Evolutionism, Creationism and Christianity

by PAULA P. HAIGH

There can be no question that the theory of evolution has been a major factor in shaping the religious attitudes of contemporary man. New research, however, raises important questions about that theory. In this survey of the findings of modern science regarding evolution, Paula Haigh suggests that the time has come for the theory of Creationism to get a fair hearing. The author does not purport to give an exhaustive analysis here. Rather, her article identifies the scientific points at issue and calls all biologists to further research.

It is the purpose of this essay to call attention to some little known facts about the theory of evolution and its acceptance by Catholics. Indeed, the theory of evolution is presently under serious criticism from within science itself and it is even possible to predict its demise as 'established fact' in the very near future, precisely as the older theorists such as Huxley and Simpson are replaced by younger men less stridently committed to an atheistic world view.[1] It is interesting to speculate about the kind of image the Church will present then, with the reinterpretations and reformulations of doctrine currently proceeding so vigorously among Catholic theologians. It is no secret, but it is not often realized even by teachers of religion and theology, that the theory of evolution – mistakenly identified with science and fact – is the main motivation both for our contemporary rationalistic Biblical exegesis and for the compulsion to recast our traditional doctrines of creation and Original Sin. This point is very openly made by Ervin Nemesszeghy and John Russell, both Jesuits, in *Theology of Evolution*:

> There cannot be many Christians left who regard the theory of evolution as a subversive attack on the Christian faith. On the contrary, for several decades theologians have assimilated the theory into their theological thought, and in this way have been able to reinterpret some of the Christian doctrines in suggestive and exciting ways. Such is the aim of this book.[2]

Nemesszeghy and Russell notwithstanding, it is a grave error to think that there are not "many Christians left who regard the theory of evolution as a subversive attack on the Christian faith." For there are many, and their number is growing every day. Not only is their number growing but it is becoming more and more dangerous to ignore the significance of what they are saying. For there is abundant evidence – scientific, philosophical, and theological – against evolutionary theory, and the obvious Christian sense of the alternative world view known as Creationism makes it imperative that Catholic scholars give serious attention to it. The almost total neglect and ignorance of it in most Catholic quarters, the immediate scorn and misrepresentation with which it is met when it is acknowledged, is no less than scandalous in this age of boasted ecumenical tolerance and open-mindedness. Moreover, Catholic scholars surely refuse at their peril to consider this mounting body of evidence against the theory of evolution.

When it is adverted to, the Creationist position is invariably presented in its long outdated form. For example, Nemesszeghy and Russell assert that 'Special Creation' is

> the theory that each species or family, or whatever it may be, was specially created by God either out of nothing or, in some unknown but miraculous way, out of pre-existing matter . . . that the first man was created about 4,000 B.C. and that all the apparent relics of earlier men – Stonehenge, the Altamira Cave-paintings, the skeletons of Neanderthal Man etc. – were directly created by God *in situ* without any human agency. . . .[3]

Creationists do most emphatically believe that God created all things in the beginning out of nothing in a totally miraculous manner and such is the traditional *de fide* teaching of the Church.[4] But the

authors here strongly hint at the ancient *fixity of species* notion which Creationists abandoned in the earlier part of this century. Particularly since the work of George McCready Price,[5] Creationists recognize the tremendous amount of variation that occurs in the natural order but contend – and this is scientifically verified – that such variation always and only occurs within certain limits. These limits are identified with the Biblical *kind* but they are not identical to the biologist's species, genera, or even family because the categories of taxonomy are always shifting to accommodate new data.[6] This is not to say that biological or scientific taxa are without meaning. They are very significant and represent reality in important, even essential ways. But they must, by their very nature, remain fluid and flexible. The Biblical *kind* is also embedded in the very structure of matter and Creationist scientists see the whole area of biological speciation with relation to the Biblical *kind* as one of the most exciting, challenging and fruitful areas of research.[7]

EVIDENCE

Once the Creationist position is understood, it may be argued plausibly that the objective data, the real uninterpreted facts of science, fit the Biblical record and the Creationist model much better than they do the evolutionary hypothesis. The more salient features of difference between the two models may be considered here.

Progressions

The evolutionary model of science postulates a general movement in time from simple to complex, from 'primitive,' 'primeval' forms to more specialized and increasingly complex modern forms. Thus one author states: "The primeval cell representing first persisting life was much simpler than even the simplest form of life known today, yet from it arose lineages that eventually became as complex as trees and elephants."[8] This assumption of progress from simple to complex is also an aspect of natural selection which is said to operate in favor of increased complexity in order to insure the survival of the fittest. The fittest are thus assumed to be more complex and complexity is assumed to be more fit, more likely to survive, all of which is hopelessly circular. Indeed, evolutionary talk in general is assumptive and circular.

Teilhard de Chardin is perhaps the strongest advocate of a universal movement of increasing complexity,
but one does not always find it emphasized by the scientists themselves. Thus, George Gaylord Simpson, the dean of evolutionary theorists, speaks rather of "progress" but admits that "the history of life provides examples not only of progress but also of retrogression or degeneration." A pattern that is characteristic of life as a whole, he says, is only to be found in the "tendency for life to expand, to fill in all the available spaces in the liveable environments, including those created by the process of that expansion itself." Even this general "expansion of life has not been constant and there have been points where it lost ground temporarily, at least."[9]

The Creation model of science is more consistent here than the evolutionary model.[10] Creation predicts not only complexity but a certain maturity and "appearance of age" from the beginning but admits that there is no way of knowing what the first created beings were like except from Divine Revelation. Most Creationists, however, consider Holy Scripture to be a source of real knowledge that can find empirical support in the data of modern science. Thus, there is strong inferential evidence against development from simple to complex in the present intricacy of the 'simplest' cell. This most simple cell known to modern science performs the following operations: 1) it takes in nutrients, first determining which ones to ingest and which ones to reject; 2) it absorbs or gives off water according to its needs; 3) it can manufacture all the materials of which it is made; 4) it puts those materials together in the only pattern – out of many millions of possibilities – that will result in the construction of a new cell; 5) it

harnesses all the energy needed for its manifold activities; 6) it stores energy, raw materials and finished products for future use; 7) it can manufacture chemicals to be used elsewhere, such as antibiotics and exoenzymes; and, 8) it can give off these chemicals, along with waste materials. Such is the 'simple' form of life found in the 'earliest' and 'oldest' of the geological strata.[11]

The Creationist therefore questions that evolutionary thought which postulates a radically simple cell from which the complexity we now observe has evolved. The atom itself is a most complicated structure and the continuing discoveries of more and more subatomic particles undermine the whole concept of any real simplicity in matter.

Moreover, the series or progressions that the evolutionists set up to illustrate their theory are also questionable. One could line up the varieties of dogs that exist in the world today, beginning with the toy poodle and ending with the Doberman, and postulate that the larger ones must have evolved from the smaller ones, pointing out all the gradations in size and shape and fitting them all together in a strictly temporal order, assigning older ages to the smaller and younger ages to the larger. The actual fact is that the order is not a temporal one at all but a structural one. It is entirely possible – and the Creationist believes it is actual – that this is what has happened with all the progressive series of the evolutionists that are supposed to prove the theory. Creationists believe that varieties have developed in time, (there may be even as many extinct species as surviving ones) but Creationists resent the unscientific assumption that unrelated forms may be placed at the beginning of a series with the dogmatic claims that such a speculative arrangement illustrates and proves the theory of evolution. The most notorious of these series are those of the horse and of man.[12] One could easily set individuals from all the different races and nations of men living today, line them up in a temporal order and claim that the Australian aborigine, who looks simian, is the progenitor of the modern white Caucasian. It is no wonder that some people become alarmed and suspect the scientists of promoting racism – Dobzhansky had to write a book reassuring people it was not so.[13] As for Simpson's expansion of life, the Creationist agrees heartily and sees this abundance of life in all its varieties as the fulfillment of the Genesis command to increase and multiply and fill the earth (Genesis 1:22, 28).

Intermediary Forms

The second postulate of evolutionary theory to be considered in relation to Creation is the prediction, absolutely necessary to evolution, of intermediary forms between those fully formed and specialized creatures found in the fossil record. This is the greatest embarrassment to the evolutionists. Harold Coffin has lined up statements of some prominent evolutionists on this subject.[14] Darwin, for example, wrote:

> To the question why we do not find rich fossiliferous deposits belonging to these assumed earliest periods prior to the Cambrian system, I can give no satisfactory answer. . . . The case at present must remain inexplicable; and may be truly urged as a valid argument against the views here entertained.

Cambrian fossils, such as those of trilobites, moss animals and lamp shells appear in the fossil record suddenly and fully formed. There is no hint that they may be the end product of a gradual development. In 1959, Norman D. Newell of Columbia University made the following observations in a paper prepared for the centennial celebration of Darwin's book on the *Origin of Species*: "A century of intensive search for fossils in the pre-Cambrian rocks has thrown very little light on this problem. . . ." It is not only the pre-Cambrian rocks that fail to furnish evidence for the theory of evolution: it is the entire geological column. A.H. Clark has said:

> When we examine a series of fossils of any age we may pick out one and say with confidence, 'This is a crustacean' – or starfish, or a brachiopod, or annelid, or any other type of creature as the case may be.

In other words, there are no in-between or half-forms that one would have to coin a new word for, such as star-pod or crustellid. Finally, George Gaylord Simpson frankly admits:

> It is a feature of the known fossil record that most taxa appear abruptly. They are not, as a rule, led up to by a sequence of almost imperceptible changing forerunners such as Darwin believed should be usual in evolution.

And again, he says the sudden appearance of life is "not only the most puzzling feature of the whole fossil record but also its greatest apparent inadequacy." The inadequacy is not in the fossil record but in the theory of evolution. If evolution had occurred, there would be a multitude of creatures in the between stages such as fish with rudimentary legs and feet in place of fins. In fact, if evolution had occurred, it is difficult to imagine how there could be any such thing as a recognizable and classifiable thing as a species at all because everything would be in process.

Also, in the work of evolutionists, one must keep in mind that everything found is viewed through the strongly tinted glasses of the theory. Eugene Dubois, who discovered the so-called Java man, later admitted that the bones were not human but belonged to a gibbon monkey. The history of human fossil evidence is shot through with cases of fraud, deceit, and honest error.[15] There is no such chaos in the field of plant and animal evolution. Creation science, moreover, has none of these problems. Creation predicts exactly what is found in the fossil record: the sudden appearance of life, no intermediary or transitional forms between kinds or basic types, and a great variety within basic types or kinds in fulfillment of the Genesis command to increase and multiply.

Thermodynamics

Not always emphasized but implicit in the evolutionary hypothesis is the prediction of a universe constantly on the up-swing, constantly moving in a forward progression to more and more advantageous stages of being as natural selection and mutation opt for the more fit. Again, Teilhard de Chardin is the foremost exponent of this aspect of the evolutionary world view. Aside, though, from Teilhard's conflation of the natural and the supernatural with matter and spirit, there is implicit in any theory of the evolution of species from simple to complex – from lower to higher – a necessary corollary that the overall pattern of progress is toward the betterment of creation. This is also implicit in the operation of natural selection – a very murky, subjective and, to many, tautological concept. It is practically impossible to distinguish natural selection from adaptation in actual cases.[16] So, again, the evolutionists are confronted with a serious problem. For example, if natural selection were a powerful agent of survival as is claimed, it is difficult to understand why so many species have become extinct. Why did natural selection not operate to save such a hardy family of animals as the dinosaurs? The Creationist points to the Noahic Deluge – a catastrophe of global proportions and incredibly destructive force – as the most probable answer.[17]

Most important of all, the theory of evolution as a drive toward higher order, more complexity and greater betterment contradicts the Second Law of Thermodynamics, the most basic law ever formulated by science. Henry Morris summarizes it this way:

> . . . there is the remarkable fact that all processes involve energy changes and these changes always tend to go in a "downward" direction, such that there results a net decrease in the "availability" of the converted energy for further useful work. Although the Law of Energy Conservation (the First Law of Thermodynamics) assures us that no energy will be destroyed, this

> Law of Energy Decay (the Second Law of Thermodynamics) tells us that energy continually proceeds to lower levels of utility.[18]

Again, Creation science has no problems here. Rather, the Second Law is a very striking scientific confirmation of the curse that God pronounced on Eve, Adam, the earth and even on animals as a result of the sin committed in the Garden. With sin there came into the world suffering and death. We are now confronted at every turn with decadence, degeneration, decay and death. Creatures are born, grow and develop for their appointed time but inevitably decline and die. Man must struggle against inclemencies of weather and the intractability of the land in supplying the world with food. He must work desperately to maintain a semblance of equilibrium between available energy and its consumption. This is no passing situation. The fossil fuels, for example, are definitely limited. When they are burned up, their energy cannot be recovered for use. Likewise, even the earth's magnetic field is decaying at a rate that yields a probable half-life of only 1400 years.[19] Science does not know of any time in which the law of entropy (increase of disorder in closed systems and even in open systems)[20] has not operated. And the addition of time, which the evolutionist has exalted against all reason to the status of a primary cause, does not obviate but rather extends and deepens the effects of the Second Law. Creation science, then, appears to be much more in harmony with reality than is the theory of evolution. Moreover, the fossil record itself is a testimony to suffering and death of a most violent kind, for fossils can only occur under conditions of some kind of catastrophically sudden death. The theistic evolutionist in particular must explain so much suffering and death in the world before the appearance of man and his sin.[21]

Genetics

There is yet another area in which Creationism may be contrasted with the theory of evolution and shine with superior reason. If species are able to transmute, if apes are able to be transformed into men, we would expect the genetic code to be very unstable. But what is the actual case? The genetic code is the most stable, the most predictable and the most amazingly dependable reality known to modern science. In an effort to eliminate this problem, Bruce Wallace has written an entire book to discredit special creation and build a case for evolution on the science of genetics. According to Wallace, because DNA is found in all forms of life, "life has had but a single source, and . . . it has evolved subsequently into what are recognized as the various forms of plants and animals we see around us."[22] This means, again, the progression from radically simple forms to more and more complex ones, which we have already discussed. But Wallace concludes:

> . . . if our theory that all living things have evolved from earlier forms and that at progressively remote times there existed common ancestors to progressively dissimilar present-day organisms, is adequate, we merely conclude that it is unnecessary to invoke special creation as a mechanism to account for the diversity of life about us. Furthermore, we reject special creation as an adequate explanation because we can think of no means by which we can put it to a valid test, because we can imagine no observation falling outside the capabilities of a Creator possessing unlimited ability. Search diligently for the adequate, reject the untestable – those are the recognized procedures of the laboratory, the classroom, the clinic, and the courtroom.[23]

What Wallace is really holding here is that small, so-called micro-changes have, in time, accumulated into the macro-changes of transformed species and genera. The only trouble with this argument is that, on his own grounds and according to his own standards of evidence, this transmutation of kinds has never been observed by science nor has it ever been induced despite the close observation of millions of generations of fruitflies and their progressively more pathetic mutations. The inherent intelligibility of creation is not denied by Wallace nor by evolutionary science as a whole – only its ineffable Source. One is forcibly reminded of Saint Paul's words to the Romans:

> For ever since the creation of the world His invisible nature and attributes, that is, His eternal power and divinity have been made intelligible and clearly discernible in and through the things that have been made – His handiworks. (Romans 1:20)

The Creationist has no quarrel with the fact of similarity in creation. There is no quarrel, either, with the much touted fact that there is only one amino acid difference between man and the chimpanzee.[24] But Creationists do quarrel with the idea that, "It is the number of amino acid differences which is a measure of the evolutionary distance between me and the other mammals."[25] And they quarrel also with the assumption that DNA in all life proves evolution. Degrees of similarity do not prove evolutionary descent. They witness to structural relationship. Henry Morris sums up the difference this way:

> In the organic realm, there are many similarities between different kinds of plants and animals, and evolutionists have interpreted these as evidence of common ancestry. Creationists, on the other hand, interpret the same similarities as evidence of common creative planning and design. The evolutionist has to assume all such characteristics have developed by chance mutations and natural selection. Creationists explain them as structures designed by the Creator for specific purposes, so that when similar purposes were involved, similar structures were created.[26]

Morris then goes on to suggest that we might well write this off as an impasse in the debate were it not for the fact that both evolutionists and Creationists must also account for differences. Evolutionists encounter a real problem here, for

> If the cat and dog evolved from a common ancestor in the same environment by the same process, how did they ever get to be different? It would seem there ought rather to be an integrated series of animals between cats and dogs, so that one could never tell where 'cats' stop and 'dogs' begin.[27]

Thus we come back to the problem of transitional forms.

The neo-Darwinian evolutionists and proponents of the synthetic theory (i.e. synthesis of Darwinism and Mendelian genetics) have placed the main anchor of their proof in another aspect of the science of genetics. Evolutionary change needs a powerful mechanism and they claim to have found or located it in the operation of natural selection plus mutation. But there is an insuperable difficulty here for, while natural selection may operate for advantageous adaptations of the species, mutation is always harmful or neutral. Morris summarizes the case against mutation as an adequate evolutionary mechanism in five points: 1) mutations are random, not directed; 2) mutations are rare, not common; 3) good mutations are very, very rare; 4) the net effect of all mutations is harmful; and, 5) mutations affect and are affected by many genes, that is,

> since a changed characteristic requires the combined effects of many genes, and therefore many concurrent mutations, the probability of simultaneous good mutations in all the genes which control a given character is reduced to practically zero.[28]

It seems then, that the real mechanism for evolution is natural selection and the evolutionists are right back where Darwin started, before the rise of Mendelian genetics.

To conclude: the science of genetics gives much more support to Creationism than to evolution considering the stability of the genetic code and the fact that mutations, besides being rare, are always harmful or neutral. It is very difficult to see how either mutations or natural selection, or both combined, can provide the powerful mechanism required by evolutionary theory. Both natural selection and mutation are responsible for many changes but science has yet to discover in the past or induce in the present anything that could be termed macro- as opposed to micro-evolutionary change. The Creationist recognizes so-called micro-evolution which is simply change and variation within basic kinds with the

boundaries and limits of this change being determined and specified by the DNA for the particular type of organism. To consider genetic similarities as proof of evolutionary distance and propinquity is to temporalize a structural relationship. Time is the Baal of the evolutionist.

IMPLICATIONS

The implications of the foregoing pages for the future of Catholic theology should be quite obvious. For too long now, the compromise form of evolution known as *theistic* has been taught in Catholic institutions with no thought at all given to the possibility of interpreting the scientific data in a manner fully supportive of the Biblical record. Instead, the historicity of Genesis has been completely rejected. Process philosophies and theologies have been spawned by science in its evolutionary aberrations and the influence of these ideas upon contemporary Catholic thought is becoming more and more pervasive.[29] New interpretations of the traditional doctrines of creation and original sin are being formulated and presented as being compatible with traditional Catholic doctrine when they manifestly and demonstrably are not so.

One important problem raised by such interpretations deserves analysis from the Creationist point of view. It was Pope Pius XII in *Humani Generis* (1950) who gave the green light to theistic evolution when he said:

> . . . the Teaching Authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions, on the part of men experienced in both fields, take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter – for the Catholic faith obliges us to hold that souls are immediately created by God.[30]

Now the difficulty arises at just this point – that traditionally man has been defined as a composite, a substantial unit, an enfleshed soul and an incarnate spirit, one in every sense of the word (but not simple). Catholic philosophy and theology have always assiduously avoided any Platonic conceptions of the soul as a prisoner in the body or a bird in a cage. The theistic evolutionists created new problems by seizing upon the phrase in *Humani Generis* "That souls are immediately created by God" and proceeded to emphasize the evolution of the body from the ape in such a way that Catholics in general now see nothing at all unusual or alien to faith in thinking of man's soul and his body as two entirely separate entities – the one evolving from animal origins, the other held in reserve, as it were, to be infused at a certain point in time. The question to consider is whether God waited for the animal body to become a human body before He infused the soul into it or whether the very event of the infusion of the soul caused the body to be human.

Ludwig Ott has a very provocative sentence that speaks to this point: "According to Gn. 2:7, the slime, by virtue of the creation of the soul, becomes a living human body, and thus a component part of human nature."[31] The Creationist argues, therefore, that it is *by virtue* of the creation of the soul that there is a human body at all. Moreover, the soul is the only rational principle of being that is man. Therefore, there is either the full rationality of the human being present or there is not, in which latter case there is no man but only an animal.

This coincides nicely with the Thomistic doctrine that for God to create is to bring a creature wholly, substantially and instantaneously from nothingness to the plenitude of its essential being. All this accords with the Biblical record perfectly: "Then the Lord God formed man of dust from the ground, and breathed into his nostrils the breath of life; and man became a living being" (Genesis 2:7). In other words, the soul of Adam was co-created with his body and as the substantive formal principle of his total being and personhood. And so it is with every human being since, only it happens at the moment of conception when the human zygote comes into being as a fully human person *in potentia* as to its later physical

morphology and specifically human functions. Genetically it is fully and completely programmed to humanity, and nothing else.

In view of what has just been said, it is difficult indeed to see how the "whole man is the result of evolution," as the theistic evolutionists Nemesszeghy and Russell contend.[32] Rather, the Creationist position seems more likely: the whole man is the result of creation – specifically of the creation of the soul. In this connection, William Tinkle quotes Barry Commoner as saying that "rather than DNA being the secret of life, 'life' is the secret of DNA."[33] Thus, the rational soul is the secret of man.[34]

As the preceding discussion indicates, there is much evidence to be considered on the side of Creationism. Moreover, a full application of this evidence seems to strengthen the claims of Biblical faith as well as yield rich fruit when incorporated into traditional philosophical and theological speculation. Catholic scholars, therefore, ought to study this matter more fully. The potential blessings have been too long ignored.

NOTES

[1]See the work of G.A. Kerkut, *Implications of Evolution*, New York: Pergamon, 1960; Norman Macbeth, *Darwin Retried*, Boston: Gambit, 1971; and Anthony Standon, *Science is a Sacred Cow*, New York: Dutton, 1950. The reason these books are not more widely known is they are critical of evolution on scientific grounds and challenge the establishment. Not one is a professed Christian or even Theist.

[2]Ervin Nemesszeghy and John Russell, *Theology of Evolution*, Notre Dame: Fides, 1971, p. 9.

[3]*Ibid*., 25.

[4]Ludwig Ott, *Fundamentals of Catholic Dogma*, Eng. ed. by James Bastible, tr. from the German by Patrick Lynch, St. Louis: Herder, 1964, p. 79.

[5]In 1935 George McCready Price wrote: "We have forever outgrown the narrow view of the fixity of 'species,' as held by Agassiz and others; but why may we not expect a return to a reasonable view of the original creation of the classes, orders, or perhaps even the great families of plants and animals? All the facts as we now know them agree perfectly with such a primary creation of representatives of the great families. . . ." *Rep. on Evolution*, N.Y.: Christ. Evid. Lg., 1971, p. 118.

[6]Barney R. Neufeld has a series of postulates of Creation theory. He avoids identification of biological taxa with the Biblical kind. Postulates 9, 10 & 11 state "The organisms existing today are the descendants of those brought into being during the initial creation period and which survived the world catastrophe [Noah's flood]. . . . The present characteristics and distribution of organisms are the result of the dynamic interactions between the organisms and the geophysical, ecological and geological history of the earth. The biological world as we know it is well described as 'descent with modification.'" *Readings in Creationism*, sel. by H.G. Coffin, Takoma Park: Home Study Inst., 1974, p. 2. See also H.G. Coffin, *Creation: The Evidence from Science*, Anacortes: Life Origins Foundation, not earlier than 1970; Dr. Henry Morris, *Scientific Creationism*, San Diego: Creation-Life Pubs., 1974; Marshall & Sandra Hall, *The Truth: God or Evolution?*, Nutley, N.J.: Craig Pr., 1974, p. 2611. See also John W. Klotz, *Genes, Genesis and Evolution*, 2nd ed., St. Louis: Concordia, 1970, pp. 48-81.

[7]See almost any issue of *Creation Research Society Quarterly*. The Sept., 1974 issue contains an interesting article on the variety of canids; in Dec., 1974, there is a speciation note on the modern Hoatzin, strangely similar to Archaeopteryx of 'missing link' fame between reptile and bird.

[8]Herbert H. Ross, *Understanding Evolution*, Englewood Cliffs, N.J.: Prentice-Hall, 1966, p. 44.

[9]George Gaylord Simpson, *The Meaning of Evolution*, Rev. ed., New York: Bantam Books, 1971, p. 220.

[10]Creationism is here even more uniformitarian (the theory that geological change is gradual). Uniformitarianism is mainly opposed to catastrophism. See Morris, *Scientific Creationism*, pp. 91-130, chap. V. Also, uniformitarian principles form the basis of modern dating methods by which the geological sciences support evolutionary theory with long ages of millions of years. However, the terminology of geology is catastrophic: it speaks of folding, uplift, etc. Modern processes provide evidence that the geological features of the earth do not require millions of years. E.g. the Island of Surtsey formed within

hours. See Harold Coffin, *Creation – Accident or Design?*, Washington, D.C.: Review and Herald Pub. Ass., 1969, pp. 129ff.

[11]*Readings in Creationism*, p. 37.

[12]G.A. Kerkut (see n. l) has shown the speculative nature of the horse series. Also P. Haigh, *What's Wrong with Evolution*, Caldwell, Idaho: Bible Sci., 1975, pp. 10-12.

[13]Theodosius Dobzhansky, *Genetic Diversity and Human Equality*, New York: Basic Books, 1973.

[14]In *Readings in Creationism*, see Coffin, *Creation: the Evidence from Science*, pp. 5-6.

[15]See Duane T. Gish, *Evolution: The Fossils Say No!* , 2nd ed., San Diego: ICR Pub. Co., 1973, 72-111, and *Evidence Against Evolution*, Wheaton, Ill.: Tyndale House, 1972, *passim*. Also, Pastor Walter Lang, *Five Minutes With the Bible and Science* (*Fossil Men*, vol. 5, no. 3, March 1975).

[16]The case of the peppered moth is much publicized as a 'proof' of progressive evolution. In England before 1845 only white specimens of this moth were known but as the tree trunks became darkened from the soot of the factories, the white moths disappeared and gave way to black ones as birds devoured all the light insects easily spotted. Harold Coffin sees this as a true example of natural selection (survival of individuals with mutated genes) & Duane Gish claims it is an e.g. of pop. shift.

[17]J.C. Whitcomb and H.M. Morris, *The Genesis Flood* (Grand Rapids, Mich: Baker Book House, 1961).

[18]*Scientific Creationism*, 23, See Chap. III, 37-58.

[19]This means that the earth cannot be more than 10,000 years old at the most. See *Scientific Creationism*, 157. Creationists have done scholarly work on dating methods. The classic at this time is Melvin A. Cook's *Prehistory and Earth Models*, London: Max Parrish, 1966. Also Harold Slusher, *Critique of Radiometric Dating*, Tech. Monograph #2, San Diego: Inst. for Creation Research, 1973. It adds up to much evidence for a young earth.

[20]On entropy in open systems, see Morris, *Scientific Creationism*, p. 42ff.

[21]A detailed discussion is found in Haigh, see n. 12.

[22]Bruce Wallace, *Chromosomes, Giant Molecules, and Evolution*, New York: Norton, 1966, 74.

[23]*Ibid.*, 5.

[24]Jacob Bronowski, *Ascent of Man*, Boston: Little, Brown, 1973, 314.

[25]*Ibid.*

[26]*Scientific Creationism*, 69f.

[27]*Ibid.*, 70.

[28]*Ibid.*, 57. And John W. Klotz, (see n. 6) 245-321, esp. 288-290. See also Wm. J. Tinkle, *Heredity*, Grand Rapids: Zondervan, 1970; and Norman Macbeth, *Darwin Retried*, esp. 29-39. Macbeth is an acknowledged skeptic, with no theistic axe to grind.

Note too that Lamarck's theory of the inheritance of acquired characteristics, Haeckel's biogenetic law that ontogeny recapitulates phylogeny, and vestigial organs have all been rejected by modern biologists, partly due to the Catholic W.R. Thompson.

[29]See Fr. Edwin Garvey, C.S.B., *Process Theology and Secularization*, Houston: Lumen Christi Press, 1972.

[30]*Rome and the Study of Scripture*, 7th ed., rev. enl. St. Meinrad, Ind: Abbey Press, 1964, p. 114. Also see Paul Card. Taguchi, *The Study of Sacred Scripture* in *L'Osservatore Romano*, Eng. ed. 5/15/75, p5.

[31]Ludwig Ott, *op. cit.*, 97.

[32]*Op. cit.*, 71.

[33]*Op. cit.*, 53 (see note 28).

[34]St. Thomas Aquinas, *Summa Theologica*, I-I, q. 8, a. 1. Reply obj. 2. Thomas says the soul "contains" man. The Latin is "continet." A note in the Blackfriars ed. says this means "holds together."