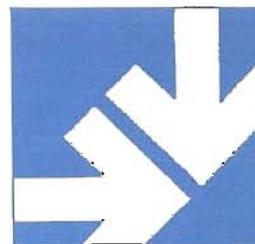
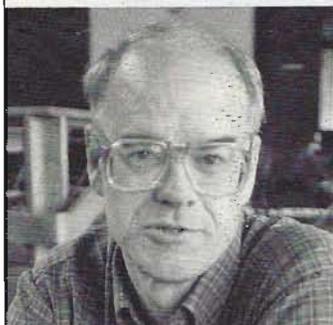


SEARCH

Scientists Who Serve God



**HE'S
STILL A
"ROCK-
HOUND"**



Davis A. Young teaches in the Dept of Geology, Geography, & Environmental Studies at Calvin College, an arm of the Christian Reformed Church. His writings have helped many Christians accept the idea of a very ancient earth.

A Young Geologist in a Theological Young Family

Born in 1941, Davis grew up in a Philadelphia suburb. His father, Edward J. Young, was a well-known professor at Westminster Theological Seminary. Another professor's son had a collection of minerals called zeolites which so fascinated Dave that he took up mineralogy as a hobby and at age twelve resolved to become a geologist. He spent many hours in Philadelphia's Fairmount Park, where Wissahickon Creek had cut a gorge through mineral-bearing schists on its way to the Schuylkill River. When his father spent a sabbatical year in San Francisco writing a commentary on Isaiah, the family had to stop at every rock shop in the Rockies and Sierras on its trip west.

As Orthodox Presbyterians, the Youngs supported the concept of Christian day schools, but Dave attended public schools. Although his sister went to Calvin College, he chose Princeton so he could major in geological engineering. He credits the Princeton Evangelical Fellowship for helping him mature in faith, after a firm theological grounding in his warmly Christian home. A Princeton professor guided Dave through a senior thesis project, confirming his boyhood career choice. He graduated from Princeton in 1962.

After a Rocky Start, A Satisfying Career

Davis then spent three years earning an M.S. in mineralogy and geochemistry at Penn State. There he participated in Inter-Varsity Christian Fellowship on campus and met his wife Dorothy, a Baptist. After they married, the couple attended a General Conference Baptist Church. The next three years they spent at Brown University in Rhode Island, where in 1969 Dave received his Ph.D. in geology. By then he was already teaching at the Washington Square campus of New York University.

The Youngs settled in Westfield, New Jersey, where they threw themselves into the life of a growing Orthodox Presbyterian church. Dave became an elder and helped start a Christian day school. He learned to get a lot of work done while commuting back and forth into New York City by train. He took students on field trips to Central Park and enjoyed many other things about teaching at N.Y.U.

In 1973, however, the financially troubled university did not renew the contracts of five untenured geology faculty members. The Youngs moved to the small southern town of Wilmington, North Carolina, where Dave helped develop a new department at a branch of U.N.C. The town had a Reformed Presbyterian church and a nice beach, but classical music on FM radio was scarce, Dave recalls, "and I was a long way from any interesting rocks."

In 1977 Calvin College in Grand Rapids, Michigan, wanted to hire an experienced geologist to form a new department. They waited another year for Dave Young to fulfill his five-year contract in North Carolina. Geologist Clarence Menninga was already at Calvin, teaching in the Physics Dept. By 1982 the college could offer a major in a department filled out by geologist Jim Clark and geographer Henk Aay.

Several years ago, when Davis Young heard that N.Y.U. was getting rid of its stored geological specimens, he managed to acquire most of them for Calvin. Those rocks have found a good home.

So, it seems, has Professor Young.

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Scientific Investigation

HOW OLD IS THE EARTH?

THE ROCKS OF SAGES

All rocks consist of minerals, but not all minerals are rocks (example: a gold nugget). Minerals have a definite chemical composition; rocks are generally aggregates of mineral grains formed by natural processes.

Igneous rocks form when molten material called *magma* solidifies. Volcanic lava is magma that is still liquid when it reaches the earth's surface. Igneous rocks include glassy obsidians, finely crystalline basalts, and coarsely crystalline granites (usually composed of quartz, feldspar, and mica).

Sedimentary rocks are deposited when loose material is laid down, then cemented. Shale comes from clay deposits, sandstone from sand, gypsum from calcium sulfate in sea water, some limestones from dissolved calcite, others from the remains of corals or other tiny organisms.

Metamorphic rocks have been changed in appearance or composition by heat or pressure. Marble is metamorphosed limestone, quartzite comes from sandstone, slate from shale. Various materials change into schists, often glistening with mica and other minerals.

Petrologists study rocks. Mineralogists study minerals. Paleontologists study fossils. Seismologists study earthquakes. Geomorphologists study major surface features; geochronologists assign dates to their formation. Petroleum geologists hunt for oil and gas, and so on. (If a stratigrapher is a "sedimentary geologist," is a geophysicist a "metamorphosed physicist"?)

Davis Young calls himself a "hard-rock" geologist. That distinguishes him from certain other kinds, including paleontologists who study the fossil remains of plants and animals preserved in sedimentary rocks. Nineteenth-century paleontologists developed the concept of a "geologic column" based on a succession of fossil types in sedimentary strata (layers) piled on top of each other. The basic facts of fossil succession, which today seem to require an ancient earth, were known at least twenty years before Charles Darwin proposed a biological mechanism to explain how such changes could have taken place.

Facing a Solid Mass of Evidence

Even a hard-rock geologist has something to say about the age of the earth, however. Although he has studied rocks in Ontario, New Mexico, and elsewhere, Young's favorites are some relatively uncommon "syenites" of the New Jersey Highlands. His field studies of those rocks were published in *Geological Society of America Bulletin* (1971) and *Journal of Petrology* (1972). Young cites the petrology and structure of that region to show how well radiometric dating methods can confirm ages estimated from structural features alone.

Today's accepted scientific picture of earth history is based on evidence piled up in thousands of studies all over the world. To cope with that mass of information, geologists use many technical terms that may be confusing to nonspecialists. Yet the basic principles are not difficult to understand.

How the Ages of Rocks Are Determined

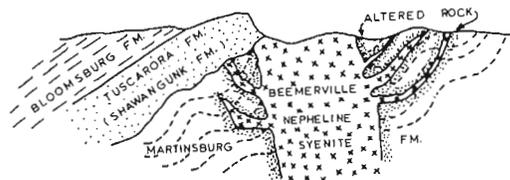
Three major generalities have enabled geologists to assign relative ages to many rock formations. (1) The "principle of superposition" states that in any undisturbed stack of layered sedimentary or volcanic rocks, a layer at the bottom must have been deposited earlier than the layer immediately above it. Sometimes layers are folded or even inverted, or a layer of rock has intruded in molten form after others have been deposited, or certain layers present in one sequence are missing from nearby sequences. Such exceptions can usually be identified by geologic field mapping over a large area.

According to (2) the "principle of cross-cutting relationships," any body of rock whose borders transect the layering of other structures in surrounding rocks must have been emplaced in that situation later than those rocks. And (3) the "principle of faunal succession" generally makes it possible to estimate the age of a layer of fossil-bearing sedimentary rock from the assemblage of fossil organisms it contains. This rule was worked out from field observations, not from evolutionary theory.

Today it is possible to use the decay rate of radioactive isotopes in certain minerals to assign absolute dates to major events in earth's history. Evidently the earth began to cool about 4.5 billion years ago. The oldest rocks dated so far are about 3.9 billion years old, and traces of life appear in rocks about 3.5 billion years old. The "Cambrian explosion" of multicellular life began about 570 million years ago.

Davis Young sees no reason to doubt the validity of those conclusions.

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Field relationships of a body of nepheline syenite in northern New Jersey. It intrudes the (Ordovician age) Martinsburg Formation and is overlain by the (Lower Silurian age) Tuscarora Formation, the syenite rock, which would be assigned an age of 425 to 450 million years on that basis, was dated by a radiometric technique at 437 million years. Sketch from David A. Young, *Creation and the Flood* (Baker, 1977, p. 191).

“Rock of Ages” is a familiar hymn written over two hundred years ago. Its title is a metaphor of Christ, taken from 1 Corinthians 10:1-4. To know Jesus Christ, the Rock of Ages, was more important to the hymn writer than knowing the age of rocks. That’s also true for geologist Davis A. Young.

A resurgence in the United States of what is known as “flood geology” followed the 1961 publication of *The Genesis Flood* by theologian John C. Whitcomb and civil engineer Henry M. Morris. Davis Young found himself in sympathy with their high view of biblical inspiration, but he thinks the “scientific creationist” movement they inspired is based on a misunderstanding of fundamental geologic facts and principles.

Good Theology Should Not Be Linked to Bad Geology

Young’s plans to collaborate on a book with his father, an Old Testament scholar, changed when his father died in 1968. Having absorbed his father’s concern for a truly biblical theology, though, the young geologist began writing *Creation and the Flood* while teaching at N.Y.U. He wanted the Bible to speak for itself, without letting either a “neo-catastrophism” build up a pseudo-science from selected biblical texts or a “theistic evolutionism” superimpose its own agenda on Scripture.

By the time Davis Young’s *Creation and the Flood* was published in 1977, the “young-earth” movement was beginning to enter the U.S. political arena, soon stirring up a backlash of resistance from the scientific community. Christians armed with young-earth publications sought to influence textbook selection in a number of states and even introduced legislation mandating “balanced treatment” of their views. The press almost always referred to them as “fundamentalists,” “religious right-wingers,” or simply “creationists.”

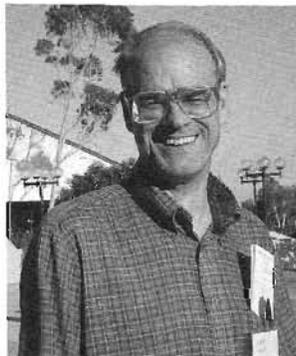
One balanced treatment law enacted in Arkansas was struck down by a Federal District Court in January 1982. Another, in Louisiana, worked its way through the court system and was finally struck down by the U.S. Supreme Court in June 1987. Both rulings labeled so-called creation science a religious position masquerading as science.

“Creationism” Is Not the Only Christian View of Creation

Davis Young worries when Christians promote the idea that the earth had a brief, sudden, catastrophic history, dominated by a single global flood. That damages the credibility of Christianity, he believes, and in the long run will hinder evangelistic and apologetic efforts.

In his 1982 book, *Christianity and the Age of the Earth*, Young tried, without rancor, to alert Christians to such dangers:

I regret the fact that in this book I must call those with whose views I disagree, “creationists,” because I am a creationist, and I believe the biblical record of creation. Unfortunately, however, those who advocate the creation of the world in seven literal days only a few thousand years ago have come to be known generally as creationists. Hence, the reader should not draw the conclusion that I am opposed to creation simply because I use the term “creationist.” I would like to say only that my understanding of creation as taught in Scripture differs from that of those whom I term “creationists.” (p. 10)



If Christians would stop defending (or even refuting) a false “creationism,” Young wrote, more of our energies could go into “interpreting the Bible and the world that God in His mercy and grace has given us.”

GENESIS INTERPRETED

WHERE TO DIG

To reach valid conclusions, one must dig into many facts and careful analyses of those facts. On the age of the earth, a good place to dig is in two books by Davis A. Young mentioned on these pages: *Creation and the Flood* (subtitled “An Alternative to Flood Geology and Theistic Evolution,” Baker Book House, 1977); and *Christianity and the Age of the Earth* (Zondervan, 1982). The latter is now back in print, available from Artisan Sales (P.O. Box 1497, Thousand Oaks, CA 91360).

In *Science Held Hostage* (IVP, 1988) by Howard J. Van Till, Davis A. Young, and Clarence Menninga, Young discusses the geology of the Grand Canyon and the ways he feels it has been misinterpreted by young-earthers.

Some people do not accept the validity of radiometric dating methods. For them, Daniel E. Wonderly has compiled evidence from other methods of arriving at the age of the earth: *God’s Time Records in Ancient Sediments* (Flint, MI: Crystal Press, 1977), and *Neglect of Geologic Data* (subtitled “Sedimentary Strata Compared with Young-Earth Creationist Writings,” IBRI, P.O. Box 423, Hatfield, PA 19440, 1987).

These and many other books on issues of science and theology are available from the American Scientific Affiliation Bookservice, c/o Mark Ahrenholz, Logos Bookstore, 510 Commonwealth Ave., Boston, MA 02215.

Theologians disagree on how to interpret Genesis, just as "geologists" at times disagree on how to interpret physical data. When the facts fail to rule out all but one reasonable hypothesis, scientists generally try to withhold final judgment while seeking new information and exploring all possibilities. Davis Young urges Christians to do that too.

Putting Our Heads Together

We have much to learn from other views, including those at odds with our own. We need to listen to believers from various traditions and to scholars from various fields. Such interactions are characteristic of the American Scientific Affiliation, a large Christian group within which Young has recently organized an Affiliation of Christian Geologists.



Davis Young (r) meets with other Christian geologists.

In 1984-85 Young joined others in a year-long study of "Creation and Cosmogony" at the Calvin Center for Christian Scholarship at Calvin College. That enabled him to explore more deeply what many Christian thinkers have said about the biblical doctrine of creation. His articles in two 1987 issues of *Westminster Theological Journal* and in the 1988 *Reformed Journal* show that scholars with a very high view of Scripture have held a range of opinion on what God's Word actually says about creation.

"On the Literal Meaning of Genesis"

Augustine of Hippo (A.D. 354-430), one of the greatest Christian theologians, urged common sense and openness. Since non-Christians may be well acquainted with natural phenomena, he wrote:

It is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up vast ignorance in a Christian and laugh it to scorn. The shame is not so much that an ignorant individual is derided, but that people outside the household of faith think our sacred writers held such opinions, and, to the great loss of those for whose salvation we toil, the writers of our Scripture are criticized and rejected as unlearned men....

The quotation is from a full English translation of Augustine's *On the Literal Meaning of Genesis* (by J. H. Taylor, S.J., Newman Press, 1982, p. 42). In that major work, Davis Young discovered many other themes applicable to today's controversies over "scientific creationism." In particular he found that Augustine considered the six-day framework of Genesis 1 to have nothing to do with the passage of time; instead it formed a logical structure for the biblical writer. Clearly, Augustine's reading of the "days of creation" cannot be seen as an accommodation to modern scientific discoveries.

It is evident that interpreting Genesis 1 is not simple, if a serious scholar like Augustine acknowledged difficulties in "seeing clearly the meaning of the sacred writer in the matter of those six days." Augustine stressed that he was striving for the most *literal* reading of the text, not figurative or allegorical one.

Davis Young admits that he doesn't agree with all of Augustine's interpretations. Yet he appreciates Augustine's approach to Scripture and to disagreements about Scripture. Augustine's devout example should help Christians approach the early chapters of Genesis "with far less dogmatism and far more humility than we often do."

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Thoughtful Worship

WHEN CHRISTIANS DISAGREE

This issue of **SEARCH** (No. 07) was prepared by Walter R. Hearn of Berkeley, California. Design and layout by ASA managing editor Nancy C. Hanger. Opinions expressed in **SEARCH** are those of individuals and may not be representative of the entire ASA membership. Scripture quotations are from the Revised Standard Version unless otherwise noted.

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