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Modern Catholic Thought on the Evolution of Man's Body

BERNARD J. LeFROIS

EVOLUTION is an unfortunate word. Many a Catholic shies away from it because of the implications bound up with the use of it in godless materialistic publications. Yet every Catholic should clarify his concepts on the meaning of evolution and be cognizant of the present-day Catholic standpoint in the matter.

Geologists all affirm there must have been a development of life on earth, and anthropologists point to certain developments even in the body of fossilized man. The *possibility* of man's body coming from preexistent organized matter is admitted by Pope Pius XII himself (as will be evident later on in this article). Truth has nothing to fear from the discoveries of science, for God is the author of all truth. The question is, *what does* science tell us for certain about the evolution of man's body? And how does that square with the truths revealed to us in Holy Scripture or proposed to us by the magisterium of the Church?

CONCEPTS CLARIFIED

At the very outset a necessary distinction must be made between materialistic evolution and theistic evolution. Mate-

rialistic evolution maintains that the whole man, body and soul (if it admits such a principle) evolved as a result of pure chance. Such a tenet is scientifically erroneous, philosophically absurd and theologically untenable. It is scientifically erroneous, for it contradicts biological finalism which is an admitted fact. The appearance of an entirely new structure or organ (the fundamental point of evolution) cannot be adequately explained if biological finalism is denied. Moreover, the finalism of reflex actions in man and especially his numerous complex instinctive operations presuppose intelligence, which in turn presupposes the existence of a spiritual being.¹

Theistic evolution, on the other hand, takes it for granted that God is working with His creatures. It maintains that the soul of man was created by God and directly infused by Him, whereas the body of man arose through finalistic development. The gradual rise of new organisms follows a plan of God. He entrusted the general realization of this plan to a conjunction of natural forces which develop organisms in a determined direction according to the function in nature assigned to each organic group.² Yet it is to be assumed that God, before infusing the human soul, predisposed the preexisting living matter for its reception. No mere animal can adapt its organism to the infusion of a spiritual soul without the intervention of a higher cause. Then the effect remains proportionate to the cause.³

HYPOTHESIS OF THEISTIC EVOLUTION REASONABLE

Glance for a moment into the animal kingdom. The primary division of that kingdom is into "phyla" (or types). Each phylum includes organisms that are *alike in some fundamental anatomical characteristics*, such as vertebrates, invertebrates with jointed legs, worms (annelida), mollusca etc. The phyla in turn are divided into "classes" within which the resemblances

¹ V. Marcozzi, "The Origin of Man According to Science" *Theology Digest* 2 (1954) 44-45.

² B. Melendez, "Teleogenesis" *Theology Digest* 1 (1953) 124.

³ M. Gruenthaner, S.J., "Evolution and the Scriptures" *Catholic Biblical Quarterly* 13 (1951) 21. The nature of this special intervention is discussed in the last part of this article.

are still closer. Thus phylum "vertebrates" includes the classes: fish, amphibians, reptiles, birds, mammals. Classes are further divided into "orders." Class "mammal" includes hoofed mammals, carnivores, rodents, primates. Orders are separated into "families." The order "primate" includes the families: monkey, lemures, apes, man. Families are made up of "genera" which in turn have various "species." A species (in the biological sense) is a group of individuals each of which has a similar complexity of hereditary qualities (morphological qualities) and generates young like itself (physiological qualities). For instance, the family "canines" has under it the genera wolves and dogs. There are twenty-two species of dog.

In this animal kingdom evolution from one phylum to another is as yet pure hypothesis.⁴ There is no proof at hand. Evolution between orders and classes is still problematical. But beyond a doubt evolution has been proved for some species, genera and families.⁵

Biologically, man is classified in the same "family" group as some other primates; paleontology is thus justified in posing the question whether man's body has developed from other organic structures. Both morphologically and physiologically man's body shows a strict continuity with lower forms of life. It has a substantially similar circulatory, respiratory and digestive system, similar muscles, bones, teeth, similar blood groups, sex life and so forth. These observable facts lead one to suspect that between the human organism and that of the anthropoid apes there exists not only an ideological nexus in the mind of God but also at least an indirect physical and genetic bond.⁶

⁴ In recent years it has frequently been stated that scientists are gradually discarding the hypothesis of evolution or transformism. In 1947 V. Anderez, S.J. made a summary of the views of leading scientists all over the world. According to this summary, the majority of biologists remain transformists, though preferring moderate views as to its extent and degree of certitude. Cf. H. F. Davis, "Organic Evolution" *Clergy Review* 37 (1952) 480.

⁵ E. C. Messenger, *Theology and Evolution* (Westminster, Md., 1949) 192. To get the viewpoint of the scientist who covers the whole history of the subject, see P. Fothergill, *Historical Aspects of Organic Evolution* (London 1952).

⁶ V. Marozzi, *art. cit.* 45.

THE EVIDENCE OF THE FOSSILS

Here comes the real surprise. Anyone who studies the fossils of apes and men is amazed at their similarity. Morphological differences greatly diminish when the fossils of both are studied. So similar are they in some cases that doubt and controversy have arisen as to whether the given fossils belong to apes or to men. At times these difficulties are increased by the fact that the skeletal remains are fragmentary.⁷ The fossils we possess today can be divided into 4 groups:⁸

1) *Australopithecus* group: true apes that resemble men. Morphologically closer to man than present-day apes. No protruding brow-ridges (or very little so). Cranial capacity 600 cc. (modern apes 400-500). Lived in Tertiary, a million years ago.⁹

2) *Anthropus* group: true men with a pronounced resemblance to apes. Massive protruding brow-ridges, low forehead, head carried forward, receding chin, protruding mouth. Brain capacity 1000-1300 cc. Lived in First Interglacial.¹⁰

3) Neanderthal group: true men, but with some simian characteristics. It is subdivided into Pre-Neanderthal with brain capacity 1200 cc., and Neanderthal proper, whose chief characteristics are the massive bones, large protruding brow-

⁷ *Ibid.*

⁸ P. Overhage, S.J., "Problematische Menschheitsentfaltung im Eiszeitalter" *Stimmen der Zeit* 155 (1954) 23-28. He has a series of articles on our subject in the same periodical for the years 1952, 1953, 1954, 1955. See also C. Vollert S.J., "Evolution of the Human Body" *Catholic Mind* 50 (1952) 135-154.

⁹ Represented by *Prometheus*, *Paranthropus*, *Plesianthropus* etc. in S. Africa, 1924: skull with well preserved face. Other fragments: 1936, 1938, 1947. Also *Meganthropus*, found 1941 in Sangiran, Java and in Njarasa Lake, Africa: several incomplete skulls.

¹⁰ Represented by *Pithecanthropus erectus* (1891, Trinil, Java): top of skull, 2 molars, thighbone. Heidelberg man (1907, Germany): massive jaw, lacking chin. *Pithecanthropus pekinensis* (1927-28, China): remains of 25 adults and 15 children. *Pithecanthropus njarasensis* (Njarasa Lake, Africa). *Pithecanthropus robustus* (1936-41, Sangiran, Java): 3 complete skulls. *Pithecanthropus soloensis* (Ngandong, Java): 11 craniums.

ridges, low forehead, lack of cervical curvature. Brain capacity 1400-1600 cc. Lived as early as Second Interglacial.¹¹

4) Sapiens group (sapiens not in the philosophical but biological classification): men of present-day type. Also subdivided into Pre-Sapiens with brain capacity varying from 1350 to 1470, and Sapiens proper with straight posture, high forehead, well-defined chin, brain capacity 1550. Lived as early as First Interglacial.¹²

A superficial examination of these groups of fossils easily gives the impression that there took place a definite development from anthropoid apes (*Australopithecus*) to true men that are still ape-like (*Anthropus-Pithecanthropus*), who gradually threw off all simian characteristics (*Neanderthal* group), resulting in the present-day type of man (*Sapiens* group). Many periodicals and even textbooks jumped to these conclusions without further ado. Even prominent professors as recently as 1949 considered the case definitely established.¹³

Today, careful scientific study of the fossils shows that such conclusions were overhasty and oversimplified. The ever-increasing fossil finds in the last few years have augmented the problem and made it more complicated instead of simpler. As can be seen from the accompanying survey (see Table I) the present-day *Sapiens*-type is considered by anthropologists to be

¹¹ Representatives for the Pre-Neanderthal group are several skulls at Steinheim, Germany; Ehringsdorf, near Weimar, Germany; Saccopastore near Rome; Krapina in Croatia; and at Gibraltar. For the Neanderthal group proper we have over 200 specimens today, both adult and children, discovered since 1857 in various countries: Spain, France (Le Moustier, La Chapelle, La Ferrassie, La Quina), Belgium (Spy), Germany (Neander Valley, hence the name Neanderthal), Hungary (Suba), Italy (Guattari caves, Circeo mountains), Croatia, Crimea, Palestine.

¹² Representatives of the Pre-Sapiens group are the Swanscombe man in England; 2 skulls found in 1947 in Fontechavade, France; 3 skulls in 1951 in Iran; fragments of skulls in Kanjera, E. Africa, and a jaw in Kanam, E. Africa; other finds in Keilor, Australia. There is some uncertainty in dating the latter finds. Representatives of the *Sapiens* group proper are very numerous. Cro-Magnon, France: 5 skulls. Moravia: 14 complete skulls, etc.

¹³ Thus, for example, Professor Eickstedt as recently as 1949 considered the case closed. He maintained that the stages of the bodily development of primitive man were clearly recognizable: see P. Overhage, *art. cit.*, *Stimmen der Zeit* 155 (1954) 23.

TABLE I. Survey of Pre-Historical Fossil Finds.

Ice IV	Australopithecus Group	Anthropus Group	Neanderthal Group		Sapiens Group	
			Pre-Neanderth.	Neander Proper	Pre-Sapiens	Sapien Proper
(Wum)		Pithecanthropus njarasensis. (Africa)		Spain, France, Belgium, Germany, Italy, Croatia, Palestine, Crimea	Iran (?)	France Germany Moravia
Inter-glacial III		Pithecanthropus soloensis (Java)	Germany Italy Croatia Gibraltar	Nazareth) Palestine, (Carmel Nazareth)	France	
Ice III (Rits)			Germany		England Italy	
Inter-glacial II		Pithecanthropus erectus (Java). Pithecanthropus pekinensis (China)			Kanam, (?) (Africa) Kanjera (?) (Africa)	
Ice II (Mindel)		Heidelberg man				
Inter-glacial I	Paranthropus robustus (Africa) Meganthropus paleojavensis (Java) Meganthropus africanus (Africa)	Pithecanthropus robustus (Java)				
Ice I (Gunz)	Pleisanthropus transvaalensis (Africa)					
Tertiary Period	Tilanthropus capensis Paranthropus crassidens Australopithecus prometheus (all S. Africa)					

This survey is taken from the article of P. Overhage (p. 35) cited above. The Pittdown "finds" have been omitted.

just as old if not older than the Neanderthal type and perhaps even as old as the Anthropus-Pithecanthropus type. Hence the facts (that is, the fossils themselves) do not show the supposed chronological development from the ape-like types in the First Interglacial to the present-day type.

There remains the possibility of all three human types branching off from the Australopithecus group of apes at the close of the Tertiary. But in that hypothesis, how account for the simian characteristics of the Anthropus and Neanderthal groups, and for their absence in the Sapiens group which is older than Neanderthal and as old as Pithecanthropus? In fact the recent finds have made the matter more problematical than ever.¹⁴ However, science will have to reckon with countless more finds which unexcavated areas such as Mongolia, Tibet and Manchuria may someday open up. And since the evolution of man's body remains a hypothesis worthy of serious consideration, one should know both its theological and philosophical implications.

SCRIPTURE AND EVOLUTION

There are three passages or groups of passages that come in question: 1) The first is from Genesis 1.26-28. God said:

Let us make mankind in our image and likeness; and let them have dominion over the fish of the sea, and the birds of the air, the cattle, over all the wild animals and every creature that crawls on the earth. God created (*bara'*) man in his image. In the image of God he created him. Male and female he created (*bara'*) them. Then God blessed them and said to them: Be fruitful and multiply; fill the earth and subdue it.¹⁵

These verses come as a climax toward the end of the Hexaemeron or "Work of Six Days" which is a grand poem, composed according to Hebrew rhythm and artistic balance. In it the sacred writer sets forth his religious teaching clothed in poetic garb. In this text he states that man's appearance on earth was due to an act of God, for the Hebrew word *bara'* always

¹⁴ Cf. P. Overhage, *ibid.*; V. Marozzi, *art. cit.* 46.

¹⁵ *Confraternity Version of the Old Testament* (Paterson, N.J., 1952).

denoted divine activity. But there is no mention of the *manner* in which God did so.¹⁶ M. Gruenthaner S.J. puts it tersely thus:

According to this text, the newly created species of man consisted of two physically distinct individuals, opposite in sex, each of whom bore the likeness of God and received dominion over the earth and all it contains. It is especially noteworthy that the author speaks merely of the creation of man, without alluding explicitly to the formation of his constituent parts, the body and soul. Hence, as far as this text is concerned, God may have formed the bodies of the first man and his consort either from nothingness or from inorganic material or from some pre-existing sentient organism.¹⁷

2) The second account (Genesis 2.7) mentions man's constituent parts: body and the principle of life.

Then the Lord God formed (*yasar*) man out of the dust of the ground and breathed into his nostrils the breath of life, and man became a living being." (Confraternity OT).

This passage pictures the Lord as a sculptor making a clay statue of that which he is about to endow with life and then breathing life into his model through the nostrils. Since God is a pure Spirit, these expressions are evident anthropomorphisms which represent God in a manner that is intelligible to men. The sacred writer is giving us a popular account of the origin of man and is not concerned with a strictly scientific one, as Pope Pius XII expressly stated in *Humani Generis*.¹⁸ In simple language the sacred writer seems intent on the following points: a) the material for man's body was not created from nothingness but was already at hand when God imparted the human principle of life; b) this material was pliable in God's hands like clay in a maker of vases; c) its *human life* was entirely due to the principle of life imparted directly by God. Accordingly this passage of Scripture is not at all at odds with the hypothesis that man's body came from some pre-existing organized matter. It is surely time to relinquish out-

¹⁶ Cf. *A Catholic Commentary on Holy Scripture* (London and New York 1953), No. 1431, k.

¹⁷ M. Gruenthaner S.J., "Evolution and the Scriptures" *Catholic Biblical Quarterly* 13 (1951) 22.

¹⁸ AAS 42(1950) 577. See the complete wording further on in this article.

moded arguments against every form of evolution taken from textbooks printed more than thirty-five years ago. Those arguments invariably start from the premise that the above passage of Scripture must be taken in the literal proper sense of the words, which entirely neglects the literary form of the first chapters of Genesis so clearly mentioned in *Humani Generis* to be different from that of later historical books.

3) Later passages of Scripture all refer back to the account of Genesis. Thus Job 10.9; Tobias 8.8; Ecclesiastes 12.7; Sirach (Ecclesiasticus) 33.10; Wisdom 7.1; 1 Corinthians 15.47. All of them recapitulate the thought of Genesis 2.7 and must be explained in the light of the primary source from which they are derived. At most they prove that the *ultimate* source of man's body is the earth. They do not demonstrate that it is the *immediate* source.¹⁹

THE MAGISTERIUM OF THE CHURCH

In 1909 the Pontifical Biblical Commission issued the following statement:

We may not call in question the literal and historical meaning of Genesis ch. 1-3 where there is a question of the narration of facts which touch on the fundamental teachings of the Christian religion as, for example, the creation of all things by God in the beginning of time, the special creation of man (*peculiaris creatio hominis*), the formation of the first woman from man etc.²⁰

The exact wording of the decree should be noted. It does not speak of a direct, immediate, specific creation but of a *peculiaris creatio*. If this decree requires that the divine creative act be extended to both body and soul, it is fully satisfied by postulating the creation of the soul from nothingness and at the most a special dispositive action of God with respect to the body. A preexisting organism is not excluded, for nothing is said with regard to the manner. It should also be noted that in the decree the formation of man and the formation of the first woman are mentioned apart and hence are to be treated as two distinct questions. One is subsequent to the other and not necessarily identical in their make-up.

¹⁹ M. Gruenthaner, *art. cit.* 24.

²⁰ AAS 1 (1909) 567ff; Denziger 2123.

In 1941 Pope Pius XII addressed the Pontifical academies thus:

The manifold researches of paleontology as well as biology and morphology with respect to certain problems of the origin of man have hitherto brought forward nothing that is positively clear and certain. Nothing remains, therefore, than to leave to the future the answer to the question whether science enlightened and guided by revelation will sometime be able to give secure and definite results on a subject of such importance.²¹

Such a statement shows the open mind of the Holy Father with regard to the question under consideration. If the matter were incompatible with theology, he would never have expressed himself in this manner.

In 1950 Pius XII issued the encyclical *Humani Generis* in which he declared:

Accordingly 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). However, this must be done in such a way that the reasons for both opinions, that is, those favorable and those unfavorable to evolution, be weighed and judged with the necessary seriousness, moderation and measure, and provided that all are prepared to submit to the judgment of the Church.²²

This is the clearest statement yet issued by the magisterium on the question of evolution. Accordingly the latter is open to discussion by competent men, provided the proper precautions are taken. The Holy Father then gives the reason for his stand. He repeats verbatim a statement of the Pontifical Biblical Commission in 1948 which he incorporates into his encyclical:

Those first eleven chapters of Genesis contain, in simple and figurative language, adapted to the mentality of a people of lesser culture, the principal truths fundamental for our eternal salvation, and a popular account of the origin of the human race and of the chosen people.²³

²¹ AAS 33 (1941) 506. Quoted by M. Gruenthaner, *art. cit.* 23.

²² AAS 42 (1950) 575.

²³ *Ibid.*

Memorable words and worthy of emphasis. They contain the solution to many problems in the first eleven chapters of Genesis. Accordingly Genesis 2.7 is a popular account and does not purport to describe things scientifically, and hence does not exclude the evolution of man's body.²⁴ It is quite another thing, however, to seek for proof for evolution in Scripture or the magisterium. That is not the field of either of them. It belongs to the field of the scientist. But even here the Holy Father offers a caution:

Those go too far...who act as if the origin of the human body from pre-existing and living matter were already fully demonstrated by the facts discovered up to now and by reasoning on them; as if there were nothing in the sources of divine revelation which demanded the greatest reserve and caution in this controversy.²⁵

A Catholic may proceed with an open mind with the study of evolution. He is cautioned against accepting the conclusions of scientists as *certain* and as established facts when they are not definitely proven to be so.

LIGHT FROM PHILOSOPHY

The scientist is not concerned with the problems of necessity and possibility in the mode of formation of the cosmos, but the philosopher is. The conclusions of the scientist are mainly the result of the inductive process and so he must avoid all undue generalizations. The philosopher on the other hand seeks to discover the principles that govern created things, their causes and their properties. He has to limit himself to problems of necessity (what *must* take place with given universal principles at work) and of possibility (what *can* take place), while the factual issues which imply an element of contingency (what *did* take place in certain circumstances) are settled by the scientist.²⁶

²⁴ M. Gruenthaner, *art. cit.* 23.

²⁵ AAS 42 (1950) 576.

²⁶ L. Dufault, "Philosophical and Biological Implications of Evolution" *Proceedings of the American Catholic Philosophical Association* 26 (1952) 74. The author in a lengthy and somewhat difficult article endeavors to show that finalistic evolution is entirely consonant with Thomistic philosophy. I have been able to give only a very brief summary of his presentation here.

From the angle of philosophy the usual objection to evolution is that an inferior cause cannot produce a superior being, because an effect must be in proportion to the cause. If lower forms of life produced higher forms, the effect would be greater than the cause. And to appeal to a divine intervention at various junctures of the development would seem to go beyond the power of nature and into the realm of the miraculous and hence no longer in the domain of the philosopher.

But need it be intervention? Cannot God work together with the creatures He has created in order to produce still higher forms of life? Even the philosopher admits certain obediential powers in creatures, powers which the creatures cannot bring into action by itself but which are brought into action by a superior power acting on it. What the creature cannot accomplish as a principal cause of its own actions can be accomplished when the creature is a subordinate and instrumental cause in the hands of the Creator, God producing (not creating from nothing) together with His creature a higher form of life out of the lower.²⁷ This would not be transformism as it is usually known, but rather a progressive evolution: one being is not transformed into another but is the subordinate and instrumental cause of bringing about a higher form of life.²⁸ Facts today show that evolution is eminently finalistic.

Such theistic and teleological evolution conceives the cosmos as a work of divine art. God was at work from the very beginning, preparing for the coming of man. Everything in the universe strove upward toward the realization of that one goal: man! The almighty creative Word had impressed this restless striving on His creation. By no means is man's dignity degraded but clearly manifested in that he is the final perfection toward which millions of years were striving in the patient effort of life. Man is king of creation in the fullest sense: all other things were called into being to make possible the appearance of man. Without man none of them has a reason to exist.²⁹

²⁷ N. Luyton O.P., "Philosophical Implications of Evolution" *New Scholasticism* 23 (1951) 307f.

²⁸ L. Dufault, *art. cit.* 78.

²⁹ N. Luyton, *art. cit.* 310f.

Far from detracting from Catholic theological thought and Thomistic philosophy, progressive evolution (in the sense explained above) is in perfect harmony with philosophical principle and with the workings of Divine Wisdom in the supernatural order. In the latter order also, the omnipotent Uncreated Cause of all things deigns to use his creatures as secondary and instrumental causes to bring forth a higher effect, as is evidenced in the charism of inspiration in the prophets (God's mouths) and sacred writers (God's authors), as well as in the ministry of Christ's priests (instruments of the Holy Spirit). Above all it is evidenced in the instrumentality of the Divine Motherhood and of the supremely excellent Humanity of Christ, by means of which the children of God are redeemed, sanctified, fed with Divine Life and glorified with the vision and possession of God "so as to be filled unto all the plenitude of God."³⁰

³⁰ Eph. 3. 19

PHILIPPINE WEATHER

The climate of the Philippines is little distinguished from that which characterizes many other tropical regions of the East. It is described in a Spanish proverb as—

*Seis meses de polvo,
Seis meses de lodo,
Seis meses de todo.*

"Six months of dust, six months of mud, six months of everything;"—though it may generally be stated that the rainy season lasts one half, and the dry season the other half of the year. There are however, as the distich says, months of uncertainty, in which humidity invades the ordinary time of drought, and drought that of humidity. But from June to November the country is inundated, the roads are for the most part impassable, and travelling in the interior is difficult and disagreeable.

Sir John Bowring A Visit to the
Philippine Islands (London 1859) p. 73.