BIOLOGY

Section 2. Biology of Urantia

Point I. Mind and Evolution

Point A. Three Levels of Reason

Point 1. There are three clearly expressed levels of creation and development of life.
(65:0.2) There are therefore three distinct levels of life creation and development:
(65:0.3) 1. Field of physical energy - creating the conditions for the appearance of intelligence.
(65:0.4) 2. Service of the mind by the auxiliary spirits - creating the conditions for the emergence of spiritual faculties.
(65:0.5) 3. The endowment of the mortal mind with spirit, culminating in its consecration to the Adjuster of Consciousness.

Point 2. Passing through three levels of reason.
(36:5.15) As the living mind acquires the ability to learn from experience, it comes under the tutelage of the Chief Physical Regulators. Until the creature's mind has developed the ability to perceive divinity and to worship the Deity, it is referred to the exclusive sphere of influence of the auxiliary spirits. As soon as the creature's mind detects a spiritual response, it becomes the bearer of the supermind, as it is instantly embraced by the spiritual cycles of the Mother Spirit of the local universe.

Point 3. Three evolutionary levels of intelligence.
(42:10.2) The universal non-spiritual energies are reuniting into the living mind systems distinct from the mind of the Creator—this reunification takes place at various levels, some of which may be described as follows:
(42:10.3) **1.** Types of intelligence preceding the auxiliary spirit. This non-empirical level of intelligence on the inhabited worlds is looked after by the Master Physical Regulators. It is a mechanical mind - the unteachable intelligence of the most primitive forms of material life, but the unteachable mind functions on many levels beyond the level of primitive planetary life.
(42:10.4) **2.** The assistant spirits of reason refer to the service of the Mother Spirit of the local universe, operating through the seven assistant spirits of reason on the trainable [or non-mechanical] level of the material mind. At this level material intelligence acquires empirical experience: as sub-human [or animal] intelligence - in the first five subsidiary spirits; as human [or moral] intellect - in the seven spirits; as superhuman [or intermediate creatures] - in the two last spirits.
(42:10.5) **3.** Types of Evolving Morontia Mind--the expanding consciousness of evolving personalities at the ascension of the local universe, a joint gift of the local universe Mother Spirit and the Creator Son. This level of intelligence presupposes the creation of a morontia-type life shell - a synthesis of the material and the spiritual, accomplished by the Morontia Energy Controllers of the local universe. The morontia mind in its own way functions in response to each of our 570 morontia lives, demonstrating an increasing ability to unite with the cosmic mind at higher levels of attainment. Such is the evolutionary path of mortal creatures, but the intelligence of the non-morontia categories is also consecrated by the Universal Son and the Universal Spirit to the non-morontia children of the local creations.

Point B. Field of physical energy

Point 1. There is a threefold creative principle relating to the manifestation of a mechanism of reason.
(65:0.1) The basic evolutionary material life, the life until the appearance of reason, is determined by the formulations of the Chief Physical Regulators and the life-creating ministry of the Seven Chief Spirits in conjunction with the active participation of the authorized Life Carriers. As a result of the concerted activity of this triple creative principle, the physical conditions necessary for the functioning of reason develop in the organism - the material mechanisms that allow one to react reasonably to the impact of the external environment and later - to the internal impacts arising in the mind itself.

Point 2. Nature and Government of the Subhuman Levels of Reason.
(65:0.6) The mechanical, unteachable levels of the organism's response to the impact of the environment refer to the realm of physical regulators. The helping spirits of the mind activate and regulate the adaptive - or non-mechanical, learnable types of mind, that is, those response mechanisms that enable the organism to learn from experience. And as spirit helpers similarly manipulate the potentialities of reason, so the Life Carriers largely and at

their own discretion govern the exogenous aspects of evolutionary processes until the emergence of human will—the ability to know God and the ability to willingly worship Him.

Point C. The service of reason performed by the auxiliary spirits

Point 1. Similarity of auxiliary spirits to energy centers.
(36:5.14) These assistants of reason, belonging to the Mother Spirit of the local universe, have as much to the life of intelligent creatures as energy centers and physical regulators do to the inanimate forces of the universe. They perform invaluable service in the mind circuits of the inhabited worlds, and successfully co-operate with the Chief Physical Regulators, who also serve as regulators of the ruling levels of mind below the spheres of influence of the auxiliary spirits—the unteachable or mechanical levels. reason.

Point 2. Functioning of the auxiliary spirits on the animal level.
(65:7.6) The acquisition of the potential ability to learn from experience marks the beginning of the functioning of the auxiliary spirits, from the lower intelligence of the primitive and invisible beings to the higher types of the evolutionary spectrum of human creatures. These spirits are the source and model for behavior in the rest of the more or less mysterious and not fully understood quick reactions of the mind to the material environment. Long must this devoted and unfailingly reliable influence continue its preliminary tutelage before the animal mind reaches human levels of spiritual receptivity.

Point 3. Animal instinctual response and human behavior.
(16:7.2) The selective responses of the animal are reduced to the motor level of behavior. Apparent anticipation in higher animals exists at the motor level and usually occurs as a result of motor trial and error. Man is capable of benefiting from scientific, moral and spiritual predictions preceding any research or experiment.

Point 4. Only the person is capable of knowing what he is doing even before the action is performed.
(16:7.3) Only the individual is capable of knowing what he is doing even before the act is done; only the personality has the prior experience of understanding. Personality is capable of thinking before acting; therefore she can learn by thinking as well as by doing. The impersonal animal learns usually only by experience.

Point 5. The moral being remains rational.
(16:7.4) Accumulated experience allows the animal to consider different paths to the goal and choose a course of action; but the person is able to consider the goal itself and draw conclusions about its dignity, about its value. Intelligence can also choose the best means to achieve ends; but the moral being possesses insight, enabling him to orientate himself both in the ends and in the means. Moreover, by choosing virtue, the moral being remains rational. It knows what it's doing, why it's doing it, where it's going, and how it's going to get there.

Point 6. If a person fails to orient himself in the choice of goals on his mortal path, he becomes an animal.
(16:7.5) If man fails to orient himself in the choice of goals on his mortal path, he descends to the level of animal existence. He has not been able to avail himself of the superior advantages of material intelligence, moral feeling, and spiritual insight, which are an inalienable part of the cosmic intelligence with which he is endowed as a personal creature.

Point D. Cosmic Intelligence

Point 1. Cosmic intelligence is ultimate intelligence.
(42:10.6) The Cosmic Mind is the sevenfold manifold mind of time and space, each aspect of which is presided over by one of the Seven Master Spirits in one of the seven superuniverses. Cosmic intelligence encompasses all levels of ultimate intelligence, empirically aligning with the levels of evolutionary divinity of the Supreme Intelligence and transcendentally with the existential levels of absolute intelligence, the immediate circles of the Joint Doer.

Point E. Absolute Reason

Point 1. The absolute intelligence of Heaven and the intellectual-gravitational authority of the Co-Executive.
(42:10.7) In Paradise reason is absolute; in Havona - absonite; in Orwonton - final. Mind always presupposes the presence and activity of living guardianship and the presence of various energy systems, and this is true of all levels and all types of mind. But beyond the limits of cosmic intelligence, it becomes increasingly difficult to describe the relationship of intelligence to non-spiritual energy. The Havonian mind is sub-absolute but super-evolutionary; being existential-empirical, it is closer to the Absonite level than any other concept revealed to you. The heavenly

mind is inaccessible to human understanding; it is existential, extra-spatial and extra-time. Yet all these levels of reason are overshadowed by the universal presence of the Co-Doer - by the intellectual-gravitational authority of the God of reason in Heaven.

Point II. Implantation of life by the Life Bearers
(65:1.6) In preparation for a new implantation of life and selecting suitable regions for it, the Life Carriers convene a commission of archangels. This Life Carrier transformation group consists of ten categories of diverse personalities, including the physical regulators and their partners. It is presided over by the head of the archangels, acting in this capacity at the behest of Gabriel and with the approval of the Eternal Ancient. Once plugged into the appropriate circuits, these beings are capable of modifying the Life Carriers in such a way as to immediately allow them to operate on the physical electrochemical levels.

Point A. Conditions necessary for the formation of life on Urantia

Point 1. Life can only be initiated in a suitable environment.
(58:1.2) It is necessary to emphasize that the Life Carriers are incapable of initiating life until the sphere is ready for the beginning of the evolutionary cycle. Nor can we ensure that the development of life occurs at a faster rate than the physical progress of the planet that supports and accommodates evolving life allows.

Point 2. Life on Urantia is based on sodium chloride.
(58:1.3) The Life Carriers of Satania created a prototype of life based on sodium chloride; therefore any steps towards the implantation of life were impossible until the ocean water became sufficiently salty. The Urantian type of protoplasm is capable of existence only in a suitable salt solution. All ancient life, both plant and animal, emerged in a saline environment. And even the more highly organized land animals could not continue to live if this necessary salt solution did not circulate through their body in the blood circulation, which freely washes - literally immerses - every smallest living cell in this "salty sea".

Point 3. Primitive life circulated in salt water.
(58:1.4) Your primitive ancestors circulated freely in the salty ocean. Today, this same ocean-like salt solution circulates peacefully in your bodies, freely washing each individual cell with a chemical solution comparable in all essential parameters to the salt water that stimulated the first protoplasmic reactions of the first living cells on the planet.

Point B. Three simultaneous implantations of life

Point 1. Life was not brought to Urantia. He was born on this planet.
(58:4.1) It should not trouble you that we are called Life Bearers. We are capable of carrying life and delivering it to the planets, but we did not bring life to Urantia with us. Urantian life is unique - it originated on this planet. This realm is a world for altered life, and all emergent life was formulated by us right here on the planet itself. And in all Satania, even in all Nebadon, there is not a single world with such life as Urantia.

Point 2. Three life implantations were done on different continents.
(58:4.4) We implanted the primitive form of marine life in the sheltered tropical bays of the central seas of the east-west rift forming between the drifting continents. By carrying out three implantations of marine life, we wanted to make sure that after the separation of the land, the shallow seas of each vast continent would contain this life. We predicted that in the later age of terrestrial life, vast oceans would separate these drifting landmasses.

Point III. Biological History of Urantia

Item A. Timeline of Urantia Biology

Point 1. Five main biological periods.
(59:0.1) In our conceptions, the history of Urantia began about one billion years ago and covers five great epochs:
(59:0.2) **1.** The era before the appearance of life covers the first four hundred and fifty million years - roughly from the time the planet reached its present size until the appearance of life. Your scholars call this period the Archaic [or Archaic Era].

(59:0.3) **2.** The age of origin of life continues for the next hundred and fifty million years. This epoch separates the era before the emergence of life or the era of cataclysms from the next period of more developed marine life. This era is known to your explorers as the Proterozoic [or Algonic Era].
(59:0.4) **3.** The era of marine life spans the next two hundred and fifty million years and is known to you as the Paleozoic [or Paleozoic Era].
(59:0.5) **4.** The era of early terrestrial life continues for the next hundred million years and is known as the Mesozoic [or Mesozoic Era.]
(59:0.6) 5. The Age of Mammals covers the next fifty million years. This last era is known as the Cenozoic [or Neozoic Era].

Point B. Era of origin of life

Point 1. Life was simultaneously introduced into three different seas 550,000,000 years ago.
(58:4.2) 550,000,000 years ago the Life Carrier corps returned to Urantia. In cooperation with the spiritual and super-physical forces we organized and implanted the original prototypes of life in this world and placed it in its hospitable waters. Until the age of the Planetary Prince Caligastia, all planetary life [except for extra-planetary individuals] traces its origin to three initial, identical, and simultaneous implantations of marine life. These three implantations of life were called central [or Eurasian-African], eastern [or Australasian], and western, including Greenland and the Americas.

Point 2. 500,000,000 years ago primitive marine flora became established on Urantia.
(58:4.3) 500,000,000 years ago the primitive marine flora became firmly established on Urantia. Greenland and the Arctic land mass, along with North and South America, began their long and slow westward drift. Africa slowly moved south, creating between itself and the mother body an east-west slope - the Mediterranean Basin. Antarctica, Australia, and the land that the Pacific Islands show separated to the south and east and have since drifted a great distance.

Point 3. The transition from plant to animal life was 450,000,000 years ago.
(58:6.1) 450,000,000 years ago the transition from plant to animal life took place. This metamorphosis took place in the shallow, sheltered tropical bays and lagoons located along the coastlines of the drifting continents. And this process, all the phases of which were laid down in the original prototypes of life, proceeded gradually. There were many intermediate stages between the primitive plant forms and the later, well-formed animal organisms. To this day, transient mold fungi have been preserved, which cannot be attributed to either plants or animals.

Point 4. Only a few representatives of the ancient types of marine plants involved in these epochal changes have survived.
(65:2.2) Only a few representatives of the ancient types of marine plants which participated in those epochal changes which led to the appearance of the borderline animal-like organisms by which the gradual transition from plant to animal life have been preserved to this day. These early transitional forms closely resembled modern algae, though they were not identical to them; they were very true frontier organisms: being neither plants nor animals, they accordingly gave rise to true animal forms of life.

Point 5. Nature, evolution and regression of bacteria.
(65:2.3) Bacteria, the simple plant organisms of a very primitive type, have hardly changed since the time of the appearance of life. A certain regression is even observed in them, manifested in parasitic properties. Many fungi are also an example of a reverse movement in evolution and represent plants that have lost the ability to synthesize chlorophyll and have become, to a greater or lesser extent, parasites. And indeed, most disease-causing bacteria and their viral helpers belong to this group of modified parasitic fungi. In the course of the eons, the entire vast kingdom of plants has followed the path of evolutionary development from the ancestors from which bacteria have also descended.

Point 6. Changes between large groups of animals occurred suddenly. There were never intermediate units.
(58:6.2) Although the evolution of vegetable life into animal life may be traced, although gradually changing orders of plants and animals have been found leading successively from the simplest to the most complex and advanced organisms, you will not be able to find such connecting links neither between the great divisions of the animal kingdom, nor between the higher of the pre-human animal types and the primitive men of the human races. The so-called "missing links" will remain missing for the simple reason that they never existed.
(58:6.3) They are not formed by the gradual accumulation of minor deviations; they appear as fully formed new categories of life and appear suddenly.

(58:6.4) The sudden appearance of new species and different categories of living organisms is an entirely biological and entirely natural phenomenon. There is nothing supernatural associated with these genetic mutations.

Point 7. Adaptation of animal life to salt and fresh water.
(58:6.5) At a suitable level of ocean salinity, it was a relatively simple task to produce animal life and allow the salt water to circulate over the bodies of marine animals. But as the oceans shrank and salt concentrations skyrocketed, these same animals evolved the ability to lower the salt content of their body fluids—just as organisms that learned to live in fresh water acquired the ability to maintain sodium levels. chloride in their body fluids using elaborate salt retention methods.

Point 8. Eternal adaptation of life to changes in the environment.
(58:6.6) The study of fossil marine life in rocks reveals the drive of these primitive organisms to adapt to their environment. Plants and animals never stop such adaptive experiments. The environment is constantly changing and living organisms are always trying to adapt to its endless fluctuations.

Point 9. Survival of the fittest.
(58:6.8) In the course of the almost endless cycles of gain and loss, adaptation and re-adaptation, all living organisms rise and fall from one age to another. Those who attain cosmic unity remain, and those who do not attain it cease to exist.

Point 10. An important factor in the evolution of plants was chlorophyll.
(65:6.3) The most important step in this evolution of plants was the appearance of the ability to synthesize chlorophyll, and the second greatest success was the transformation of spores into a complex family. The spore is more efficient as a means of propagation, but its disadvantage is the potential diversity and versatility inherent in seeds.

Point C. Era of Marine Life

Point 1. The age of marine life can be divided into six periods.
(59:0.7) Thus the age of marine life covers about a quarter of your planetary history. It can be subdivided into six extended periods, each of which is characterized by certain evolutionary shifts in both the geological and biological domains.

Point 2. Wide distribution of marine vegetation and animal life.
(59:0.8) At the beginning of this epoch the sea floor, the vast continental shelves, and the numerous shallow coastal basins were covered with abundant vegetation. The simpler and more primitive forms of animal life, already developed by the preceding plant and early animal organisms, gradually spread along the vast coasts of the various continents, filling the numerous inland seas with primitive marine life. Since these ancient organisms generally did not have shells, only a small fraction of them have survived in the form of fossils. Nevertheless, everything was ready for the creation of the opening chapters of that gigantic "book of stone," which holds within itself the record of life so methodically recorded through the succeeding ages.

Point 3. In North America, fossils of marine life are found in two separate strata.
(59:0.9) The North American continent possesses an astonishing collection of fossil-rich deposits spanning the entire era of marine life. The earliest and oldest strata are separated from the latest strata of the preceding period by extensive erosional deposits, clearly separating these two stages of planetary evolution.

Point 4. Amoebae - typical organisms from the initial stage of development of animal life.
(59:1.1) From the dawn of this period of relative tranquility on the earth's surface, life was limited by the various inland seas and ocean coastline; no form of terrestrial organisms yet existed. Primitive marine animals acclimatized well and were ready for the next stage of evolution. Amoebae are typical survivors of this initial stage of development of animal life - they appeared towards the end of the previous transitional period.

Point 5. Amoeba is a primitive type of animal life with failed development.
(65:2.4) Soon—and suddenly—a higher type of protozoan animal life appeared. From those distant times, the amoeba - a typical unicellular animal organism - has remained almost unchanged. It is still developing today as it was in that era, when it was the greatest achievement of evolution. This microscopic creature and its protozoan relatives are as important to the animal kingdom as bacteria are to the plant kingdom; they are an example of organisms preserved at the first evolutionary stage of the differentiation of life, just as they are an example of failed further development.

Point 6. Beginning of earthly life.
(59:1.2) 400,000,000 years ago both plant and animal marine life successfully spread throughout the world. The world's climate has become slightly warmer and more uniform. A general submergence was taking place on the sea-coasts of the various continents, especially North and South America. New oceans appeared and older bodies of water greatly expanded.
(59:1.3) Vegetation first crawled onto the land and soon made considerable progress in adapting to a non-marine habitat.
(59:1.4) Suddenly, and without the formation of intermediate forms, the first multicellulars arose. Trilobites appeared, which for many centuries remained the dominant type of marine fauna. From the point of view of marine life, the Age of Trilobites had arrived.

Point 7. Marine life in the age of trilobites - the Cambrian period.
(59:1.18) Marine life was roughly the same throughout the world and consisted of seaweeds, single-celled organisms, the simplest fungi, trilobites, and other crustaceans—shrimps, crabs, and lobsters. By the end of this period, three thousand varieties of brachiopods had appeared, of which only two hundred have survived. These animals represent one of those varieties of ancient life that have reached our days practically unchanged.
(59:1.19) But the predominant living things were the trilobites. These multi-sex animals existed in many forms; being poor swimmers, they floundered languidly on the surface or crawled along the seabed, cowering in self-defense when attacked by enemies that subsequently appeared. They grew from five to thirty centimeters in length and fell into four distinct groups: carnivores, herbivores, omnivores, and "carnivores." It is the ability of the latter to subsist mainly on inorganic matter - and they were the last group of multicellular animals possessing such an ability - that explains the huge increase in their population and their long existence.

Point 8. Evolutionary development in the age of vertebrates - the Ordovician period.
(59:2.9) This period became the great age of individual evolution of animal organisms, although many of the fundamental changes—such as the transition from vegetable to animal life—occurred earlier. The level of development of the marine fauna is indicated by the fact that among the fossils contained in the deposits of this period, all life forms up to vertebrates are represented. But all these animals are marine organisms. Terrestrial animals had not yet appeared, with the exception of certain kinds of worms that burrowed into the earth on the seashores, just as plants had not yet become ubiquitous. There was still too much carbon dioxide in the air for atmospheric breathing creatures to appear. In the initial stage of development, all animals, with the exception of some of the most primitive forms, are directly or indirectly dependent on plant life.
(59:2.10) The dominant group remained the trilobites. These tiny animals existed in tens of thousands of species and were the forerunners of modern crustaceans. In some species there were from twenty-five to four thousand tiny eyes; in others the eyes were reduced. Towards the end of this period, trilobites dominated the seas along with some other types of invertebrates. But they died out entirely at the beginning of the next period.
(59:2.11) Lime-secreting algae became widespread. There were thousands of species that became the progenitors of corals. Marine worms were represented in abundance, and many varieties of jellyfish existed, which have since died out. Corals and later varieties of sponges appeared. Cephalopods, preserved in the form of modern pearl molluscs, octopuses, cuttlefish and squid, reached good development.
(59:2.12) There were many varieties of conch, the shells of which were not so necessary for protection as in later ages. In the ancient seas, gastropods evolved, including molluscs with an entire shell, shore snails, and similar snails. Bivalve gastropods, which have survived over the past millions of years, unite freshwater and marine molluscs, clams, oysters and cockles. Organisms with closing shells also appeared, and these organisms, outwardly resembling dipterans, inhabited the ancient seas in many respects as they exist today; their shells were already fitted with closure devices, grooves and furrows, and other types of protective devices.

Point 9. The Silurian Period - Coral Period - Age of Brachiopods.
(59:3.5) The trilobites rapidly declined, their place being taken by larger molluscs or cephalopods. These animals, reaching five meters in length and thirty centimeters in diameter, became masters of the seas. This type of animals appeared suddenly and became the predominant form of marine life.
(59:3.11) Towards the end of the closing Silurian submergence there was a great increase in the number of echinoderms - sea lilies - as evidenced by the deposition of crinoid limestone. The trilobites almost completely disappeared, and the molluscs continued to remain kings of the seas; significantly accelerated the formation of coral reefs. In this era, in the most favorable places, primitive water scorpions first appeared. Soon after, and suddenly, the real scorpions appeared - the animals possessing their own atmospheric type of breathing.

Point 10. The Devonian period - the period of plant life on earth - the age of fish.
a. Emergence of Invertebrates.

(59:4.3) The extraordinary variety of marine life in this age is explained by the early division of species, but subsequently these different forms freely mingled and united. Brachiopods, which quickly reached the peak of their development, were replaced by arthropods, and the first crustaceans appeared. But the most important event was the sudden appearance of the fish. The Age of Fish began - a period in world history characterized by vertebrates.
(65:6.4) One of the most useful and complex episodes in the evolution of the higher types of animals was the appearance of the ability of the iron in the blood cells to perform the double function of supplying oxygen and releasing carbon dioxide. Such red blood cell function illustrates the ability of evolving organisms to adapt to varying or changing environments. Higher animals - including man - oxidize their tissues with the help of the iron contained in the red blood cells, which carries oxygen to living cells and so efficiently releases carbon dioxide. But other metals can also serve this purpose. Cuttlefish use copper for this, and ascidians use vanadium.
(59:4.9) 250,000,000 years ago the fish appeared, the vertebrates, which became one of the most important stages of evolution until the appearance of man.
(59:4.10) The ancestors of the first vertebrates were the arthropods or crustaceans. The ancestors of the fish family became two modified arthropods; one of them had a long body connecting the head and tail, while the second species was a spineless and jawless pre-fish. But these preliminary forms were quickly destroyed after the first vertebrates suddenly appeared from the north.
(59:4.11) To this age belong many of the largest true fishes; some toothed varieties reached a length of approximately eight to ten meters. Modern sharks are the only extant representatives of these ancient fish. Equipped with armor and lungs, fish reached their evolutionary apogee, and by the end of this era fish had adapted to both fresh and salt water.
(59:4.12) In the deposits formed toward the end of this period may be met with entire bone beds consisting of teeth and skeletons of fishes, and rich fossil strata lying along the coast of California, for many sheltered bays of The Pacific Ocean cut into the land of this region.

b. Emergence of ferns.
(59:4.13) The earth was rapidly becoming covered with new terrestrial vegetation. Until then, plants mainly grew near water; now suddenly appeared a prolific family of ferns, rapidly spreading over the surface of the rapidly rising land. Soon three species were formed, having a diameter of sixty centimeters and a height of twelve meters, later leaves appeared, but in these first varieties they were only in a rudimentary state. Many small plants existed, but their fossil remains were not preserved because they were usually destroyed by the earlier bacteria.
(59:4.17) The uplift of the continents continued and the atmosphere became saturated with oxygen. The ground was covered with vast places overgrown with ferns rising to a height of thirty meters, and with the unusual trees of those days: in the silent forests there was not a sound or a movement of leaves, for these trees were leafless.

Point 11. Carboniferous period - age of frogs
a.The Age of Ferns
(59:5.2) 220,000,000 years ago many areas of the continental landmass, including much of North America, were above water level. The earth became covered with luxuriant vegetation; the age of ferns came. Carbon dioxide was still present in the atmosphere, but its amount was decreasing.

b. Age of frogs and insects.
(59:5.5) When the water level reached its peak, a new evolutionary event suddenly occurred—the unexpected appearance of the first land animals. There were numerous species of such animals capable of living both on land and in water. These air-breathing amphibians evolved from arthropods whose swim bladders had evolved into lungs.
(59:5.6) Snails, scorpions, and frogs crawled out of the salty seawater onto land. Even today, frogs leave all their eggs in the water, and the younger ones look like small fish, tadpoles. This period might more properly be called the Age of Frogs.
(59:5.7) Much later insects appeared, which - along with spiders, scorpions, cockroaches, crickets and grasshoppers - quickly spread over all continents. The wingspan of dragonflies reached seventy-five centimeters. A thousand species of cockroaches appeared, some of which were ten centimeters long.

c. Marine life continues to evolve.
(59:5.8) Two groups of echinoderms were particularly well developed and are in fact the leading fossils of this age. The mollusc-eating sharks, which dominated the oceans for almost five million years, also reached a high level of development. The climate - as before, was mild and even, the marine life hardly changed. Freshwater fish appeared and trilobites disappeared from the face of the earth. Corals were rare and much of the limestone was deposited at the expense of the water lilies. During this era, deposits of thinner bedded building limestone were formed.

d. Formation of coal.

(59:5.14) The land periodically rose and subsided as the sea level fluctuated due to processes occurring at the bottom of the ocean. The restless condition of the crust - the sedimentation and uplift of the land, combined with the rich vegetation of the coastal marshes, helped to form large coal deposits, hence this period is known as the Carboniferous. Throughout the world, the mild climate was maintained.
(59:5.15) The coal beds alternated with shale, shale, and conglomerate. These coal seams in the central and eastern parts of the United States vary in thickness from twelve to fifteen meters. But many of these deposits were washed away during the subsequent uplift of the land. In some parts of North America and Europe, the thickness of the coal seam is 5,400 meters.
(59:5.16) The presence of the roots of trees which grew in the layer of clay underlying the coal beds of today indicates that the coal was formed in the very places where it is now found. Coal is the water-preserved and pressure-altered remains of a luxuriant vegetation existing at that remote epoch in the swamps of the submerged coasts. Coal seams often contain both gas and oil. Peat layers - remains of ancient vegetation, would turn into one of the types of coal if they were subjected to the necessary pressure and high temperature. Anthracite underwent greater pressure and heating than other types of coal.
(59:5.22) The plants of this period had spores and the wind carried them everywhere. The trunks of trees from the Carboniferous period were usually two meters in diameter and often reached almost forty meters in height. Modern ferns are indeed relics of those long-ago eras.

Point 12. The Permian period - period of seed plants - age of biological upheavals.
a. Period of climate change.
(59:6.1) This period marks the end of the main evolutionary development of marine life and the beginning of the transition period leading to the subsequent ages of land animals.
(59:6.2) During this age there was a considerable impoverishment of life. Thousands of marine species died out, and life on land had only just begun to take hold. It was a time of biological upheaval - an era when life almost completely disappeared from the surface of the land and from the depths of the ocean. At the end of the long era of marine life, almost a hundred thousand species of living things existed on earth. By the end of the transition period, less than five hundred survived.
(59:6.3) The peculiarities of this new period were connected not so much with the cooling of the earth's crust, or with the prolonged absence of volcanic activity, as with the unusual combination of primary and long-established factors—the narrowing of the seas and the increasing elevation of vast masses drought. The mild maritime climate of former times was becoming a thing of the past; an increasingly rapid formation of a sharper, continental type of climate took place.

b. Development of seed plants.
(59:6.7) Throughout this period of climatic transformations tremendous changes also took place among the land plants. Seed plants first appeared, thanks to which the nutrition of land animals improved, the number of which subsequently increased. Radical changes took place among insects. Diapauses occurred, representing periods of reduced activity in winter and during droughts.

c. Harsh trials of marine life.
(59:6.9) The gradual cooling of the water greatly affected the destruction of ocean life. The marine animals of this era found temporary shelter in three favorable refuges: in the present-day Gulf of Mexico region, in the Gulf of the Ganges River in India, and in the Gulf of Sicily of the Mediterranean basin. It was from these three regions that the new marine species subsequently emerged, which - passing harsh tests - filled the sea again.

d. Change of life in a period of trials - crisis of marine life.
(59:6.8) As for the land animals, the frogs, which in the previous age reached the peak of their development, quickly fell into decline, but they survived at the expense of being able to live for a long time even in drying up lakes and reservoirs in these distant and extremely harsh times. During the period of decline of frogs in Africa, the first evolutionary shift towards the transformation of frogs into reptiles took place. And as the landmasses were still joining each other, this doreptilian creature having an atmospheric type of breathing spread throughout the world. By this time the atmosphere had changed to such an extent that it provided superior ground-type breathing. Soon after the appearance of doreptilian frogs, North America was temporarily isolated - cut off from Europe, Asia and South America.

e. End of biological shocks.
(59:6.10) 160,000,000 years ago the land was mainly covered with vegetation that could serve as food for land animals, and the atmosphere became ideal for their respiration. Thus ended a period of decline in marine life and a harsh time of biological upheavals that wiped out all life forms except those that possessed survival qualities,

allowing them to become the forerunners of more rapidly developing and highly diverse life in the subsequent epochs of planetary evolution.
(59:6.11) The end of this period of biological upheaval, known to your researchers as the Permian, also marks the end of the Paleozoic, an era covering one quarter of all planetary history and lasting two hundred and fifty million years.

f. Decrease in the importance of the sea in the development of life, when the second stage of evolution begins on land.
(59:6.12) The vast ocean cradle of Urantia life has fulfilled its purpose. In the course of long ages, when the earth was not adapted to the support of life—until the atmosphere became sufficiently saturated with oxygen to sustain the life of the higher land animals—the sea cared for and nourished the ancient life of this world. From this point on, the biological importance of the sea gradually declined, until the second stage of evolution began to unfold on land.

Point D. Era of early terrestrial life
(60:0.1) Ended the era of exclusively marine life. The uplift of the land, the cooling of the crust and oceans, the contraction and subsequent deepening of the seas together with the significant increase of the land in the northern latitudes - all this had a huge impact on the change of the global climate in all regions away from the equator.
(60:0.2) The last epochs of the previous era were indeed the epochs of the frogs, but these ancestors of the terrestrial vertebrates were no longer the dominant group, and the number of the surviving population was sharply reduced. Only a small number of types survived the cruel trials of the preceding period of biological disasters. Even the spore plants practically died.

Point 1. Triassic period - age of early reptiles.
a. Beginning of earthly life.
(60:1.5) 150,000,000 years ago in world history began the early period of terrestrial life. In general, the living things did not have it easy, but they made more progress than in the harsh and hostile time at the end of the era of sea life.

b. Sudden appearance of the reptiles.
(60:1.9) 140,000,000 years ago there suddenly appeared fully formed reptiles, which had been preceded only by two doreptiloid species which had inhabited Africa during previous ages. They evolved rapidly and soon gave rise to the crocodiles and the scaly-armored reptiles, and later both the sea serpents and the flying reptiles. Their transient predecessors quickly disappeared.

c. Age of Dinosaurs
(60:1.10) The dinosaurs belonging to the reptilian order rapidly developed and became the masters of their age. They belonged to the oviparous, and were distinguished from all animals by a small brain, which, weighing less than four hundred and fifty grams, governed the body, which afterwards reached forty tons. But the first reptiles were small carnivores and moved on their hind legs, like a kangaroo. The bones of the skeleton were hollow and resembled those of birds, and only three toes later appeared on the hind legs, as a result of which many fossilized footprints of these animals are mistaken for traces of giant birds. Later, herbivorous dinosaurs appeared. They walked on all fours, and one of the branches of this group acquired protective armor.

d. Failure of non-placental mammals.
(60:1.11) After several million years the first mammals appeared. They had no placentas and soon completely disappeared; none survived. This was an experimental attempt to improve the mammalian types, but it was not successful on Urantia.

Point 2. The Jurassic period - the age of reptiles.
a. Age of Reptiles.
(60:2.1) 120,000,000 years ago a new period in reptilian development began. This stage was marked by the evolution and decline of the dinosaurs. In terms of their size, land animals reached the limit of their development and by the end of the period practically disappeared from the face of the earth. There were dinosaurs of all sizes, from the species less than two feet long to the gigantic non-carnivorous dinosaurs twenty-three meters long; no living creature has reached such dimensions since then.
(60:2.2) The largest dinosaurs appeared in western North America. These gigantic reptiles are buried throughout the Rocky Mountain region, along the Atlantic coast of North America, in the territory of Western Europe, South Africa and India, but not in Australia.

(60:2.3) As they increased in size these massive creatures became less and less mobile and less strong, but they needed such a quantity of food, and the earth was so filled with them, that they literally began to they starved and died - they lacked the intelligence to help them cope with the given situation.

b. Era of the plant world.
(60:2.7) Compared with the previous age, the plant world has hardly changed. The ferns survived, and the pine and other juniper species increasingly resembled today's varieties. The formation of coal continued in small quantities along the northern part of the Mediterranean coast.

c. Marine life continued to evolve and some dinosaurs returned to the sea.
(60:2.9) 110,000,000 years ago the potentialities of marine life continued to develop. One of the most significant mutants of its time was the sea urchin. Crabs, lobsters and modern crustaceans reached full development. Noticeable changes took place among the fish, where the first sturgeon appeared, but the seas continued to swarm with ferocious sea serpents, which sprang from the land reptiles and threatened all fish.
(60:2.10) Before all this time remained the age of the dinosaurs. They filled the land to such an extent that in the previous invasion of the sea, two species passed into the water in search of sustenance. From an evolutionary point of view, these sea snakes represent a step backwards. While some species evolve, other lineages remain unchanged; while still others regress, returning to their previous state. This is what happened to these two types of reptiles when they left the land.

d. Failures of some species in the struggle for survival.
(60:2.11) In time the sea-serpents grew to such a size that they became exceedingly indolent and eventually died out because their brains were insufficient in size to protect their enormous bodies. With a brain weight of less than sixty grams, these giant ichthyosaurs reached fifteen meters in length, with most specimens exceeding ten meters in length. Marine crocodiles were also an example of reverse mutation of terrestrial reptiles, but unlike sea snakes, these animals always returned to land to lay their eggs.
(60:2.12) Soon after, when two species of dinosaurs in a vain attempt to survive migrated into the water, two others were pushed into the air by the fierce struggle for existence on land. But these flying pterosaurs were not the forerunners of the true birds of subsequent eras. They descended from the jumping dinosaurs, whose skeleton consisted of hollow bones and wings, similar to those of flying mice, had a span of six to eight meters. These ancient flying reptiles reached over three meters in length and had split jaws reminiscent of modern snakes. At first they were successful, but their development did not go in the direction that would allow them to come to life as flying creatures. They represent non-surviving lineages of bird ancestors.
(60:2.13) During this period, the number of turtles that first appeared in North America increased. Their ancestors migrated here from Asia via the northern land bridge.

e. The end of the age of dinosaurs.
(60:2.14) 100,000,000 years ago the reptilian age ended. For all their enormous mass, dinosaurs were practically mindless animals, lacking the intelligence to provide their huge bodies with the necessary sustenance; that's why these lazy land reptiles were dying out in ever increasing numbers. Beginning at that time, evolution will be determined by brain enlargement, not physical mass, and it is brain development that will characterize each subsequent age of evolutionary animal and planetary progress.

Point 3. The Cretaceous period - the period of angiosperms - the age of birds.
a. Sudden appearance of angiosperms and their distribution on all continents.
(60:3.7) 90,000,000 years ago from the ancient Cretaceous seas came the angiosperms, soon filling all the continents. Land plants suddenly appeared, including fig trees, magnolias, and North American magnolia trees. Soon after, fig trees, breadfruit trees, and palms spread across Europe and the western plains of North America. No new species of land animals appeared.

b. Closing the Bering Strait and changing marine life.
(60:3.8) 85,000,000 years ago the Bering Strait closed and isolated the cooling waters of the northern seas. Until then, the marine life of the Atlantic and Gulf of Mexico was significantly different from the marine life of the Pacific Ocean, which was explained by the difference in the temperatures of these two bodies of water; now the temperature has become the same.

c. Emergence of modern trees, cereals, grasses and flowering plants.
(60:3.19) This was a time of great evolution of the plant world. Flowering plants predominated among land plants, and many of today's trees appeared, including beech, birch, oak, walnut, sycamore, maple, and modern palms. There was an abundance of fruits, grasses, and cereals, and these seed-bearing grasses and trees were to the

vegetable world what the ancestors of man were to the animal world—second in evolutionary importance only to the appearance of man himself. Suddenly, and without preceding transitional stages, the vast family of flowering plants mutates. And this new flora soon spread throughout the world.

d. Dinosaurs continued to rule the land, conditions for the appearance of birds.
(60:3.20) 60,000,000 years ago, notwithstanding the decline of the terrestrial reptiles, the dinosaurs continued to rule the earth, and the more mobile and active forms of the carnivorous dinosaurs, moving with kangaroo-like leaps, came to the fore. But for some time before that, new types of herbivorous dinosaurs appeared; the rapid growth of their population is explained by new types of grassy ground vegetation. One of these new herbivorous dinosaurs was a true quadruped, armed with two horns and a cape-like crest. The terrestrial type of turtle appeared, reaching six meters across, as well as the modern crocodile and true snakes of the modern type. Huge changes were also taking place among the fish and other representatives of marine life.
(60:3.21) The ancient wading and wading ancestors of birds were not very successful in the air, nor were the flying dinosaurs. The latter were short-lived and soon died out. The fate of the dinosaurs, their destruction, was determined because their brains were too small compared to their bodies. This second attempt to create air-flying animals failed, just as the futile attempts to create mammals during this and the preceding epochs had failed.

e. Sudden appearance of birds and decline of dinosaurs.
(60:3.22) 55,000,000 years ago evolutionary development was marked by the sudden appearance of the first of the true birds, a small pigeon-like creature that became the progenitor of the entire bird kingdom. For the third time a flying creature appeared on earth, and it descended directly from the reptilian group, not from their flying dinosaur contemporaries or earlier toothed land bird types. Thus this period became known as the Age of Birds, just as the decline of the reptiles.

f. End of the Cretaceous period and the Mesozoic era.
(60:4.5) Both biologically and geologically this was an eventful and active period on land and under water. The population of sea urchins increased and the amount of corals and sea lilies decreased. The Ammonites, the dominant influence during the previous epochs, also suffered a rapid decline. On land, the fern forests were largely replaced by pines and other modern tree species, including giant sequoias. Towards the end of this period - regardless of the fact that placental mammals had not yet appeared, all biological conditions were created for the appearance in the subsequent era of ancient ancestors of future mammals.

Point D. Age of Mammals
(61:0.2) During the Cenozoic, the world's landscape presented an attractive sight: hilly heights, spacious valleys, full-flowing rivers, and vast forests. Twice through this stretch of time the Isthmus of Panama rose and fell; three times this section reached the Bering Strait Bridge. The types of animals were as numerous as they were varied. The forests abounded in birds, and the whole world was a paradise for animals, notwithstanding the continual struggle of evolutionary species for supremacy.

Point 1. Eocene - era of early mammals.
a. Sudden appearance of mammals in North America.
(61:1.1) 50,000,000 years ago the continents were generally either above the level of the sea or only barely hidden under water.
(61:1.2) Formation and deposition in this period are both terrestrial and marine, but primarily terrestrial. Over a long period of time, the land rose, simultaneously washing down to the lowlands and to the seas. Early in this period, placental mammals suddenly appeared in North America, representing the most important evolutionary event up to that time. They were preceded by the non-placental species of mammals, but this new type arose directly and suddenly from the ancient reptilian order, the descendants of which managed to survive in the age of decline of the dinosaurs. The father of the placental mammals was a small, highly mobile, carnivorous, jumping type of dinosaur.

b. Advantages of ruminant mammals
(61:1.3) In these ancient mammals the basic animal instincts began to appear. Mammals have a colossal advantage in the struggle for survival compared to other forms of animal life due to the following characteristic abilities:
(61:1.4) **1.** They give birth to relatively mature and well-formed offspring.
(61:1.5) **2.** They tenderly and carefully nurture, nurture and protect their offspring.
(61:1.6) **3.** They use their more developed brains to preserve the species.
(61:1.7) **4.** They use their increased mobility to escape from enemies.
(61:1.8) **5.** Use their greater intelligence to adjust and adapt to the environment.

c. Development of mammals.
(61:1.9) 45,000,000 years ago the continental ridges rose with the simultaneous and universal submergence of the coastlines. Mammals evolved rapidly. A type of small reptilian egg-laying mammal flourished, and the ancestors of the later kangaroos filled all of Australia. Small horses, swift-footed rhinoceroses, proboscis tapirs, primitive pigs, squirrels, lemurs, possums, and several tribes of ape-like animals soon appeared. They were all small, primitive, and best adapted to living in the mountain forests. The large ostrich-like ground bird reached a height of three meters and laid a single egg measuring twenty-three by thirty-three centimeters. Such birds were the predecessors of the giant passenger birds that later appeared - highly intelligent creatures that once carried people through the air.
(61:1.10) The mammals of the early Cenozoic lived on land, under water, in the air, and in trees. In these animals, there were from one to eleven pairs of mammary glands, and all of them had a dense, fur-like covering. As in subsequent species, they developed two successive rows of teeth and a large, relative to their body size, brain. But there were still no modern mammals among them.

Point 2. Oligocene period - era of more developed mammals.
a. Emergence of herbivorous and omnivorous mammals.
(61:2.1) This period was characterized by the further and rapid evolution of placental mammals, with the appearance of more advanced mammal species.
(61:2.2) Although the early placental mammals descended from their carnivorous ancestors, the herbivorous branches soon appeared, and after them the omnivorous mammal families. The main food of the rapidly reproducing mammals was flowering plants, since the modern land flora included most of today's plants and trees that appeared in more ancient periods.

b. Age of World Dominance of Placental Mammals.
(61:2.3) 35,000,000 years ago began the age of world dominance of the placental mammals. The broad southern land bridge reconnected the then vast Antarctic continent with South America, South Africa and Australia. Despite the concentration of land mainly in high latitudes, the world's climate remained relatively mild due to the colossal increase in the water area of ??tropical seas. Moreover, the uplift of the lands was insufficient for the formation of glaciers. Extensive lava flows were observed in Greenland and Iceland, and a certain amount of coal was deposited between these layers.

c. Dominance of land mammals in the decline of the dinosaurs.
(61:2.5) On land this age became primarily a time of renewal and propagation of mammals. Over a hundred species of early and more primitive mammals died out by the end of this period. Soon the large mammals with small brains also disappeared. As natural selection continued, brains and agility came to replace armor and size. In the conditions of the decline of the dinosaurs, mammals gradually took over the land, quickly and completely destroying the remnants of their reptilian ancestors.
(61:2.6) Parallel with the extinction of the dinosaurs in the lizard family other cardinal changes took place. Surviving representatives of the ancient reptiles are turtles, snakes and crocodiles, as well as the honorable frog - the only preserved group representing the ancient ancestors of man.
(61:2.7) The various groups of mammals arose from a unique and now extinct animal. This carnivorous creature was something between a cat and a seal; highly intelligent and extremely active, it could exist both on land and in water. Ancestors of dog families appeared in Europe, which soon gave rise to many types of non-large dogs. About the same time came the rodents, including beavers, squirrels, lalugers, mice, and tame rabbits, which soon became a substantial form of life, little changed from the time of their appearance. Later deposits from this era contain the fossil remains of ancient species of dogs, cats, raccoons and weasels.

d. Increase in the diversity of mammals.
(61:2.8) 30,000,000 years ago modern mammals began to appear. Until then, mountain beast types, mainly inhabiting the heights, predominated; suddenly began the evolution of the flat or ungulate type - the grazing species, as opposed to the hoofed carnivores. These grazing animals descended from a common ancestor having five toes and forty-four teeth that died out before the end of this era. During this period the development of the fingers reached only the three-fingered stage.
(61:2.9) The horse—a prime example of evolution—inhabited both North America and Europe at this age, although its development was not fully completed until the late Ice Age. The rhinoceros, which appeared towards the end of this era, later gained its greatest distribution. A small pig-like creature also appeared, which became the ancestor of many types of pigs, wild boars and hippopotamuses. Camels and llamas appeared in North America about the middle of this period and spread across the western plains. Later, llamas migrated to South America and camels to Europe, and soon both died out in North America, although some camels survived there until the Ice Age.

e. Appearance of the ancestors of true lemurs in North America.
(61:2.10) About this time an important event occurred in western North America: the first ancestors of the ancient lemurs appeared. Although these animals should not be considered true lemurs, their appearance marked the formation of an evolutionary order in which the true lemurs subsequently appeared.

Point 3. The Miocene period - the age of the elephant and the horse.
a. Evolution of grassland-type mammals.
(61:3.2) A great variety of new grasses appeared, and the gradual modification of the teeth of many mammals led to the establishment of the present grazing type.

b. Golden Age of Mammals.
(61:3.4) 20,000,000 years ago the golden age of mammals began. The land bridge across the Bering Strait allowed many groups of animals to migrate to North America from Asia, including four-tusked mastodons, short-footed rhinoceroses, and many species of the cat family.
(61:3.5) The first deer appeared, and soon North America was filled with ruminants - deer, bulls, camels, bison, and several species of rhinoceros, but the giant pigs, reaching a height of almost two meters, died out.
(61:3.6) Huge elephants of this and subsequent periods possessed both large brains and large bodies, and soon filled the whole world except Australia. The only dominant in the world became the huge animal, whose brain was large enough to ensure existence. In the conditions of highly intelligent life during this age, no animal the size of an elephant could survive unless it possessed a large and perfect brain. In terms of mental abilities and adaptability, only the horse comes close to the elephant, and only man himself surpasses him. Nevertheless, of the fifty species of elephants that existed at the beginning of this period, only two survived.

c. Age of the Elephant and the Horse.
(61:3.10) Mammalian evolution continued. In the western valleys of North America huge herds of horses joined the camels; this time was indeed the age of the horse, just as it was the element of the elephant. The horse's brain is second only to the elephant's in quality among animals, but in one respect it is clearly inferior, for the horse has never completely overcome its deep-rooted tendency to run away when frightened. The horse lacks the emotional control inherent in the elephant, and the elephant is extremely limited by its size and poor mobility. During this period the animal, something between an elephant and a horse, appeared, but it was quickly exterminated by the rapidly multiplying cat family.
(61:3.11) As Urantia enters the so-called "horseless age," it is worth reflecting on the significance the horse had for your ancestors. Man used it for food, then for transportation, and even later - in agriculture and warfare. The horse has long served humanity and played an important role in the development of civilization.

d. Evolution of monkeys.
(61:3.12) Biological development in this period contributed greatly to the creation of conditions for the subsequent appearance of man. In Central Asia, true types of both primitive ape and gorilla emerged that shared a common, non-preserved ancestor. But none of these species has anything to do with the line of living beings that were subsequently destined to become the ancestors of humans.

e. Representatives of the cat and dog family.
(61:3.13) The dog family was represented by several groups, among which were prominent the wolves and foxes, and of the cat family the panthers and great saber-toothed tigers; such tigers first appeared in North America. All over the world, the number of modern representatives of the cat and dog family was increasing. Weasels, squirrels, otters and raccoons flourished and developed in all northern latitudes.

Point 4. Pliocene period - last great migration of mammals.
a. Last global animal migration
(61:4.3) In a short time all the continents except Australia were reunited and a worldwide animal migration took place. North America was connected to both South America and Asia, and a huge exchange of animals took place between these continents. Asiatic sloths, armadillos, antelopes and bears appeared in North America, and North American camels moved to China. Rhinos migrated to all continents except Australia and South America, but they died out in the Western Hemisphere towards the end of this period.
(61:4.4) In general, the life inherited from the preceding period continued to develop and spread. The cat family predominated among the animals, and the marine life hardly changed. Many of the horses remained three-toed, but the modern types were already appearing; on the grazing plains, llamas and giraffe-like camels mingled with the horses. A giraffe appeared in Africa, the neck of which was as long at that time as it is today. Sloths, anteaters and the South American type of primitive monkeys appeared in South America. Even before the final division of the continents, the massive mastodons migrated to all corners of the world except Australia.

b. Emergence of horses in North America.
(61:4.5) 5,000,000 years ago the modern type of horse appeared and spread from North America throughout the world. But the horse died out on its native continent long before the appearance of the red man.

Point 5. The Pleistocene period - the ice age.
a. The North American Animals of the Early Stage of the Ice Age.
(61:5.7) In Eurasia these two ice invasions were not extensive. In the early stages of the Ice Age, North America was filled with mastodons, woolly mammoths, horses, camels, deer, bighorn sheep, bison, ground sloths, giant beavers, saber-toothed tigers, elephant-sized sloths, and numerous groups of the family of cats and dogs. But from that time on, their numbers rapidly decreased due to increasing cooling. In North America, most of these animals died out towards the end of the Ice Age. Away from the ice, land and water life changed little.

b. Emergence of early human ancestors.
(61:6.1) An important event during this ice age was the evolution of primitive man. A little to the west of India, in the area that is now under water, among the descendants of the ancient North American type of lemur that migrated to Asia, the mammals that became the early ancestors of man suddenly appeared. These small animals walked primarily on their hind legs and possessed large brains relative to their size and compared to the brains of other animals. In the seventieth generation, a new, more developed group suddenly separated from this type of living beings. These new mammals - the intermediate ancestors of man, who were almost twice the height of their ancestors and who possessed a proportionally enlarged brain - had barely established themselves when suddenly the third most important mutation occurred: the primates appeared. [At this time, as a result of the reverse development of the intermediate ancestors of man, the anthropoid apes appeared; from that time to this day the human branch has progressed at the expense of gradual evolution, while the apes have remained unchanged and even somewhat regressed.]

c. The Emergence of Man.
(61:6.2) 1,000,000 years ago Urantia was registered as a habitable world. The mutation that occurred in the tribe of progressive primates suddenly produced two primitive humans - the actual progenitors of mankind.

d. Consequences of the ice age.
(61:6.3) This event coincided with the third glacial advance; therefore it is evident that your ancient ancestors were born and raised in a stimulating, tempering and difficult environment. And the only surviving descendants of these Australian aborigines - the Eskimos, still prefer to live in the harsh northern regions.
(61:6.4) In the Western Hemisphere, men did not appear until shortly before the end of the Ice Age. But in the interglacials they moved westward around the Mediterranean and soon spread across Europe. In the caves of Western Europe, human bones can be found mixed with the remains of both tropical and arctic animals. This proves that man lived in these regions during the last ice ages.

Point IV. An overview of evolution

Point A. Evolutionary panorama
(65:2.1) The story of man's rise from seaweed to the rulership of earthly creation is a compelling narrative of biological struggle and the survival of reason. The original ancestors of man were literally the silt and mud of the ocean floor in the slow-flowing and warm waters of the bays and lagoons along the vast shores of the ancient inland seas; it was these same waters in which the Life Carriers effected three separate implantations of life on Urantia.

Point 1. Only a few representatives of the ancient types of marine plants have survived
(65:2.2) Only a few representatives of the ancient types of marine plants which participated in those epochal changes which led to the appearance of the borderline animal-like organisms by which the gradual transition from plant to animal life have been preserved to this day. These early transitional forms closely resembled modern algae, though they were not identical to them; they were very true frontier organisms: being neither plants nor animals, they accordingly gave rise to true animal forms of life.

Point 2. Unicellular types of animal organisms joined together in colonies
(65:2.5) Soon the early single-celled types of animal organisms joined together in colonies—first of the Volvox type, and then along the lines of becoming hydras and medusae. Still later came the starfish, sea lilies, sea urchins, sea cucumbers, centipedes, insects, spiders, crustaceans and related groups of earthworms and leeches, followed by

the molluscs - oysters, octopuses and snails. Many hundreds of intermediate species appeared and disappeared; we remind only those who survived a long struggle. Together with the later fishes, such non-evolving species represent today the unchanging types of early and primitive animals - branches of the tree of life that have stopped their development.

Point 3. Development of plants, amphibians, reptiles, birds.
(65:2.6) Thus everything was ready for the appearance of the first vertebrates, the fish. Two unique modifications emerged from them: the frog and the salamander. It was the frog that initiated the series of gradual differentiations of animal life which accordingly led to the appearance of man himself.
(65:2.7) The frog is one of the oldest surviving ancestors of the human race, but it too has ceased its development, remaining today much as it was in those distant times. The frog is the only surviving ancestor of the ancient races. No intermediate ancestor of the human race was preserved between the frog and the Eskimo.
(65:2.8) From the frogs sprang the reptiles, the enormous and practically extinct type of animal which, before it ceased to exist, gave rise to a whole family of birds and numerous classes of mammals.
(65:2.9) Probably the greatest evolutionary leap in all of history until the appearance of man was the transformation of the reptile-like into the bird. Modern types of birds - eagles, ducks, pigeons and ostriches - descended from the huge reptiles that lived in the distant past.
(65:2.10) The reptilian kingdom, descended from the frog family, is represented today by four surviving groups, the crocodiles and the turtles. The two are non-progressive, snakes and lizards, along with their cousins, alligators and turtles; one group is partially progressive - this is the bird family; the fourth group represents the ancestors of mammals and forms the line leading directly to the human species. But regardless of their long-ago extinction, the scale of the dying reptiles found its reflection in the elephant and the mastodon, and their peculiar forms were immortalized in the leaping kangaroo.

Point 4. Development of placental mammals and pre-human types.
(65:2.12) It was from the mobile reptilian dinosaur, the small carnivorous creature, possessing, however, a comparatively large brain, that the placental mammals suddenly sprang. These mammals evolved rapidly and diversely, not only giving rise to the common modern varieties, but also to marine types - such as whales and seals, and also to flying creatures - such as flying mice.
(65:2.13) Thus man arose from the higher mammals, deriving their origin mainly from the western implantation of life in the ancient sheltered seas lying in an east-west direction. In the early stages, the eastern and central groups of living organisms successfully developed in the direction of achieving the pre-human levels of animal existence. But time has shown that the Eastern center for the introduction of life did not reach a satisfactory level of development of reason preceding the appearance of man, because the repeated irretrievable losses of higher types of germplasm which this center suffered forever deprived it of the possibility of restoring human potentials.

Point 5. Impacts of the environment in order to create conditions for the emergence of man.
(65:2.14) As this eastern group was so clearly inferior to the other two in ability and development of mind, the Life-Bearers - with the consent of the superior beings - so influenced the environment as to further limit these primitive lines of evolving life. To all outward appearances, this destruction of the lower groups of creatures was accidental—in fact, it was purposeful.
(65:2.15) According to the evolutionary development of reason, the Lemurian ancestors of man proved to be considerably more developed in North America than in other regions. Therefore, the directed migration from the zone of activity of the western implantation of life - through the Bering Bridge of land and along the coast, took them to South-West Asia, where they continued to develop, successfully using some hereditary factors brought by the central group of life. Thus man arose from some western and central varieties of life, but in the central to near-eastern regions.
(65:2.16) Thus the life implanted on Urantia developed until the Ice Age, when man himself appeared and began his eventful planetary journey. And this appearance on Earth of primitive man during the Ice Age was no mere accident; she was intentional. The hardships and harshness of the Ice Age climate were in every way consistent with the purpose: to assist in the creation of a hardened type of man with a colossal capacity for survival.

Point B. Various Aspects of Evolution

Point 1. Changes in the nature and functioning of the Carriers of Life after the appearance of willed creatures - humans.
(65:1.7) Once the prototypes of life have been formulated and the necessary material preparation completed, immediately the super-material forces relevant to the reproduction of life are activated and life arises. The Life Carriers then immediately return to their normal, mid-phase personality state, in which they are able to manipulate

living elements and affect evolving organisms, although they are completely deprived of the ability to organize - create, new patterns of living substance.
(65:1.8) At the completion of a certain stage of organic evolution, and after the free will of the human type has appeared in the higher evolving organisms, the Life-Bearers are obliged either to leave the planet or to take an oath of renunciation; this means that they are bound to give a solemn promise to refrain from further attempts to influence the course of organic evolution. Following the voluntary vow of the Life Bearers who wished to remain on the planet as future advisors to those individuals who would be entrusted to assist in the development of new willed beings, a commission of twelve beings was convened under the leadership of the Evening Star chapter, authorized by a System Lord and acting with the consent of Gabriel. And these Life Bearers are immediately translated to the third phase of personality existence - the semi-spiritual level of being. I operate on Urantia in this third phase of being from the times of Andon and Fonta.

Point 2. Biological bacterial regression and disease susceptibility from Adam's transgression.
(65:5.2) But the cause of the deepest disappointment throughout the whole biological epic was the extensive and unexpected reversion of some primitive forms of plant life to the level of pre-chlorophyllous parasitic bacteria. This unforeseen circumstance in the evolution of plant life has led to many distressing diseases in higher mammals, especially in the more vulnerable human species. Faced with this complex situation we, to a certain extent, did not attach any importance to the possible complications, because we knew that the subsequent infusion of Adamic life-plasm would be able to raise the resistance of the new mixed race to such an extent that it would become practically impervious to all diseases. caused by plant-type organisms. But our hopes were dashed by the misfortune of Adam's transgression.

Point 3. The Inexorable Process of Evolution.
(65:3.3) You already know that the mortals of Urantia are descended from the primordial frog, and that the hereditary material which led to the higher level of development and potentially culminated in an individual was in one case close to perishing. But the conclusion should not be drawn from this that such an accident would put an end to the evolution of mankind. At this point, we observed the existence and developmental capacity of no less than a thousand different and widely spaced mutant genotypes that could be integrated into various prototypes of pre-human development. The frog ancestor in question was the third candidate we selected. The two preceding genotypes died out despite all our attempts to preserve them.
(65:3.4) Even the destruction of Andon and Fonta until the appearance of offspring in them could not have prevented the evolution of man, though it would have retarded it. After the appearance of Andon and Fonta, and until the mutational potential for animal life was exhausted, no less than seven thousand favorable varieties appeared which could be poured into one of the human types of development. And many of these better lines were subsequently assimilated by various branches of the spreading human species.
(65:3.5) Long before the arrival on the planet of the biological perfectors, Adam and Eve, the human potentials in the evolving animal species were exhausted. This biological status of animal life is revealed to the Life Carriers through the phenomenon of mobilization of the third phase auxiliary spirits, which automatically occurs with the exhaustion of the ability of all animal life to produce mutational potentials of pre-human individuals.

Item 4. Unique Features of the Urantia Experiment.
(65:4.7) The Urantia experiment had many unique features. But the two most important episodes became the appearance of the Andonites to the emergence of the six colored races and the subsequent simultaneous appearance of the Sangik mutants in one family. Urantia is the first world in Satania where the six colored races sprang from the same human family. Usually they represent diverse branches, ascending to independent mutations in pre-human animal populations, and as a rule appear on earth one at a time over long periods of time, beginning with the red man and reaching - through the other colors - to the indigo.
(65:4.8) Another significant departure from the norm was the late arrival of the Planetary Prince. As a rule, the arrival of the Prince roughly coincides with the development of the will. And if this were so, Caligastia could have arrived on Urantia as early as the lifetime of Andon and Fonta, and not nearly five hundred thousand years later, at the same time as the six sangic races arose.

Point 5. The enigma of evolution.
(65:6.6) Yet many apparently mysterious adaptations of living organisms are purely chemical, wholly physical in character. At any given time, over 15,000,000 chemical reactions between the hormones secreted by a dozen endocrine glands may be taking place in each person's bloodstream.
(65:6.8) Chemistry and physics alone are not sufficient to explain the development of man from the primeval protoplasm of the ancient seas. The ability to learn, memory, and various responses to the impact of the environment are properties of the mind. The laws of physics are insensitive to training; they are unenforceable and immutable. Chemical reactions do not change under the influence of education, they are uniform and deterministic.

Except for the presence of the Unconditioned Absolute, electrical and chemical reactions are predictable. But the mind is capable of benefiting from experience and learning the behavioral responses that occur in response to repeated stimulation.

Point 6. Reasons for the slow process of evolution.
(65:8.2) If you are perplexed that so much time is wasted in bringing about the evolutionary changes in life, I would like to point out the following: we are incapable of speeding up the life process, of making it run faster, than the physical transformation of the planet allows to do so. We must follow the natural physical development of the world. We have absolutely no means of influencing geological evolution. If physical conditions permitted, we would complete the entire cycle of evolution significantly faster than in a million years. But we are all in the possession of the High Rulers of Heaven, and time does not exist in Heaven.
(65:8.3) For an individual, the measure of time is the length of his life. In this way, all creatures are conditioned by time, and therefore for them evolution is a time-stretched process. For those of us whose lifespans are not limited by time, evolution does not seem like such a long process. In Heaven, where time does not exist, everything is present in the mind of Infinity and the actions of Eternity.

Conclusion
(32:3.10) From the point of view of the universe, the fact of animal origin does not stigmatize any individual, for it is a special method of creating one of the two basic types of sentient ultimate will creatures. When the heights of perfection and eternity are conquered, so much greater is the honor for him who began at the lowest point and joyfully ascended step by step the ladder of life, and who, reaching the heights of bliss, gains personal experience , which includes the unadulterated knowledge of every life stage from the beginning to the top.
(4:2.3) Nature is the time-space result of two cosmic factors: the first is the indisputability, perfection, and moral purity of the Paradise Deity, and the second is the experimental plans, the gaps in execution, the sinfulness of rebellion, the incompleteness of development, and the imperfect wisdom of outside The heavenly creatures - from the highest to the lowest. Nature, therefore, carries within itself a continuous, unchanging, majestic, and astonishing thread of perfection, extending from the circle of eternity; but in each universe, on each planet, and in each individual life, this nature is modified, determined, and eventually corrupted by the actions, errors, and disloyalties of the creatures of evolutionary systems and universes; therefore, while remaining stable in its foundation, nature will always be changing, capricious and modified according to the prevailing norms of the respective local universe.
(4:2.7) The apparent defects in the natural world do not testify to any similar defects in the personality of God. Rather, such visible imperfections are simply inevitable stops in the demonstration of the ever-rolling tape of the infinity screenplay. It is these defects which interrupt the uninterrupted perfection that allow the finite mind of material man to glimpse for a moment the divine reality of time and space. The material manifestations of divinity appear to man's evolutionary mind to be imperfect only because mortal man persists in viewing natural phenomena through his natural eyes, using human vision unaided by the morontia mottos or by revelation compensating for him in the worlds of time.
(4:5.7) But the inhabitants of Urantia must rid themselves of these ancient delusions and heathen prejudices concerning the nature of the Universal Father. The revelation of the truth about God is coming to light, and the human race is about to know the Universal Father in all the beauty of his character and the attractiveness of the attributes so beautifully described by the Creator Son who lived on Urantia as Son of Man and Son of God.

(196:3.33) Do not lose heart. Human evolution continues and the revelation of God to the world - in Jesus and with His help - is crowned with success.