

GENERAL MEETING INFORMATION

REGISTRATION

Registration will be in the lobby of the Campus Center on the Nyack College Campus beginning at 2:00 PM on Friday, August 12. Registration fee for ASA members is \$20.00 and for non-members is \$25.00. All students are \$5.00.

ACCOMMODATIONS

Rooms are available on campus but do not have air conditioning or private baths. There are a few motels close to campus and a list will be sent upon request from the Elgin Office of the ASA. The nightly charge for rooms on campus is \$3.50 with half price for children under 8 years and free for children under 2 years. The daily rate for three meals is \$7.50. Meals may be purchased individually by registrants staying off campus.

MEETINGS

All meetings will be in rooms announced at the meeting. Unless there is an unusually large registration, all meeting rooms will be in the Campus Center.

PARKING

Parking is available on campus at no charge.

COMMUNICATION

Mail should be addressed to:

(Delegates' Name)
c/o ASA Meeting
Nyack College
Nyack, NY 10960

Phone messages may be made to:
(914) 358-1710

Information about the American Scientific Affiliation can be obtained at the literature table at the meeting or by writing the National Office at:

American Scientific Affiliation
5 Douglas Avenue
Elgin, Illinois 60120

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Official Program

THIRTY SECOND ANNUAL MEETING of the

AMERICAN SCIENTIFIC AFFILIATION

(Incorporated)

The American Scientific Affiliation is an association
of men and women who have made a personal
commitment of themselves and their lives
to Jesus Christ as Lord and Savior,
and who have made a personal
commitment of themselves
and their lives to a
scientific under-
standing of
the
world.

August 12-15, 1977
NYACK COLLEGE
Nyack, New York



FRIDAY, AUGUST 12

- 2:00 PM Registration
- 5:30 PM Supper
- 7:30 PM Opening Session Welcome
Address: "Conscience and Culture",
Kenneth Pike, Summer Institute of Linguistics

SATURDAY, AUGUST 13

- 8:00 AM Breakfast
- 8:30 AM Group Devotions
- 9:00 AM "Incarnation in a Culture", *Kenneth Pike*
- 10:00 AM Break

Session A — Geology Symposium

- 10:30 AM "Nature & Scripture: An Introduction to the Problem", *Richard Bube, Stanford University*
- 11:00 AM "Historical Development of Geology & Methods of Geologic Investigation",
Andrew Boettcher, University of Otago, New Zealand
- 11:30 AM "A Christian Evaluation of Geologic Methods", *Lawrence Mark, Bryn Mawr College*

Session B — Social Science Symposium

- 10:30 AM "The Relevance of Interpretationist Social Science to the Christian World View",
Ron Burwell, The King's College
- 11:00 AM "Ethology: Efficacious or Erroneous in Understanding Human Nature?", *George Jennings, Geneva College*
- 11:30 AM "A Socio-Psychological Interpretation of the Development of the Personality of Jesus",
Purnell Benson, Rutgers University

- 12:00 PM Lunch
- 2:00 PM Annual Business Meeting of the ASA
- 3:00 PM Break

Session A — Geology Symposium

- 3:30 PM "Deep Sea Drillings as Evidence for the Great Age of the Earth", *Daniel Wonderly, Oakland, Maryland* *2 cm / 1000 yrs*
- 4:00 PM "Radioactivity and Geologic Time",
Wayne Ault, The King's College
- 4:30 PM "Fossils and the Biblical Flood", *Frank Roberts, Delaware County Christian School*

natural law of growth + settling → 1200 ft thick
also followed of accumulation
alignments
in Sedgwick file.

Elin *Christie Hall*
5308

- 5:00 PM "The Human Race in Prehistory and Scripture", *Ralph Ellenberger, Nyack College in Anthropology file*

Session B — Social Science Symposium

- 3:30 PM Paper by *Russ Heddendorf, Geneva College* — Title not available
- 4:00 PM "Psychotherapy, Language, and the Christian", *Lois Propst, Ohio University*
- 4:30 PM "Depression: Biochemical Abnormality or Spiritual Backsliding?" *Walter Johnson, Psychiatrist, Hanover, Massachusetts*

Annual Banquet

- 6:30 PM Dinner
- 7:30 PM Address: "On the Relation of the Absolute to the Relative", *Kenneth Pike*
Optional session after address — Videotape of Monolingual Demonstration by Dr. Pike

SUNDAY, AUGUST 14

- 8:00 AM Breakfast
- 9:00 AM Special Worship for Conference Members and Families
- 10:00 AM Participation in Local Churches
- 12:30 PM Lunch

Session A — Contributed Papers

- 2:00 PM "A Lecture Tour Emphasizing Science and the Bible", *Harold Hartzler, Retired, Mankato State University*
- 2:30 PM "A Biblical Perspective on the Problems of Health Care Today", *James Jekel, Yale University School of Medicine*
- 3:00 PM Break
- 3:45 PM "A Biblical Perspective on Homosexuality and Its Healing", *Alfred Barrow, Psychologist, Decatur, Illinois*
- 4:15 PM "Is Creativity Compatible with Orthodoxy?", *Dennis Ridley, State University of New York, Geneseo*

Session B — Contributed Papers

- 2:00 PM "Ancient Linguistics and the New Testament", *Edmund Woodside, Pasadena, California*

- 2:30 PM "The Christian Computer Scientist and Ethics", *James Wetterau, Glendale, New York*

- 3:00 PM Break
- 3:45 PM "The Biblical Communication Devices",
Adrian Clark, National Aeronautics and Space Administration, Huntsville, Alabama

- 5:30 PM Supper
- 7:30 PM Special Interest Groups for Discussion: Complete List at Registration with Description

MONDAY, AUGUST 15

- 8:00 AM Breakfast
- 8:30 AM Group Devotions

Session A — Contributed Papers

- 9:00 AM "Christianity, Ontology, and Science",
Michael Peterson, Roberts Wesleyan College
- 9:30 AM "Dooyeweerd's Doctrine of Science",
Robert Knudsen, Westminster Seminary
- 10:00 AM Break
- 10:45 AM "Personal Knowledge: An Epistemology of Discovery", *Jim Neidhardt, New Jersey Institute of Technology*
- 11:15 AM "Mathematics, Abstraction, and Reality",
W. D. Stangl, Gordon College

Session B — Contributed Papers

- 9:00 AM "On Theories of Origins — Can We Get Together?", *Howard Claassen, Wheaton College*
- 9:30 AM "Evolution and B. B. Warfield", *Deryl Johnson, Lake Wales, Florida*
- 10:00 AM Break *in file*
- 10:45 AM "On the Probability of Life's Origin Through Natural Processes", *William James, Parker, Colorado*
- 12:00 PM Lunch
- 2:00 PM Radioactivity and Geologic Time: Session Involving Trip to Teledyne Isotopes, with Explanation and Introduction before Trip.



ABSTRACTS for the 32nd ANNUAL MEETING
of the
AMERICAN SCIENTIFIC AFFILIATION
NYACK, N.Y.-AUGUST 12-15, 1977

Wayne Ault, The King's College, "RADIOACTIVITY and GEOLOGIC TIME"

Geochronometry, the dating of minerals, rocks and artifacts by the natural radioactive isotopes contained therein, is very useful, accurate, and consistent. There are five totally independent methods, which are useful for somewhat different ranges of time from the origin of the earth down to the present, and each can be applied to various types of samples. The results of these consistent data of geochronometry are summarized in the Geologic Time Scale.

The Geologic Time Scale is a systematic and practical way of presenting a time line for the historical geology of the earth. It includes such phenomena as the different periods when the prominent mountain ranges were formed, the various times when our earth was partially covered by great ice sheets throughout its history, and the sequential panorama of plant and animal life on earth.

Some of the criticisms against these established techniques of geochronometry arise chiefly from ignorance and erroneous concepts.

Alfred Barrow, (Michael Campion), Decatur, Illinois, "WHEN WAS THE LAST TIME YOU HUGGED A HOMOSEXUAL? A BIBLICAL PERSPECTIVE ON HOMOSEXUALITY AND ITS HEALING"

The issue of homosexuality has become blurred and ambiguous not only in the secular academic community, but, also, within the evangelical Christian community. It is because of this that we must become more aware of what the homosexual is and why he is homosexual. Knowing this, we can then reach out and love the homosexual more effectively, making change a greater likelihood. Caution, however, must be taken in labeling certain people homosexual who have had an occasional erotic thought about a person of the same sex, or are impotent, frigid, or masturbate to excess. This may cause a self-fulfilling prophecy to take place. The scriptures know homosexuality only as a conduct and not a condition. A choice is required. The medical literature does not substantially support nor does Scripture support a genetic or glandular etiology of homosexuality. Even when an etiology rooted in social learning theory is considered, the individual can still be seen as responsible. There are four factors which distort a clear understanding of homosexuality. 1) A general hedonistic attitude prevalent in our society, 2) Open acceptance of homosexuality as a way of life, 3) Homosexuality satisfies man's basic nature of selfishness, 4) Homosexuality becomes a life style. Scriptures offer hope for healing of homosexuality in I Cor. 6:10, 11. Prevention must be considered, as well as, treatment. There should be two preventive thrusts: 1) Proper Biblical parent-role models, 2) Scriptural education about homosexuality. There are three steps in treatment of the homosexual: 1) A sincere desire to change, 2) Recognition of homosexuality as sin, 3) Discipling and follow-up of the homosexual who has changed.

Purnell Benson, Rutgers University, "A SOCIO-PSYCHOLOGICAL INTERPRETATION OF THE DEVELOPMENT OF THE PERSONALITY OF JESUS"

Evolution is the process through which God creates the universe and all that is in it according to physical and biological laws which God established. When God came down on earth in the person of Jesus, he did so through social and psychological laws of development which he ordained.

These are laws in the scientific realm which we may study today. Retrospectively we may study and apply these laws to the development of the life of Jesus. In the Christian faith

we also believe in God beyond experience, life beyond death, and in eternal rewards for those who are faithful to Jesus Christ.

In the view of science, miracles are extremely improbable occurrences of events which are scientifically possible. The life of Jesus is an extraordinary happening whose likelihood of occurring in a world of scientific laws is almost infinitesimally small. The life, and events in the life, of Jesus did occur, as testified to by many witnesses.

We discern Jesus' coming on earth as the outcome of ~~spiritual evolution of the ancient Jews~~, of extreme genes with which Jesus was endowed from agamogenesis, of loving parents, of rabbinical teaching, and of unusual spiritual needs and spiritual opportunities of Jesus' time. We regard spiritual events and principles in the Bible as infallibly true since they were given in Scripture under the leading of the Holy Spirit of God, who would not deceive us. The philosophical aspects of our faith were similarly given to us under the leading of the Holy Spirit, who today can again illuminate these same things for us.

Richard H. Bube, Stanford University, "CREATION"

The biblical doctrine of Creation is far more than an historical option; it is a fundamental necessity that drives a sharp wedge between competing worldviews and perspectives on the nature of man. It stands in unique opposition to naturalism on the one hand, with its denial of meaning and purpose in the universe, and pantheism on the other hand, with its denial of the difference-in-kind between God and the universe. Out of the many possible models for the human being, it singles out that one in which man is a creature like other creatures, and yet he is a creature made in the image of God and hence unlike other creatures. It establishes both the transcendence and immanence of God, and reveals that evil is not intrinsic to the created universe but is a moral aberration upon that good creation.

Ron Burwell, The King's College, "THE RELEVANCE OF INTERPRETATIONIST SOCIAL SCIENCE TO THE CHRISTIAN WORLD VIEW"

A fundamental part of any attempt to integrate the Christian world view with modern social science must involve an analysis of diverse philosophies of science. Contemporary views on the nature of the social sciences may be reduced to two ideal types: empiricist social science and interpretationist social science. Proponents of these two ideal types differ in their understanding of the nature and methodology of the social sciences. Empiricist social scientists commit themselves to a similar concept and method of science as found in the natural sciences. Interpretationist social scientists regard the social sciences as having significant differences from the natural sciences which may require different methodologies.

It is the contention of this paper that the Christian world view should operate as a selector in choosing among competing models of the social sciences. Further, it is argued that the Christian world view may be more rationally and effectively integrated with a view of the social sciences that is based upon the interpretationist ideal type.

Howard Claassen, Wheaton College, "ON THEORIES OF ORIGINS - CAN WE GET TOGETHER?"

All Christians should agree, it seems to this author, that belief in God as Creator of the universe is an essential part of Christian doctrine. This is assuming that those who believe God's activity that produced certain simple living forms a billion years before it produced man may legitimately be designated by the word, create.

Old south - Don't take theories of science too seriously. I wrote post (speculative)
 may
 1. ... say 2. ... law of ... opposed to it.
 2. ... ARBS, 41 B5 where battles for it is a scientific battle.
 3. Don't go to churches & popular debates but go for Nobel prize. It's brilliant young men with you.

Loss of "model": Scientific & actual ages man 25± fossils millions ±
God not waste fossils to fool us. Morad's paper (Scepter) - creation of all mass
& energy in the big bang. Not imply age greater than actual age.
created with appear age. (Old earth - allowed that young earth may be true). God's plan
in fossils. Boardman - is evolution part of my Christian faith? 3-
Olson: Science appears scientific, but actually is exegetical. Starts at exegesis of Genesis.
The "young earth" Christians and the "creation over a long time span" Christians might
respect each other more as Christian brothers and sisters if attitude changes occurred
along the following three lines.

with - appear
age of earth
from sci. idea.
but spirits
Pain - all
mixed the
appear of age.
possibility

1. If everybody came to realize that biological evolution is not a theory of origins. It is a theory about development of matter already existing. Biological evolution does not at all help the atheist who feels uncomfortable about sudden beginnings that might imply a Creator. The "Big Bang" cosmological theory does bother the thoroughgoing atheist - he would feel more comfortable about some continuous creation-of-matter theory.
2. If those who accept creation over a long time span would take the general theory of evolution less seriously than they often have. Processes, like random mutations and immediate testing for survival in the environment, that are demonstrable and useful in biology should be accepted, but extrapolations to what actually happened in the remote past are speculative at best.
3. If "young earth" Christians would realize that, since they must resort to creation-with-appearance-of-age at certain points (e.g., how can we see distant stars?), they might better apply Occam's razor and resort to a simple theory that allows a great "scientific age" alongside a "revealed age" that is small. At this point the "creation-over-a-long-time" Christians might help by recognizing the creation-with-appearance-of-age view as a respectable one.

Adrian Clark, Toney, Alabama, "THE BIBLICAL COMMUNICATION DEVICES"

Some of the astronauts felt closer to God while on the Moon. Irwin said that he could ask technical questions and obtain specific answers while on the Moon, indicating that the Moon environment may have been better than earth for communicating with God. This would please communicating with God on a scientific basis like communication between humans is scientifically understood.

Suppose some device is required for reliable communication with God. What evidence of communication devices is found in the Bible?

Moses used the Ark of the Covenant. When God spoke to Moses from between the wings of the Cherubim above the Mercy Seat, a light was visible indicating some energy source for the communication.

Elijah had a mantle which was passed to Elisha, who then had unusual powers.

Jesus began his ministry in Canaan of Galilee after being baptized in the River Jordan. He received his communication device in the form of a dove, called "Holy Spirit" which spoke audibly to the spectators. Throughout Jesus' life, he always had good contact with his "Father", but his disciples had no contact until they received the "Comforter".

After Christ ascended, the disciples and others received the same device in the form of cloven tongues of flame which touched them. They were then able to communicate much better, even being able to speak in foreign languages.

Simeon recognized that the disciples had devices and offered to buy one.

The devices apparently had more than communication ability accounting for miracles and were used to kill Ananias and Sapphira. It may have been misused since the special powers of the early Christians terminated with the death of the first generation of Christians. This device may have been an implant located around the head or shoulders.

H. Harold Hartzler, Mankato, Minnesota, "A LECTURE TOUR EMPHASIZING SCIENCE AND THE BIBLE"

Early one Sunday morning in February, 1976 I had a vision. The Lord was asking me to do something for him quite different from my college teaching of the past 41 years.

My first move was to send letters to a number of my Christian friends seeking their advice. I was greatly encouraged by the many favorable replies which I received. In fact, two of my ASA friends stated that they were thinking of doing something similar to that which I had been planning.

Immediately after my retirement at the end of the spring quarter of 1976, I started to Pennsylvania to give a number of lectures on various aspects of science and the Bible. Some of my lecture topics are: Evidences of God's Design in Astronomy, The Conflict between Science and the Bible, The Heavens Declare the Glory of God, Spiritual Truths in Mathematics, Science and Biblical Miracles, How the Study of Science has increased my Faith.

To date I have given approximately 100 lectures to churches, schools, colleges, and service groups in various parts of the country from Pennsylvania to California. It is my intention to continue this service for the Lord until the end of 1977.

Some advice to others, who may be contemplating a series of lectures of this kind, will be given in this paper.

Russell Heddendorf, Geneva College, "THE SCIENTIST AS SUBJECTIVE AGENT"

Recent studies emphasize that scientists are less objective in their work than generally assumed by either themselves or the public. Unless we recognize the cultural, psychological, and social factors influencing a scientist, we do not clearly comprehend the nature of scientific knowledge.

Social science has always been aware of these subjective factors and has tried to build them into its methodology. Physical scientists need to increase their awareness of these unconscious motivations and compensate for them in their research.

William E. James, Parker, Colorado, "ON THE PROBABILITY OF LIFE'S ORIGIN THROUGH NATURAL PROCESSES"

Is there evidence that God over ruled natural laws?

Ribonucleoside 12.5; 74 simple bridges. 10⁸⁰ atoms in universe.
It is commonly believed by modern theorists that the "miracle" of life could have occurred through natural processes if there were enough time for it to happen. It is assumed that functional biological molecules could have come together in billions of years. By knowing the number of molecules in a specified space, the diameter and velocity at which they travel, the number of molecular collisions per second can be calculated. Using this approach, it is possible to calculate the total number of molecular collisions in the primordial sea in billions of years. This would provide an upper limit on the maximum number of molecular combinations that could occur during the aeons of time required by the evolutionary theory.

It is then possible to compare the maximum numbers of combinations that could occur against the probabilities of protein and DNA sequences occurring through natural processes. Such an analysis strongly suggests that the origin of life could not have occurred without intelligent creative design and that time is not an important factor.

*1 mill fem 1 cell
10 " " 1 cell
10²⁵ - molecular collisions - upper limit. 25 chance of 1 protein by random 10⁴²⁰
approx 250,000 - 2.5 mil typewritten pages. Bigger than encyclopedia (same in)*

James Jekel, Yale Medical School, "A BIBLICAL PERSPECTIVE ON THE PROBLEMS OF HEALTH CARE TODAY"

In every field of human activity we are today facing one common problem - the problem of adjusting our social order to the altered conditions produced by a revolution in technology.

C. E. A. Winslow, 1933

Today the cost of medical care is rising much faster than the general rate of inflation, and we now spend almost 10% of our gross national product on medical care. Yet our health statistics are far from satisfactory, and the public is increasingly rebelling against what is seen to be excessively costly care, and its inconvenience. Thoughtful people are now saying that current trends cannot continue and are questioning many of the basic assumptions upon which much of the medical activity of the past 3 decades has been built. Both those who are sympathetic to medicine, such as Dubos, and those who are not, such as Illich, have raised difficult questions for the medical practice today, including the assumption that most of our current level of health is due to medical care.

It may be shown that through a study of the history of medicine, and of evaluative studies of medical care effects, one must conclude that the factors primarily responsible for the level of health in a society are the nutrition, environment, and behavior of that society. In other words, health is a product of our way of life and, therefore, has broad social roots. Medical technology does have a role to play, but is better conceived as that which provides the fine tuning of our level of health than as what selects our health channel. Indeed, many of our health problems are iatrogenic, and come from an unrealistic trust in, and dependence on, biomedical technology, which, if not carefully controlled, produces dehumanization, ethical problems, rapidly escalating costs, and a weakening of cultural patterns that reinforce healthful behavior. The kind of technology that has to date had the greatest impact on positive health includes the technology of nutrition (including agriculture and animal husbandry), environmental sanitation and quality, and of individual and social behavior.

The biblical perspective on health comes from an understanding based on man's obligation to become holy, as God is holy (Lev. 19:10). A holy walk is defined in Lev. 10:10 as keeping oneself from that which is unclean. The fundamental sicknesses of mankind have always been spiritual at their core, and they continue to be. The biblical emphasis is more on the quality of life, than upon nostrums and cures, and the biblical idea of healing is far more profound than the idea of biochemical manipulation through medications.

Epidemiologic research has helped us to understand many of the relationships between nutrition, environment, behavior, and health. A few selected changes in each of these, if widespread, would have a far more positive effect on the health of our nation than the advance of biomedical research have had in recent decades. The biblical perspective supports healthful living and preventive care, in a family context, which, if applied would provide answers to many of the health questions raised above.

George Jennings, Geneva College, "ETHOLOGY: EFFICACIOUS OR ERRONEOUS IN UNDERSTANDING HUMAN NATURE?"

The recent surge in ethological investigations and writings makes imperative some critical reaction and evaluation by Christian scholars in general and Christian anthropologists in particular. The assumptions held in ethological investigations must be challenged and their conclusions reviewed. Further, it is proposed that there is not only a questionable philosophical base in the ethological approach for interpreting human behavior---as, for example, its common identification with "naturalism" as the presuppositional foundation---but it also utilizes a scientifically-repudiated methodology, that is, the employment of

sophisticated reductionism in elucidating basic human behavior or nature. The whole ethological structure, with its plausible but misconceptual claims for providing cognizance of mankind, can be seriously challenged by evidence from psychological, ethnological, and biological data as briefly adduced in this essay.

conflict now between philosophy & sci.

Deryl Johnson, Lake Wales, Florida, "EVOLUTION AND B. B. WARFIELD"

from 1854 family *warehouse of Calvinism*
B. B. Warfield was a prominent Calvinist theologian who taught at Princeton Seminary from 1887 until 1921. His early interests were in science and, by the time (1868) he began college, he had read Darwin's Origin of Species and was convinced of its truth. Although he later had doubts whether the evidence was sufficient for proof, he still felt that it was his task as a theologian to so relate evolution to Christianity that should a student become convinced by scientific evidence that evolution were true, he would not feel, to be intellectually honest, he would have to give up his Christian faith.

Warfield held that evolution with certain modifications could be made compatible with Christianity. For example, evolution of the plant and animal world could be accepted as compatible with Scripture. Genesis 1 and 2:7 could legitimately be interpreted in an evolutionary way, but he found the narrative on Eve to be a stumbling block to that interpretation. Later, however, he argued that mutations would make it possible for the body of man to evolve from a lower animal apart from divine intervention. However, he insisted that such a divine intervention would be required for both the origin of the human soul and matter, and possibly for the origin of life. In addition, Warfield held that God should be thought of not only as intervening creatively at these key points but also as guiding the whole process of evolution.

more in progressive line with evolution rather than character evolution esp. for man
working hypothesis
God broke in to make ~~the~~ human soul → as human and
1. absolute creation supplies original material.
2. mediate - introduces something new in nature. God works by law.

Walter C. Johnson, Hanover, Massachusetts, "DEPRESSION: BIOCHEMICAL ABNORMALITY OR SPIRITUAL BACKSLIDING?"

something specifically new
human body - as by mutation from brutish man from dust (pre existing matter) after nature of the separated Adam & Eve
Of all the ills that afflict humanity, mental depression is one of the most common and universal involving people of all ages, all occupations, and all strata of society. Possibly as many as eight million individuals per year suffer from this malady, and as many as 50,000 to 70,000 suicides occur per year in the United States.

There are different ideas of the nature of this affliction which have been held during the course of human history and different theories of causation are held today. Many Christianspeople, including numerous ministers and pastoral counsellors are of the opinion that depression is purely a spiritual problem and is a direct result of the sufferer's sin. For instance, Dr. Jay E. Adams insists that depression is the result of the counselee's sin and that the sole remedy of the problem is to bring him or her to repentance by the effective use of the Word of God. Dr. Tim LaHaye emphasizes "spiritual therapy" for the relief of depression. It may be conceded that in some instances spiritual problems such as unconfessed sin, a sinful life pattern or the utter alienation and hopelessness of life without Christ, are important factors in the production of depression. Psychological causes (personal losses real or imagined, early childhood trauma, etc.), and adverse factors in the patient's environment may also contribute to the production of this condition. However, there is evidence to show that in most cases depression is a biochemical disorder. This biological disturbance is associated with a diminished concentration of catecholamines such as norepinephrine in the region of synapses in certain parts of the brain.

Most patients respond satisfactorily to treatment of the different types of depression with antidepressant drugs (tricyclics or monoamine oxidase inhibitors). In addition supportive psychotherapy emphasizing current problems and biblically oriented counselling should be offered to the patient.

Robert D. Knudsen, Westminister Seminary, "DOOYEWEERD'S DOCTRINE OF SCIENCE"

Science has its own sense. That does not mean, however, that it is autonomous. "Doing science," together with all other human activities, must be understood to have a religious foundation. It must be clear, furthermore, what is meant here by "religion," namely, that which underlies and gives direction to every terrain of life without exception.

Science, therefore, is religious in its very character as science. What characterizes science as science, forming theoretical concepts, is religiously determined. Granted that it has a religious foundation, scientific concept-formation must proceed, however, according to the strictest scientific canons. Whatever else is of necessity involved must find its place within this scientific context.

Reflection upon the religious foundation of science will proceed by way of a reflection on man in his integrality and wholeness, on the one who acts in community in ways that are variously qualified. In each case the religious orientation will be manifest in a fashion peculiar to the sphere in which man acts. In science, this religious orientation will become manifest in reflection on what itself is a process of thought, namely, the process of theoretical concept-formation.

This approach was paramount in Dooyeweerd's thought from the beginning. His thought always embraced, therefore, a transcendental critique, in 1) the negative sense of tracking down the presuppositions of apostate or synthesis thinking; or 2) the positive sense of showing, by way of argumentation, the religious character of all thought. With variations, these two directions were always present in his philosophy.

Lawrence Mark, Bryn Mawr College, "A CHRISTIAN EVALUATION OF GEOLOGIC METHODS"

During the past decade metamorphic petrology has contributed much to the concepts of plate tectonics and the development of earth history. Recently developed tools and techniques have produced an abundance of data relating to the tectonic history of the earth. The tools and techniques are common to both Christian and non-Christian investigators. The data of experimental studies are applied to observations of natural assemblages. The concept of Uniformitarianism is the assumed rationale for applying present-day experimental results to events of presumed antiquity. The Uniformitarian principle, while accepted as accurate, is not complete. Since geologic data deal with processes and results, the law, or principle, of Uniformitarianism cannot be used to establish the ultimate beginnings or endings of our Earth. As a man-made description it is limited to man's own interpretation of observations and may, or may not, accurately represent natural processes.

Special revelation gives man additional data enabling him to formulate a more accurate perspective of the world in which he lives. Man is thereby able to recognize the value and the limits of Uniformitarianism. God has revealed Himself as a personal Creator maintaining His created universe so that man may learn to trust God and live to bring glory to Him. Special revelation reveals that man's faith, as a gift from God, rests in a personal relationship with God, not in man's presumed interpretive ability.

W. Jim Neidhardt, New Jersey Institute of Technology, "PERSONAL KNOWLEDGE: AN EPISTEMOLOGY OF DISCOVERY"

Two Biblical attitudes, faith in the sense of deep commitment and love in the sense of being self-giving, are both seen to be essential parts of any successful human activity whether the endeavor be in everyday human relations, religious experience, artistic creation, philosophical speculation, or scientific work. Faith is seen as a leavening component of all human experience for as Michael Polanyi has ably pointed out, all human acts of discovery are rooted in a common structure of tacit commitments. Accordingly, the basic presuppositions of Polanyi's epistemology are summarized and considered in the context of scientific knowing. If tacit, personal commitments are a necessary part of the creative process in science, then analogous acts of tacit commitment are present in the more person-centered areas of human knowledge as art, philosophy, and religion.

Michael L. Peterson, Roberts Wesleyan College, "CHRISTIANITY, ONTOLOGY, AND SCIENCE"

The orientation of twentieth-century philosophy of science has been predominantly Humean. Although Humean concepts tend toward skepticism and reductionism, Christian philosophers of science have too frequently accepted this interpretation of science. They have often attacked the offensive positivism which is more or less the view of knowledge of the contemporary Humeans (e.g., Hempel, Carnap, Ayer). However, there are more subtle and more profoundly dangerous ontological presuppositions which have been either unwittingly accepted or unacceptably replaced.

The Humean ontology of science generates inveterate problems and paradoxes (e.g., the problem of induction, the problem of law-likeness, etc.) which even Christian philosophers have begun to take as ontology-independent problems. This is an atomistic event-ontology which provides no reason why nature manifests intelligible patterns or why scientific laws possess a kind of necessity. There is a very recent and quite promising non-Humean alternative which is gaining acceptance among prominent philosophers of science (e.g., Madden, Harré, Chisholm). This is a neo-realistic thing-ontology which affirms that the particulars studied by science have stable natures which are manifest under certain conditions. A comprehensive alternative of this sort has been desired by Christian philosophers of science, but has not been adequately formulated. Attempted formulations have mistakenly stipulated causality to be a mysterious force between two events, or have made inductive inference rest on a regularity of nature doctrine so broad that too much is proved, or have made other similar mistakes.

This neo-realistic alternative rebuts the Humean view and dissolves the problems under consideration by postulating the natures of particulars (in any given science) as legitimate grounds for inductive generalization, as the justification of lawfulness, as manifest in causal activity, and so on. Furthermore, this ontology of science is entirely compatible with Christian doctrine of an intelligible order of things with determinate natures.

Lois R. Propst, Ohio University, "PSYCHOTHERAPY, LANGUAGE, AND THE CHRISTIAN"

Heretofore, most psychotherapists have ignored the conscious philosophical perspectives of their clients, assuming instead that the major determinant of psychiatric disorders was an unconscious conflict. Recent work by the cognitive theorists (Schaachter, Beck, Meichenbaum, and Ellis) has suggested, however, that the conscious thoughts and philosophical perspectives of the client may be the principle determinant of his psychological state.

The goal of therapy within this framework is two-fold. First, the individual must be made more fully aware of his actual philosophical perspective (insight). Recent work (Bandler and Grinker) suggests that the rules of linguistics may be used to give the client clues about the assumptions and meaning underlying his verbalized statements.

The second phase of therapy involves an evaluation of the adequacy of the individual's underlying philosophical perspective. At this point, self-conscious Christian therapists will find themselves at odds with the secular theorist. A number of Christian writers (Bladmires, Van Til, Schaeffer) have emphasized the radical distinctions between a philosophical perspective constructed from Christian presuppositions and that constructed from secular presuppositions. It would therefore be inadequate for the Christian therapist to confront his clients' presuppositions via the philosophical perspective of stoicism, the philosophy currently being used by most secular cognitive therapists. Following this guideline, the writer has found that confronting the presuppositions of depressed Christians with the presuppositions of Christianity has been very therapeutic.

Dennis R. Ridley, SUNY at Geneseo (Nathan A. Schroer), "CREATIVITY AND ORTHODOXY"

"Is creativity incompatible with orthodoxy?" Typically, such a question coming from an orthodox believer can be expected to be followed by an attempt to refute unwelcome evidence. However, the several studies connecting creativity with heterodox religious beliefs need to be taken seriously. An analysis of the psychological requirements of scientific creativity, suggests that such a connection is not inevitable, and that a compatibility exists which is usually masked by inadequate understanding of both faith and science.

Adopting a "decision theory" approach, scientific behavior may be regarded as a series of decisions as to whether particular propositions are or are not correct. Two mutually incompatible strategies are possible. One is the counsel of caution: "Avoid error, at all costs." This strategy fosters the correct use of conventional methods and concepts, but few new discoveries. The second strategy is "Discover truth by any means." Both values are, of course, important. Kuhn and others suggest that "extraordinary science" demands a greater willingness to risk error and uncertainty to attain truth than is generally encouraged by an exclusively positivistic understanding of science. Furthermore, psychological study of eminent scientists reveals skepticism of received viewpoints combined with openness to novel perspectives... a direct contradiction of the stereotype of the meticulous scientist preoccupied with precision and correctness.

Polanyi views scientific discovery as only one example fitting into a dynamic conception of knowing. In his post-positivistic view there is a built-in uncertainty in knowing which is "akin to the dynamism of all human faith." An orthodox believer is familiar with the scriptural injunction to "work out your own salvation with fear and trembling." Hence, the element of risk, uncertainty and challenge which can constitute part of a believer's experience also affords a kinship with eminent scientific creativity. When these dynamic similarities are appreciated, traditional antagonism between faith and science may be, to some degree, alleviated.

Frank Roberts, Delaware County Christian School, "FOSSILS AND THE BIBLICAL FLOOD"

most fossils are marine 10 of thousands / ~~one~~ terrestrial

It was the recognition of the significance of sedimentary rocks and their fossils which led to the rejection, in the late eighteenth century, by thinking people, of the biblical interpretation that God formed the earth in six literal days about 4000 BC. The obvious similarities between sedimentary rocks and the layers of sediments which are forming today led to the understanding that sedimentary rocks were formed in the past in the same way that sediments are forming today. The similarities between fossil assemblages and modern marine ecology moved geologists to interpret fossils as ancient marine forms which died as sea creatures do today.

single year of flood not explain what found. *Gen. 7: 21-23 what died in flood (land), but only part of fossils correspond to this description. so unoriginal to say fld geol or deluvialism. If flood then all should be mixed, not get fine sediments in Noah's flood.*

The modern religious opinion that both fossils and sedimentary rocks are the result of events accompanying a worldwide flood described in Genesis was never widely held by the scientific community. It was unearthed by Price in the twenties, but not widely discussed until the efforts of Morris in the sixties.

That sedimentary rocks and fossils could not possibly have anything to do with the Noaic Flood is seen in the following lines of evidence:

- 1) Almost all fossils are marine creatures, which is not what the Bible says died in the flood. (Genesis 7:21-23, "All in whose nostrils was the breath of life, of all that was in the dry land, died.")
- 2) Fossil assemblages resemble modern marine life, not at all the Noaic "world that was".
- 3) Fossils are usually found in a rather good to excellent state of preservation, not appearing to have been destroyed in any world-wide catastrophe.
- 4) There is a very consistent order of fossil remains, from oldest to youngest. Fossils are not mixed or sorted in any way explainable by a single deluge.
- 5) Sediments are of such a nature that there is no way they could have been formed in a single one year inundation.

fossils accumulate in a reducing environment but not in an oxidizing environment. as a peat bog (deep layers) more commonly seen by people

W. D. Stangl, Gordon College, "MATHEMATICS, ABSTRACTION AND REALITY"

Mathematics involves abstraction from reality and the creative input of man. Geometry is an area of mathematics which is sometimes thought to deal with the truth about reality. However, points and lines are not to be identified with any physical object. Geometries, Euclidean and non-Euclidean, are seen to be really abstractions which may model various distinct aspects of reality. Hence, the connection between reality and the abstractions of mathematics includes a two-way street in which reality can motivate the study of certain structures, and the study of mathematics can enlighten our understanding of reality. Another illustration of this is found in the mathematical concept of infinity. God is conceived as infinite, and so the study of infinity in mathematics is likely to yield some insight into the nature of God. Mathematics, then, is seen as the study of structure, abstracted from the ordering of our perceptions of this reality.

James Wetterau, Glendale, New York, "THE CHRISTIAN COMPUTER SCIENTIST AND ETHICS"

In a world of ever larger computerized record systems, the Christian's responsibility becomes more important. Particularly as one involved in the field of data processing, the concern for ethical behaviour must be addressed.

In the area of system design, the degree of integrity required can be designed into the system. Protection of data is a key design criterion which a Christian engaged in design needs to care for. Does this impose a greater degree of responsibility than a non-Christian doing the same job? I believe it does. Related to this is the proliferation of systems and terminals with increasingly easy access to information about individuals. A systems designer should seek to restrain access to the minimum required on a "need-to-know" basis. Many types of data protection are possible. Some of these are password security, encryption and data field protection.

Secondly, if questions of data integrity and security are not satisfactorily resolved, what ought the Christian to do? A recent ethics quiz given widely in the dp community demonstrated a widespread concern for these matters. Several potentially conflicting responsibilities come into play here. One is the responsibility to one's employer. I feel that this involves complete honesty, as a minimum, and requires that any duplicity or other security problem be brought to attention. This can introduce conflict with responsibility to one's own conscience and indeed to God if an employer is non-responsive to the problem.

In addition, as a Christian citizen, there is the question of responsibility to the public. The degree to which one ought to commit his position and risk his livelihood is an area of increasing concern. In the world of data processing, the decisions sometimes appear ambiguous, but require just as much serious consideration. The Christian must neither shun his responsibility nor adhere to the world's standards. A Christian can help to enlighten the public as to the increasing impact of computer systems on their lives. Probably no other single technology will so alter our lives in the last quarter of the twentieth century. Thus this role of guidance is no small task. Finally, the Christian can set a high moral standard as he serves his Lord while seeking to instill a high degree of restraint and respect for the persons effected by the systems with which he is involved. This concern can be reflected in the areas of system design, system operation and system use. The federal government has sought to lead the way in this area with the Privacy Act for government records. The Christian has the opportunity to help private systems demonstrate at least this much concern as they are implemented. Indeed, at this point in the area of systems development, when so much is not yet clear, the Christian can indeed be the "light of the world" in an area which needs further illumination backed by a firm moral compass.

Daniel E. Wonderly, Oakland, Maryland, "DEEP SEA DRILLINGS AS EVIDENCE FOR A GREAT AGE OF THE EARTH"

The present decade has seen great advances in oceanographic exploration and discovery. The ocean floors are now yielding fabulous amounts of information concerning some of the earth's past history. Progressive accumulations of sediments on the ocean floors have left an important record of the past, which is very meaningful for Christians. Near the continents large amounts of land-derived sediments accumulate rather rapidly, but farther out in the ocean we find great expanses of floor covered by purely oceanic sediments. These have accumulated independently of the sediments that are swept off the land masses by erosion. In major parts of the ocean floor the covering of oceanic sediments is composed almost entirely of the shells and other skeletal parts of microscopic animals and plants which live in the surface waters. When these organisms die their minute skeletal parts slowly sink to the ocean floor, forming as much as 25 mm of sediment thickness per 1,000 years in areas where biological growth conditions are the most favorable. A requirement for such deposition is very tranquil water, because the particles are too small to settle out of rapidly moving water.

A major source of our knowledge of these sediments has come from the Deep Sea Drilling Project, sponsored by the National Science Foundation and cooperating institutes. Between the years 1968 and the end of 1976 the drilling ship of this project made 49 cruises which included all the oceans of the world. Many of the drill holes penetrated to a depth of over 3,000 feet into sediments of the sea floors, and recovered high quality, intact cores from these depths. Drillings in the Pacific have revealed that large areas of the floor are covered with from 1,000 to 2,000 feet of skeletal sediments from the microscopic organisms which have lived and died in the waters above. By using the drilling records from drill holes where land-derived sediments are absent or nearly absent it is possible to make useful estimates of the length of time required for laying down the entire sedimentary floor covering.

In the Mediterranean Sea oceanic sediments were found overlying layers of shallow-marine evaporite minerals which were deposited when this Sea was much shallower than now (during Late Miocene times). Beneath the evaporite layers, the normal, fossiliferous marine sediments continue to greater depths, indicating a long history for the Mediterranean even prior to the late Miocene, shallow, evaporative phase.

Edmund R. Woodside, Pasadena, California, "ANCIENT LINGUISTICS AND THE NEW TESTAMENT"

Within the scope of their great scientific, philosophical and literary traditions, the Greeks analyzed, defined and explained the components of their language. Protagoras of Abdera, though more renowned as a Sophist, was the first to use the term gender in the grammatical sense. However, it was at Alexandria that Greek grammar was first codified. ΤΕΧΝΗ ΓΡΑΜΜΑΤΙΚΗ by Dionysius Thrax came to be considered the standard textbook, either in the original, Latin or other translations. From it came the conventional technical terms of grammar - i.e. ΠΩΣΙΣ - case; ΕΝΙΚΟΣ - singular; ΠΛΗΘΥΝΤΙΚΟΣ - plural; ΟΝΟΜΑΤΙΚΗ nominative, etc. It dealt mainly with the accidence and inflection of Greek words.

There was a later flourishing of the study of grammar in Alexandria in the late 2nd century AD. Prominent at this time was Apollonius Dyscolus. Of his works, there remain four books entitled ΠΕΡΙ ΣΥΝΤΑΞΕΩΣ. Though not a creative originator, he was very systematic in his summary of syntax. The designation Dyscolus (ΔΥΣΚΟΛΟΣ) indicated he was "hard to please", which perhaps was to our benefit.

These writings established the study of grammar and set the patterns and descriptive vocabulary of linguistics down until the modern times. Much yet still remains in our present-day grammars in spite of more sophisticated refinements.

It is noteworthy that the center of these studies was Alexandria, the birthplace of the Septuagint and some of our earliest extant NT manuscripts. These labors, though performed by pagans, provided the means for mastering the original NT text after Hellenistic Greek ceased to be a spoken language. These writings gave the framework for use in NT translations and exegesis down through the centuries.