ANNOTATIONS FROM THE LITERATURE

ANTHROPOLOGY

Stringer CB, Andrews P. 1988. Genetic and fossil evidence for the origin of modern humans. Science 239:1263-1268.

Summary. Two models are compared to explain the origin of anatomically modern humans. The "multiregional" model states that modern man evolved from a widespread species, with relatively small differentiation between populations, and with fossil intermediates expected anywhere in the world. The "single origin" model places the origin of modern humans in Africa, with dispersal from that point of origin. The greatest genetic variation within populations should occur in Africa, and fossil intermediates would be expected only from Africa.

Comment. The authors favor the "single origin" mode, with reasons based on genetic and fossil evidence. The question is interesting, but the discussion seems somewhat speculative.

ANTI-EVOLUTION BIBLIOGRAPHY

McIver T. 1988. Anti-evolution: an annotated bibliography. Jefferson, NC: McFarland & Co. 385 p.

Summary. This unusual volume should prove to be very useful to anyone interested in the creation-evolution controversy. The author lists 1852 references which are considered to be "anti-evolution." Though most of the references are books, some are booklets or pamphlets. Both contemporary and historical references are included. It is highly regrettable that the author did not include articles from the many creation journals to make a more comprehensive volume. However, considering the volume of material available, such an omission is understandable. It is also regrettable that the number of pages for each reference is not given, leaving the reader without any idea of the extent of coverage for each reference.

The volume concludes with three indices: name, title, and subject. Most of the entries are annotated, some quite extensively. The author who "disagrees with anti-evolution arguments and conclusions" presents the viewpoint of the various references themselves. The annotations make interesting and instructive reading.

Summary. In the introduction the author states, "My intention is to illustrate the enormous range and depth of the opposition to evolution." This goal has been impressively achieved, even with the exclusion of articles from the creation-oriented journals.

DARWINISM

McCann LJ. 1986. Blowing the whistle on Darwinism. Published by the author, St. Paul, Minnesota. 124 p.

Summary. This book is another of the many anti-Darwinian documents to appear in recent years. Its approach is scientific. Darwinism is viewed in its broader meaning, including both the origin of life and the production of new species. The main part of the text presents a logical and factual outline of the main scientific problems with Darwinism. Consideration is also given to the implications of the spread of Darwinism and the incongruity between so-called scientific rigor and the acceptance of the Darwinian concepts by the scientific community. The author proposes that fundamental scientific principles have been violated. Some of the sociological implications of Darwinism are discussed. Intelligent design for the origin of living organisms is suggested as an alternative.

Rusch WH, Sr, Klotz JW. 1988. Did Charles Darwin become a Christian? Williams EL, editor. Norcross, GA: Creation Research Society Books. 38 p.

Summary. An interesting and informative review of the evidence relating to the alleged deathbed Christian confession of Charles Darwin to Lady Hope. Based on several lines of convincing evidence, the author (Rusch) concludes that the anecdote must be apocryphal. The last part of this booklet, written by Klotz, reviews Charles Darwin's religious beliefs. The conclusion is that while he had some lingering doubts about the non-existence of God, he considered himself to be an agnostic.

EVOLUTION

Cairns J, Overbaugh J, Miller S. 1988. The origin of mutants. Nature 335:142-145.

Summary. Conventional evolutionary theory is based on the belief that variation is produced by random mutations, and that the environment acts in such a way that those individuals best adapted for survival

are favored over those less well-adapted. The randomness of mutations seems intuitively obvious, but the experiments described in this paper bring this assumption into question.

In the laboratory, bacteria (*E. coli*) with a mutation disrupting the function of the enzyme for utilizing lactose somehow mutated to restore the lactose gene to normal function, but did so only when under selection for ability to utilize lactose. In another experiment, a bacterial strain was used that could grow in lactose only if a short DNA segment were deleted, and if grown in the presence of arabinose. Again, mutants were discovered only if lactose was present. In a third experiment, bacteria were used that lacked the normal gene for the lactase enzyme. *E coli* possesses a cryptic gene which can utilize lactose if two rare mutations occur together. Lactose-using colonies formed in this situation, but the process whereby this may occur is not understood.

Comment. These results are based on only one species and one enzyme system, and it is not certain whether the results have a more general application. Nevertheless, this paper promises to stimulate a great deal of discussion among evolutionary theorists, and will encourage those who favor some kind of environmental influence on genetic change. If the phenomenon of non-random mutations is found among eukaryotes, it may be used to explain directionality in evolution. (For a related discussion, see: Opadia-Kadima GZ. 1987. How the slot machine led biologists astray. Journal of Theoretical Biology 124:127-135, reviewed in *Origins* 14:26.)

EXTRAORDINARY GEOLOGY

Moores EM, Wahl FM, editors. 1988. The art of geology. Geological Society of America Special Paper 225. 140 p.

Summary. The stated purpose of this unusual volume is "to celebrate the 100th anniversary of the Geological Society of America and to convey the visual beauty of Earth and its neighbors as seen from a geologic perspective."

It consists mostly of 133 pages of color photographs of geologic features selected primarily for their natural beauty. Scenic features dominate, but the photographed objects vary from minerals under the microscope to a radar image of folds on Venus. The message of the book seems to be that there is much beauty to be seen in the geologic features of the world. Those familiar with field geology have been

highly aware of this, but it is interesting to find a publication that emphasizes this point. It speaks of the "humanness" of geologists.

Comment. Strangely, the introductory comments place special emphasis on the development of the geologic time scale. Likewise, the captions of many of the photographs emphasize their assumed age. One wonders why a volume that is supposedly devoted to the "visual beauty of Earth" should concentrate on geochronometry. Another criticism is that while a number of the pictures are dramatic, and many of them are good, too many are very poor. Especially annoying are a number of out-of-focus pictures.

Aside from these shortcomings, this very enjoyable volume illustrates in a simple way many dramatic geologic features.

PALEOMAGNETISM

Loper DE, McCartney K, Buzyna G. 1988. A model of correlated episodicity in magnetic-field reversals, climate, and mass extinctions. Journal of Geology 96:1-15.

Summary. Noting the correlation between mass extinctions, climate, and magnetic-field reversals, the authors suggest these events are caused by thermal anomalies in the core-mantle boundary. As the boundary layer cools, it thickens, reducing the flow of heat from the core to the mantle. This causes the layer to absorb more heat, eventually resulting in convection and thinning of the boundary material. A hot plume is released from the boundary material into the mantle, and rises to the top, where it disrupts the stability of the crust. The effects on the crust depend on the nature of the crust in the particular region affected. Polar wander would be the first to be affected, followed by changes in magnetic field and climate, and mass extinction.

PALEONTOLOGY

Rigby JK, Jr, Newman KR, Smit J, Van der Kaars S, Sloan RE, Rigby JK. 1987. Dinosaurs from the Paleocene part of the Hell Creek Formation, McCone County, Montana. Palaios 2:296-302.

Summary. Dinosaur fossils have been found in six Paleogene localities in Montana. This is higher in the geologic column than their traditional demise proposed for the end of the Cretaceous. Evidence that they are truly Paleogene deposits, and not simply reworked Cretaceous deposits, is given. This evidence includes the unabraded

appearance of the fossils, their association with other fossils that seem definitely not to have been reworked, and their segregation from other Cretaceous fossils that should have been included if the Cretaceous deposits had been reworked. Since the stratigraphic range of the dinosaurs extends beyond the Cretaceous-Tertiary boundary, the significance of the mass extinction event at the boundary is reduced.

PHILOSOPHY OF SCIENCE

Stenger VJ. 1988. Not by design. The origin of the universe. Buffalo, NY: Prometheus Books. 203 p.

Summary. The thesis of this interesting, albeit erroneous, book is that order can emerge from chaos, and nothing that we see illustrates an omnipotent, supernatural Creator. The world, including man, is the result of chance, and the concept of an overriding plan or design is considered to be archaic. The argumentation, which is mainly at the nuclear-physics level, is well-explained and easily grasped.

Comment. One wonders what can prompt someone to take such a strong reductionistic position and with ease and logical arrogance reduce all of the universe to his understanding of it. Significant aspects of science and other aspects of reality are blatantly ignored, and man's uniqueness is not considered. The philosophical diffidence that one might expect from the author in view of the important questions posed is lacking. To him, selected interpretations of science have all the answers. One also wonders about the objectivity of the author when he entitles his last chapter, "We will become God." This chapter concludes with an appeal to the prowess of computers.

PLATE TECTONICS: HISTORY

Frankel H. 1988. From continental drift to plate tectonics. Nature 335:127-130.

Summary. The history of the development of plate-tectonic theory over the past 25 years is outlined in this paper. The men whose ideas changed the course of geology are named and their ideas described. The way in which one idea prepared the way for the acceptance of other ideas, finally resulting in a new perspective, makes interesting reading. Anyone interested in how ideas change, or more specifically in the discoveries that contributed to the acceptance of the theory of plate tectonics, will want to read this paper.