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For Your Calendar:

The October 1-3, 1982 Conference on "The Meaning of Health" will be held at Villa Redeemer Conference Center in Glenview, Ill. What we mean when we use the word health will be examined from the aspect of nursing (Dr. Margaret Anne Schlientz, Comstock Park, MI.), of medical insuring (Robert Morey, Jr., Tiburon, CA.), of psychology (Dr. David Munz, St. Louis, MO.), of administration (Sr. Joan Winkler, Madison, WI.), of theology (Robert Brungs, S.J., Director: ITEST, St. Louis, MO.). Further information will be sent later.

The March, 1983 Workshop is still in the planning stage. The topic will be the seemingly increasing evidence of the revival of the science-faith conflict.

The October, 1983 Conference will deal with the Role of Christian Scientists in the science/faith area.

If you have any suggestions for speakers and essayists for the 1983 meetings, please inform Fr. Robert Brungs, S.J., Director: ITEST, 221 N. Grand Blvd., St. Louis, Mo. 63103.

CREATION AND EVOLUTION

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The current argument over the teaching of "Evolution" versus "Creation Science" in the public schools of Arkansas is a ridiculous attempt to reconcile two theories that are mutually exclusive. If both are taught, the experience can only confuse students, and will probably not serve any constructive purpose.

There can be only one truth. Therefore, the two theories currently accepted cannot both be right. The "Evolutionists" believe (and I use the term advisedly) that matter organized itself into successively more complex arrangements until the diverse and intricate forms of life we have today came about. The "Creationists" adhere strictly to the Biblical account of the formation of the world and of life in Genesis. Both theories contain aspects of the truth but also leave out substantial portions necessary for a reasonable explanation of what happened, and what, in fact, is still happening.

I will here make no attempt to discredit the observations of the evolutionists with regard to such things as fossil records, carbon dating, etc. It is their theory of the process behind evolutionary development, which is in error. An essential element in their theory is that small molecules joined to form larger molecules which over a period of time coalesced into proteins and eventually into living cells. As a demonstration, Carl Sagan (1) reported on experiments performed at Cornell University where mixtures of hydrogen, ammonia, water, methane, and hydrogen sulfide, were converted into complex organic tars by electrical sparks. What Sagan and other evolutionists have failed to observe is that these experiments were not accidents - they were conducted by scientists having intelligence, skill, and free will. What they have really demonstrated is that these steps in the evolutionary process could have been orchestrated by a superior being - they have not proved that the reactions could have taken place without such help.

As a chemical engineer, I have spent years studying the mechanisms by which chemical reactions take place and are controlled. The synthesis (building) reactions such as that described above require carefully controlled conditions to yield the product desired. By contrast, decomposition (destructive) reactions tend to occur spontaneously. A house can be destroyed by fire accidentally in a few minutes; yet it takes months of planning and construction by intelligent and skilled artisans to build one.

This is the fundamental error in evolutionary teaching - matter does not organize itself. In fact, there is a substantial body of scientific evidence to the contrary. Newton, Joule, Clausius, Carnot, and others noted that the natural tendency of matter is to proceed from an ordered condition to a disordered condition. Their work led to the formulation of the Second Law of Thermodynamics, which places fundamental limits on all natural processes. It governs the flow of heat from warmer to colder substances, the flow of fluids from higher to lower pressures, and the tendency of pure substances to mix and contaminate each other.

All of our personal observations bear this out: metals tarnish and corrode, glass breaks, milk spills, cloth tears and wears out, wood rots, paint peels, hot coffee cools, pipes leak, accidents and fires happen. All of these are examples of matter proceeding from order to disorder. We can wait billions of years and these processes will not reverse themselves. The only way we can see them reverse is by recording them on film, and playing the film backwards. What we would observe would be the reversal of time.

The processes themselves are irreversible. To return to the initial state, one must proceed by another route. Order can be restored by the application of intelligence, skill, and work. We can polish the metal, paint the house, warm the coffee, clean up the milk, etc. Consider that most of our work is dedicated to restoring or creating order in our surroundings, from making beds to washing dishes to maintaining our house and car. Matter then can be organized by a person, although it is incapable of organizing itself.

Observe that all living beings are capable of ordering. Trees collect minute concentrations of carbon dioxide and water vapor, converting them into food, fuel, and fiber. This is the opposite of the combustion process and is therefore ordering, whereas combustion is disordering. Living things grow, heal, and reproduce, all of which are ordering processes. Chickens convert grass and seeds and gravel into eggs and meat; cows convert hay and water into milk and beef. They do not perform

these acts consciously however, any more than we grow and heal by conscious effort. Animals are programmed, much as a computer is programmed to perform certain tasks; they have limited intelligence and skill, and no free will.

Sagan described this programming: "Every lifeform on Earth has a different set of instructions, written out in essentially the same language".(2) He fails to acknowledge that there had to be a writer, however. It is as if someone were to discover a computer, yet fail to ask who designed or programmed it. Now a computer can only do what the designer intended, and the functions for which he programmed it. The designer and programmer then must have an intelligence that is orders of magnitude beyond that which is programmed.

The mechanisms by which living beings function are more complex than most of us realize. Sagan described the elaborate process by which food is converted into energy in the human body. He then commented: "Eating an apple is an immensely complicated process. If I consciously had to remember and direct all the chemical steps required to get energy out of food, I would probably starve (but)DNA knows." (3) He has attributed an intelligence greater than his own to a part of him - DNA (deoxyribonucleic acid, the basic building block of cells). The intelligence in DNA is not a conscious intelligence, as in our brains - it is a programmed intelligence. That this intelligence is far greater than our own is true, but it belongs to the Creator who did the programming.

Another keystone in the theory of evolution is the process of "natural selection." Sagan introduces this subject by showing how desired strains of cattle and corn were produced by artificial selection. (4) Agronomists consumed or destroyed those that were less-desirable, and encouraged the more-desirable to reproduce. For Sagan it is a small step to the process where "nature" does the selecting, given enough time. Here again, he misses the point that selection is accomplished by persons having intelligence, free will, and a purpose. "Nature" is not a person.

In his book, "Miracles," C.S. Lewis points out that "nature" is incapable of independent action. All events are caused by agents having free will - nature only reacts to them in ways governed by a fixed set of laws. There is no doubt that the process of natural selection does take place. We see it in the insects that survive applications of a pesticide, reproducing new generations that are progressively more immune to that pesticide. The selection process is not brought about by an impersonal "nature" but by a personal creator.

A parallel can be drawn between the processes of creation and evolution, and the process by which a man designs, builds, maintains, and modifies a house. A man needs a plan, work, skill, calculations, and new material to build. Over the years, wind, weather, and accident take their toll. A house that is not maintained deteriorates rather quickly. Repairs require additional work, skill, and more new materials. A house also needs to be adapted to changes in technology and the economy . . . A house that was once fired with wood, then coal, then oil, may now be heated with solar energy. The owner or owners adapted the design to the changing times.

All these things are true of living beings as well. Each was created, maintained, and repaired as necessary, by the same skillful person. When adaptation became necessary, this was also carried out. Evolution is a very real and ongoing process. But it does not happen by itself - it requires the action of the Creator.

Creation is also a very real and ongoing process. To demonstrate, consider all the effort and care that an artist puts into his work. He is said to be creative. Yet no matter how much skill he commands, or how great are his resources, he still cannot make a living being, nor even a small part of one. He cannot make an eye or a finger, much less assemble all the parts into a living, breathing, thinking person. Once as I watched a pig being slaughtered, I thought of asking the butcher to reverse the process - to make the pig whole and alive again. Yet this could not even be asked of a doctor.

While recognizing our limitations, we participate in the act of reproduction. We beget our children - we do not make them, for we have not the skill. The making is the act of the Creator. And His creation continues with the growth and development of each living being, and with the healing of wounds and disease. Evolutionists refer to their process as accidental and to its products as accidents. Knowing what accidents look like, I could never apply that name to a creation. Each has a purpose, a place, a role, and a time. And to borrow Sagan's own words: "Each...is exquisitely made". (5)

Fundamentalists who adhere strictly to the literal interpretation of Genesis face two principal problems. One is the timing aspect - the "days" of creation don't seem to be our calendar days, which has caused the entire Biblical account to be discredited. The other problem is a misconception by many believers that creation was over after the sixth day. It amounts to a feeling that God started everything in motion and then just stood back to watch, that the world is like a top that was once set spinning and will continue only until it runs down or breaks.

Actually, creation functions continuously. How else can we explain that our cells are being continuously replaced with new ones, or that molecules which make up living systems are being constantly recycled from one organism to another? Watch a wound heal and see the creation process function. Plant a garden and watch things grow. See your children change and develop before your eyes.

The theory of evolution denies the existence of an intelligence greater than man. Yet man's intelligence is so limited that he cannot even make his own food. He can raise it, hunt it, cook it, but not make it. His role in preparing roast beef for supper is less important than the cow's role.

From this point of view, one might well wonder how the theory of evolution came to be accepted at all. If it is bad science why do so many scientists hold it to be true? The only explanation I can find is that the evolutionists believe it - as an article of faith. Those who are not well versed in science believe the scientists, felling themselves inadequate to judge. The scientists believe one another - Darwin, Huxley, Sagan, and others. How could these great men be in error?

A reading of "Cosmos" gives an insight into Sagan's thinking. The very first line of the first chapter reads: "The cosmos is all that is, ever was, or ever will be." (6) This statement cannot be proven, nor does the author make an effort to prove it. He simply denies the existence of a Spirit or spirits. It is a dogma - he believes it and expects the reader to believe it. The book goes on in much the same way - it is not really a scientific work, but more of a creed.

The issue before the courts today is whether creationism or evolution should be taught in public schools. The former is being ruled against, in that it involves the teaching of religion. But the teaching of evolution is also the teaching of religion - it is not pure science, because it requires the acceptance of unscientific propositions which have to be believed. Furthermore, in teaching the formation of the cosmos, of life, and of humanity without the need for a creator, it teaches atheism. Atheism is a religion. Ironically, this was established by the Supreme Court of the United States in favor of the American Civil Liberties Union in 1961.

This same ACLU has recently won a court case to prevent the teaching of creation science in the public schools of Arkansas, on the basis of the first amendment. This first amendment was intended to prevent the government from establishing a religion. Instead, it has been twisted by the courts, under pressure by the ACLU, to bring about the establishment of atheism. That this was not the intention of our founding fathers can be learned from a reading of the Declaration of Independence:

"We hold these truths to be self-evident,
that all men are created equal, that they
are endowed by their Creator with certain
inalienable Rights..."

The process has been effective, for we are fast becoming a nation of atheists. My principal concern is that in denying the existence of a Creator, there will be no longer a reason to believe that all men are endowed with certain inalienable rights - for example, the right to life.

REFERENCES

1. Sagan, Carl: "Cosmos," Random House, New York, 1980, p. 38.
2. Ibid, p. 31.
3. Ibid, p. 276.
4. Ibid, pp. 26, 27.
5. Ibid, p. 29.
6. Ibid, p. 4.

FIVE YEARS AGO in the ITEST Newsletter

(To lend a bit of perspective to our present work, the editor from time to time will include excerpts from the Newsletter of five years ago. The following is taken from the April, 1977 issue. It is included because of its currency in the light of an article in a recent issue of Science and also of the upcoming Conference on the "Meaning of Health." The original paper, "The Limitation of Medical Science in the Solution of Social Issues," was presented by Dr. Robert Herwick, M.D. at the ITEST-NASA Conference in 1977.

"The greatest danger of our present scientific medical Weltanschauung is not, however, simply a mistaken optimism about the eradication of a finite number of disease entities one at a time. It is rather that it constitutes one of many bases upon which the subtle erosion of man's personal responsibility for his own life is precariously founded. Disease has come once again to be looked upon as something extraneous which has fallen upon man and must be expelled, rather than as a necessary manifestation of an inherent disharmony in a fallen universe. The responsibility for being sick is shifted from the individual to the doctor and worse, to the medical establishment. A cure is demanded, if not of the physician, then of the goddess of Science whom he vicariously represents. If the World Health Organization can successfully eradicate smallpox in a ten year campaign, one demands the same for cancer, diabetes and heart disease. Understanding illness as a complex disharmony affecting an even more complex individual, read "human being," has in many cases been temporarily set aside in the frenzied search for specific etiology and then for its curative antithesis. The pendulum has again swung back to healing by contraria contrariis.

Ivan Illich speaks of the "medicalization of life" in his book The Medical Nemesis. "For rich and poor, life is turned into a pilgrimage through checkups and clinics back to the ward where it started...this lifespan is brought into existence with the prenatal checkup, when the doctor decides if and how the fetus shall be born, and it will end with a mark on a chart ordering resuscitation be suspended." He observes that "unsick people have come to depend on professional care for the sake of their future health." Carrying this a step further, Paul Ramsey sees present day concern with various genetic techniques including cloning to eliminate diseases from future generations as treating "non patients," i.e., the species or the gene pool rather than individuals. Individual rights may be violated in the name of a higher eugenic goal of "a healthier mankind" rather than healthier men. The object of the healing art drifts further and further from the suffering individual and threatens to become lost in a misty realm of generalities and lofty causes. Clearly these questions must be answered, for in perfecting techniques to prolong an individual's life, the process of natural selection ceases to operate and the overall incidence of heritable diseases, once limited by death before the age of reproduction, increases exponentially. A case in point is the incredible increase in the incidence of diabetes mellitus in the general population -- an increase made possible by the use of insulin in literally saving the lives of juvenile diabetics, allowing them to reproduce and perpetuate their genetic abnormality. The exciting possibilities of DNA - recombinant engineering radically to correct the cause of diabetes on a chromosomal level releases the specter of mutant genes and their possible effect upon those now living.

Medical scientists today have been lead from one discovery, one triumph to another, inexorably further away from the patient's bedside and from the Hippocratic ideal. Embued with the fervor of this new religion, the patient himself has in his faith in science literally chased his physician thither.

The healer has often retreated to the inappropriate security of prophylactic laboratory tests ("prophylactic" in the sense of offering protection for him against the threat of malpractice litigation for failure to diagnose). In other cases he may have hidden himself behind a barrage of computerized fluoroscopes, radioisotope assays and electron microscopic analyses to avoid confronting his ultimate inability radically to cure. The profound anxiety stirred up by the realization of this limitation has become as untenable for the worshippers at the temple, the patients, as it has for its high priests. The flight from such a frightening realization further and further into the technologic strata betrays the society's growing existential dilemma. The individual has increasingly abdicated responsibility for his own life in the great illusion that he has enhanced his ability to enjoy that life. He seeks no longer only the apple, but the entire tree. He has climbed a bit too far and too fast out upon a limb of that tree and he is frightened. To retrace his ascent is impossible and so he clings more tightly, more stubbornly to these branches and looks higher still for a resting place. Like Faust he has ventured so far and so high that in his bedazzlement has risked losing his very self. Dubos expresses this quite well: "To discover, to describe, to classify, to invent, has been the traditional task of the scientist until this century; on the whole a pleasant occupation amounting to a sophisticated hobby. This happy phase of social irresponsibility is now over and the scientist will be called to account for the long-term consequences of his acts. His dilemma is and will remain that he cannot predict these consequences because they depend on many factors outside his knowledge or at least beyond his control -- in particular on the exercise of free will by men."

Obviously I cannot end on such a pessimistic note of what I see as a strong trend on the stage of modern medicine's reenactment of the Aesculapian scenario. As with other oscillations of history, there endures a spirit of the healing art which is transcendent, the spirit of comforting a patient who suffers, a spirit which is nonetheless immanently present in the technology adopted by the healer. Technology cannot be dismissed with a nostalgic sentimentality, the Samaritan today would have delected the pouring of oil into his patient's wounds. We know today that oil impedes wound healing. One would not relish the prospect of treating bacterial endocarditis without penicillin or leprosy with sulfones, no matter how Hippocratic his concern for the whole patient. Given this spirit of healing, the awesome complexities of technology can be forged into remedies of inestimable value to be utilized by the good physician. Absent this spirit and Science, that foreboding temple priestess, usurps the physician's role, transforms means into ends, and in the end displaces individuals as the rightful recipients of the healing art. Free man is thereby lead further out that limb at whose end is found the loss of yet another facet of his existential freedom: the ultimate responsibility for his own body.

An article by John C. Burnham, "American Medicine's Golden Age: What Happened to It", can be found in 19 March, 1982 issue of Science, pp. 1474 - 1479. It provides an interesting corollary to Dr. Robert Herwick's paper of five years ago.

The following is an excerpt from the paper, "Technology and the Nation-State: Patterns of Influence," prepared by Drs. Jean-Robert Leguey-Feilleux and Steven Puro for the March, 1982 ITEST Workshop on "The Effects of Technological Advance on the Survival of the Nation-State."

COMMUNICATIONS TECHNOLOGY AND THE NATION-STATE

Many technological issues transcend national borders. The rapidly changing setting of communications technologies -- e.g., photo-satellite sensors, direct broadcast satellites, computer data bases -- have created both new opportunities and new problems for nations. Communication technology affects nations in ways such as the exchange of information, the gathering and analysis of data, joint planning of programs, and settling disputes by monitoring adherence to regulations. A major issue dividing developed and developing nations is a consensus about the means and ends of using communications technologies. The development and control of international communications may result in new cooperative or conflict relationships between states.

This section of the paper will explore the effects of communications technologies in nation-states policies towards global cooperation in using these technologies, national control over internal communications, and trans-national data flow. Communications Technology can alter existing patterns of nation-state activities. Direct transmission of information allows many nations, especially in the developing world, to receive direct information about neighboring nations rather than from an intermediary source, such as Reuters News Agency (London). Direct Transmission between neighboring states can make states vulnerable to propaganda against their respective governments.

Remote sensing satellites photograph the earth and can distinguish between objects that are separated by a fraction of a meter. These satellites are part of the communications revolution which indicates some of the problems for the current status of the nation-state. These satellites, such as NASA's network, have become a significant part of developed nations' economic and defense planning. The economic issues are the most interesting. Nations may use remote sensing satellites to scan large areas and provide valuable information about another nation's agricultural capacity; e.g., the level of USSR wheat production. Moreover, the sensing satellites can send information about the "sensed" nations' soil conditions, forestry systems and water resources. In another area, promising locations for exploration of minerals and other natural resources in other nations can be identified. Nations may also use the satellite photographs to assess its own agricultural and mineral resources.

Eugene Skolnikoff has argued "Satellite information may have considerable economic and strategic interest, raising troublesome questions about information control and access, control of the application of this technology and international operations". Nations' ability to conceal the satellite information from the "sensed" country raises questions about the latter country's sovereignty over information about its territory and natural resources. The "sensed" countries, especially mineral rich nations in the developing world, have argued that they should exercise complete sovereignty over information about their natural resources. For example, they fear that external mining companies may use this information to take options on tracts of land and prevent the local government from benefiting from the natural resources. The natural resources information is vital to their economic development.

Current demands for regulating this sophisticated communication technology include an "International Freedom of Information Act". Under this concept, national legislatures would consider allowing access to the economic information obtained from remote, sensing satellites. This type of legislation opens questions of international versus national management of world resources. Remote sensing

satellites raise a central dilemma over technology policy and the development of nation-states. The conflict is between international cooperation as opposed to increased national control over technological and scarce natural resources. Difficult international situations arise if nations must give information to an enemy or a potential enemy.

Global Cooperation in Communications Technology

Nations place an increased reliance on technology and technological solutions to resolve domestic and international problems. The scale and scope of most new technologies require collective responses. Nations cooperate in these ventures to establish criteria for using the technology, minimize costs, and control adverse side effects of the technological advances. The cooperative responses may reduce the significance of the nation-states through the diminution of a nation's sovereignty, independence, and cultural identity.

Control and management of the electro-magnetic spectrum, including radio, television and communication relay satellite broadcasts, has fostered an uncommon degree of international cooperation among nations with different levels of technological capability. The process of allocating bandwidths to broadcasting services and registering each individual nation's frequency has been performed by the International Telecommunication Union (ITU). Every several years the World Administrative Radio Conference allocates or reallocates the broadcasting spectrum to account for new technological advances and demands for parts of the frequency spectrum. Nations relinquish part of their freedom of action to offset unequal benefits and costs from new communication technologies. Member nations cooperate to achieve economies of scale, the uninterrupted flow of national and international communication signals, protection for states' exclusive control over their air space, and to regulate new technological practices, such as using lasers to interfere with communication signals. The incentives for cooperation diminish some states attempts to utilize their communication resources at the expense of other states. The development of domestic satellite broadcasts adds to the international problems of distributing appropriate satellite orbits and frequency spectrums. Nations and the ITU will face a major problem in the allocation of broadcasting spectrums and orbits for communication relay satellites.

Outer space communication relay satellites represent a technology which has changed the magnitude of international telecommunications. Communication satellites have large bandwidths and consequently huge communications capacity. These communication satellites have broadened nations' internal communication channels. Nations can use this and other communication technologies to link remote regions and reach disparate populations. Governments utilize the broadcasts to preserve national culture and traditions and provide educational programs directed toward national needs. Governments hope these new communication linkages will strengthen the nation by consolidating individual and collective support for the nation and national symbols. On a cross-national level, the communication relay satellites enable developing societies to link themselves together. The satellites permit both lateral and vertical transfers of technology and information, respectively, transfers between developing nations and then between developed and developing nations. The traditional communication media derived from the colonial experience made both types of transfers difficult. Communications, trade, and travel networks during the 19th and 20th century colonial period passed through either London or Paris. For example, today it is still easier to make a telephone call between Egypt and South Africa through London than directly....