scripture* (Hagerstown,

Md.: Review and Herald Publ. Assn., 1998).

2. Edward J. Larson and Larry Witham, "Scientists Are Still Keeping the Faith," *Nature* 386 (1997), pp. 435, 436.

3. Dean L. Overman, *A Case Against Accident and Self-Organization* (Lanham, Md.: Rowman & Littlefield Publishers, Inc., 1997), pp. 134, 135.

4. Hugh Ross, *The Creator and the Cosmos* (Colorado Springs, Colo.: NavPress, 1995), p. 114.

5. Ian McDougall, H. A. Polach, and J. J. Stipp, "Excess Radiogenic Argon in Young Subaerial Basalts From the Auckland Volcanic Field, New Zealand," *Geochimica et Cosmochimica Acta* 33 (1969), p. 1,485.

6. For further discussion and other explanations, see A. A. Roth, *Origins: Linking Science and Scripture*, pp. 162 to 177.

7. Harold J. Morowitz, *Energy Flow in Biology: Biological Organization as a Problem in Thermal Physics* (New York and London: Academic Press, 1968), p. 67.

8. Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* (New York:

Touchstone, 1996).

9. Marvin L. Lubenow, *Bones of Contention: A Creationist's Assessment of Human Fossils* (Grand Rapids, Mich.: Baker Books, 1992).

10. See Genesis 5.

11. See Genesis 1-2:4; Exodus 20:11; 31:17.

12. See Genesis 1:2; Job 38:9; 2 Peter 3:5.

13. See Genesis 7:18-23.

14. Roth, *Origins: Linking Science and Scripture*, pp. 303-307.

15. *Ibid.*, pp. 216-218.

16. *Ibid.*, pp. 218, 219.

17. This is explained and illustrated further in *ibid.*, pages 222 to 229.

18. Roth, *Origins: Linking Science and Scripture*, pp. 263-266.

19. Michael J. Oard, "A Post-Flood Ice-Age Model Can Account for Quaternary Features," *Origins* 17 (1990), pp. 8-26.

20. See Exodus 31:18; 32:16; 34:1.

21. See Matthew 24:38, 39; Mark 10:6; 13:19; Luke 17:27; John 1:1, 2; 1 Corinthians 15:22, 45; Jude 1:14.

NEED MORE INFORMATION?

Science frequently brings forth dramatic new discoveries. Some are important, others may only reflect theories and opinions sensationalized by the public media. How can a teacher evaluate the plethora of new data being produced? Here are several suggestions:

- Endeavor to distinguish between scientific data and its interpretations. Often, speculation is presented as fact. Because they are undergoing constant revision, interpretations should be viewed with caution.

- Get the facts about the actual data. When a great scientific discovery is announced, keep in mind that in many cases, other researchers will present opposing interpretations in the scientific literature within a few weeks or months.

- Try to stay up to date with the scientific thinking by reading widely in respected scientific journals. One of the best tools for keeping up with the progress of new discoveries is the search engines on the Internet. There are also a number of good creation-oriented Web sites, some of which include current data. Like everything on the Internet, they should be used with discrimination. A few addresses are:

Access Research Network: <http://www.am.org/>

Answers in Genesis: <http://www.answersingenesis.org/>

Creation Digest: <http://www.creationdigest.com/>

Creation Research Society: <http://www.creationresearch.org/>

Creation Science Resource: <http://www.geocities.com/Athens/Delphi/4881/>

Earth History Research Center: <http://origins.swau.edu/>

Geoscience Research Institute: <http://www.grisda.org/>

Institute for Creation Research: <http://www.icr.org/>

There are also some creation-oriented journals that can help. Each has its special approach. The main ones are:

Acts and Facts: P.O. Box 2667, El Cajon, CA 92021.

Creation ex nihilo: P.O. Box 6302, Acacia Ridge DC, Qld, 4110, Australia.

Creation Research Society Quarterly: P.O. Box 8263, St. Joseph, MO 64508.

Geoscience Reports and *Origins*, both published by: Geoscience Research Institute, Loma Linda University, Loma Linda, CA 92350.

Origins and Design: P.O. Box 38069, Colorado Springs, CO 80937.