AN INTERPRETATION OF ARCHAIC MEDICAL TREATISES

THESIS

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By

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Ancient peoples did not distinguish between philosophy, religion, and science. Scientific truth did not exist apart from divine truth. Any new idea, finding, or theory was assimilated into a monolithic mythological structure. This is one of the causes of the underestimation of ancient science: it is always packaged in a myth - the method of preserving information in an oral culture.

The mythological medium allowed the preservation and dissemination of hard-won, empirical, scientific knowledge through generations of preliterate peoples. The context for mythological memorization, or simply tradition, needed to be easily and naturally acquired. The ideal context was the anthropomorphic context, the ontogenic context. This is the Grand Allegory - the anthropomorphization of information. Biomyths are essentially biological texts allegorized in esoteric language.
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My hypothesis is that certain ancient texts currently classified as "myths" are actually detailed descriptions of medical observations. I refer to such biomythological texts generally as biomyths. They are descriptions of biological phenomena akin to those found in modern biological or medical textbooks. These myths are essentially biological texts allegorized in metaphorical language. Biomyths are commonly misinterpreted as the anthropomorphization of a god or the deification of an ancestor.

Whereas some creation myths are thought to refer to the creation of the World, the Cosmos, or the Universe, they actually describe not the creation of a physico-chemical macrocosmos but of a biochemical microcosmos - a biocosmos or biocosm. A biocosmos is a living thing, a self-contained, biological world. In amphibians, birds, fish, and insects, the biocosm is the egg. In plants, the biocosm is the seed. In animals and humans, the biocosm is the conceptus - the fertilized ovum and its products prior to birth, i.e., the amniotic membranes, fluid, embryo, umbilical cord, and placenta.

In creation biomyths, the biocosm is generated by a father-god and a mother-god who taken together form a biocosmic egg. In the literature, this is termed the World Egg or Cosmic Egg. The parents are related to each other by blood. Either the father or the mother forms the "sky" and the other forms the "earth." Humanity, if not all organic life, is formed inside the egg and personified as the archetypal semi-divine ancestor, e.g., Adam, Anthropos, Marduk, Moses, Phanes, Purusha. Though he will eventually rival his
parents, this androgynous "man" embodies a more restrictive creative ability. After some dramatic event, the "man" must leave his parents and subsequently begets or adopts a race of people. After an inhuman life span, he dies. His descendants rule, or should rule, the land. He, his father, or his apotheosized son rules the heavenly biocosm. This scenario represents only an outline as there are literally hundreds of versions, some barely recognizable, from around the world. Because biomyths were originally oral, hundreds, perhaps thousands, of other versions are now lost.

Biomyths were originally composed for some practical purpose. An obvious example of biological information with a practical purpose is medicine, e.g., dentistry, obstetrics, psychology, surgery, and veterinary. Biomyths would have been ideal for the training of preliterate and semi-literate practitioners of the medical arts.

The biomyths identified to date deal exclusively with reproduction. While reproduction is of obvious interest to any culture, it bordered on obsession in patrilineal (e.g., Semite) and matrilineal (e.g., Egyptian) cultures because it determines parentage, descent, and inheritance.

Perhaps the greatest obstacle to the interpretation of myth as scientific record is the presumed lack of sophistication of ancient peoples, particularly in the sciences. While ancient societies are often characterized by reverence for their culture and for the achievements of their ancestors, modern societies tend to regard their forbears as foolish, gullible, and superstitious. Today, the wisdom of the ancients can seem naive, child-like, even pre-human.

Physicist Carl Sagan acknowledges the correspondence of some ancient myths with scientific myth: "That scientific myths make contact with more ancient myths may or may not be a coincidence. It is entirely possible that
we are able to invent scientific myths only because we have been previously exposed to the other sort” (Sagan, 1977, p. 138). Thomas S. Kuhn, philosopher and historian of science, strikes at the heart of the matter: “If these out-of-date beliefs are to be called myths, then myths can be produced by the same sorts of methods and held for the same sorts of reasons that now lead to scientific knowledge” (Kuhn, 1970, p. 2).

Anthropologist Claude Lévi-Strauss writes that “native classifications are not only methodical and based on carefully built up theoretical knowledge. They are also at times comparable from a formal point of view, to those still in use in zoology and botany” (Lévi-Strauss, 1973, p. 43). And, contrary to the vulgar misconception: “This thirst for objective knowledge is one of the most neglected aspects of the thought of people we call ‘primitive’” (Lévi-Strauss, 1973, p. 3). Far from being satisfied with fairy tales and legends, traditional cultures were searching for what moderns would call a scientific explanation.

The definitive history of embryology is Chemical Embryology written by ninety-two-year-old Joseph Needham of the Needham Institute of Caius College. A portion of Volume I of Chemical Embryology was issued as A History of Embryology. The background provided in this introduction is in large part based upon that work.

The conventional view of the biological sciences of ancient Egypt is that they were primitive at best. Few biological or medical texts have survived, and in these, few statements deal overtly with embryology. Yet, the ancient Egyptians are credited with discovering the artificial incubation of bird eggs - ”one of the greatest helps in systematic embryological study” (Needham, 1975, p. 22).
The Egyptians, like most ancient peoples, considered "the father to be the author of generation, and the mother only to provide a nidus [place in which seeds develop] and nourishment for the foetus" (Needham, 1975, p. 43, quoting Diodorus Siculus). This is precisely Aristotle's (incorrect) assertion in *On the Generation of Animals*. This theory descended with modification into the eighteenth century under the name "preformationism," though preformationists could not agree on whether the sperm (animalculism) or the egg (ovism) contained the preformed being.

Ancient preformationists thought the sperm contained a homunculus - a miniature human being. The male semen carried the image, form, or soul of the embryo, while the female supplied only organic material for growth, i.e., the menstrual blood. Ancient peoples were unaware of the ovum. They employed an agricultural allegory: the female was considered to be a "field" of fertile soil in which the male "seed" was planted. The "field" was equated with chaos in that it contained only unordered, unstructured material for embryogenesis. The "seed" might take several days to "sprout." Today, it is known that this delay corresponds to the time required for the fertilized ovum to implant (moderns also use a botanical analogy) in the uterus. Therefore, the ancients conceived of the sperm as having the creative capability of a fertilized ovum or zygote.
Preformationists believed into the eighteenth century that the "little man" enlarged inside the womb.

A great deal of circumstantial evidence is available which indicates a high degree of sophistication of the sciences, especially of medicine and biology, among the ancient Egyptians. They were renowned for their pharmacology, e.g., abortifacients, contraceptives, cosmetics, fertility potions, life-prolonging elixers, poisons and antidotes, and, of course, embalming solutions. The Kahun Medical Papyrus, the oldest known Egyptian medical text, contains no less than three contraceptive recipes (Riddle and Estes, May-June, 1992, p. 230). Some thirty medical titles have been reported including such specialties as dentist, internist, ophthalmologist, and proctologist (Clagett, 1989, pp. 19-20). The practice of embalming led to an intimate familiarity with human anatomy which was unavailable in other cultures, like the ancient Semitic cultures which considered the dead unclean (Numbers 19:11). Consequently, Egyptian surgeons were premier. Being one of the great centers of civilization and commerce in the ancient world, Egypt benefitted from exposure to the medical knowledge of other cultures, perhaps as far away as India or China. The Egyptians were great students of Nature: the surviving artworks are rich in depictions of the natural history of all types
of animal and plant life. And, perhaps most telling of the circumstantial evidence, the Egyptians maintained a varied agrarian economy for thousands of years.

Erasmus Darwin writes that "the Egyptians were possessed of many discoveries in philosophy and chemistry before the invention of letters; these were then expressed in hieroglyphic paintings of men and animals; which after the discovery of the alphabet were described and animated by the poets, and became the first deities of Egypt, and afterwards of Greece and Rome" (Darwin, 1791, pp. vii-viii). Ancient peoples and native peoples did not and do not distinguish between philosophy, religion, and science. Scientific truth did not exist apart from divine truth. Clagett emphasizes that "even the briefest glance at the extraordinary volume of ancient Egyptian literature that touches upon the nature of the world and how it came into being will convince a reader that during the three thousand years of Pharaonic Egypt there was no natural philosophy or physics that was separate from religion, myth, and magic" (Clagett, 1989, p. 263). Regardless of its source, any new finding, idea, or theory was assimilated into a monolithic mythological or theological or theoretical structure. This is one cause of the famed depth of allegory of Near Eastern writings. And, this is one of the causes of the underestimation of ancient science: it is always packaged in a myth - the method of preserving information in an oral culture.

The mythological medium allowed the preservation and dissemination of hard-won, empirical, scientific knowledge through generations of preliterate peoples. The information received by tradition and experience was symbolized into myths. Myth was abandoned as a record of scientific knowledge and as a mode of teaching the young only with the development of more
permanent and accurate methods, e.g., writing, printing. This anthropocentric means of organizing data under an all-encompassing Grand Allegory led inevitably to the deduction that the cosmos is a living creature. By the reverse allegory, a living creature is a microcosmos.

The ancient Indians accumulated medical and magical knowledge for two thousand years. Partly because of the extensive documentation, ancient Indian embryology is reckoned to have been very advanced. The Bhagavad-Gita, which is thought to be more ancient than the Torah, contains descriptions of structures of the conceptus. There are remarkable parallels in Indian medical lore with Greek embryology including the analogy of foetal formation to the curdling of cheese (Needham, 1975, p. 27). It is assumed that one influenced the other, but there is no conclusive evidence.

In the biological treatises of ancient Greece, specific embryological references occur from the fifth century B.C. onward in the writings attributed to Empedocles, Anaxagoras of Clazomenae, Diogenes of Apollonia, Hippocrates and others. In the fourth century B.C., Greek biological science was systematized by Aristotle in a five volume summary. The second volume contains the bulk of the embryological material, including a classification of animals based upon embryology, e.g., viviparous, oviparous. Aristotle's work influenced Western embryology until the seventeenth century. Needham considers the history of embryology to end with Aristotle until the time of the Renaissance. And, with Galen would pass the last known embryological experimenter for some one thousand years.

Aristotle follows Hippocrates in thinking that the female contributes only "building materials" - the menstrual blood - to the embryo while the male semen contains the "blueprints;" therefore, the species was defined and
continued via the male seed. Aristotle writes: “By definition the male is that which is able to generate in another . . . the female is that which is able to generate in itself and out of which comes into being the offspring previously existing in the generator” (Aristotle, 1984, 716.a.20-23). Though there were many subtleties, this concept of fertilization was rampant throughout the ancient world. Some two centuries later, Galen would uphold the basic theory in his On the Formation of the Foetus and On the Natural Faculties.

Nancy Tuana informs us that Aristotle saw in the generative semen “something divine,” in fact, the soul which imparts form and motion to the undeveloped female “semen” or menses. Tuana summarizes the influence of proto-preformationism: “Religion had postulated a male being - Marduk, Yahweh, Zeus - as the ultimate creative force to account for the primacy of the male creative principle. Science pointed to the anatomy of the testes” (Tuana, Spring 1988, pp. 36-44).

John Riddle and J. Worth Estes point out that while all surviving Western medical texts were written by males, “women were the practitioners of medicinal contraception: Only women knew the secrets of what plants to gather and when to gather them, the part of the plant to use, the method of extracting and preparing the drug, the optimum dose, and the best time to take it within the menstrual cycle” (Riddle and Estes, May-June, 1992, p. 226). Among the abortifacients and contraceptives known to traditional cultures, they list the giant fennel silphion (Ferula), the aromatic mint pennyroyal (Mentha pulegium L.), wormwood (Artemisia absinthium), the myrrh resin (Commiphora), the wild carrot Queen Anne’s lace (Daucus carota L.), the rue herb (Ruta graveolens L.), squirting cucumber (Echballium elaterium; ekbollion is Greek for “abortion”), and parsley. Known to the Romans as
silphium, silphion was worth its weight in silver. Incidentally, there are seventeen references to myrrh in the Bible.

Preventing or terminating unwanted pregnancy was, therefore, a major concern in the ancient world. Despite the fact that hormonal control of ovulation was unknown to the ancients, modern chemical tests have detected estrogen analogues, isoflavonoids, which stimulate estrogen production, or other active compounds in these plants. Therefore, the ancients had an abiding interest in and knowledge of effective chemical means of abortion and contraception.

The Hebrews theorized that the "white" sown by the father leads to the development of the "white" parts of the embryo, namely, bone, nail, tendon, and the white of the eye. The blood, hair, meat, skin, et cetera are derived from the mother "who sows the red."

Needham devotes scant pages to Hebrew biology because "although the Talmud contained certain references of embryological interest, the first Hebrew treatise on biology was not composed till the tenth century, when Asaph Judaeus or Asaph ha-Yehudi wrote on embryology about A.D. 950" (Needham, 1975, pp. 77-9). Needham relates these facts:

The embryo was called peri habbettes (fruit of the body), וְרֵי עַבּּ֑בֶתֶּת It grew through various definite stages:

1. golem (formless, rolled-up thing), גּוֹלֶם, 0-1.5 months.
2. shefir merqqam (embroidered foetus), שַׁפִּיר מְרַעְּקָמִים.
3. tubhar (something carried), תְוָבָּר, 1.5-4 months.
4. walad (child), וָלָד, 4-7 months.
5. wald shel qayams (viable child), וָלָד שֶׁל קַייָם, 7-9 months.
6. ben she-kallo khadashaw (child whose months have been completed), בֵּן שֶׁכָּלַל חָדָשׁ.
Though "fruit of the body" is a legitimate translation, *per{h}abbetun* is better translated "fruit of the womb."

Needham notes two passages of embryological importance in the Hebrew Wisdom literature: Job 10:10 ("Hast thou not poured me out as milk, and curdled me like cheese?") which echoes the cheese-curdling analogy, and the Wisdom of Solomon 7:2 ("And in my mother's womb was fashioned to be flesh in the time of ten months, being compacted in blood, of the seed of man, and the pleasure that came with sleep.") which agrees with Hippocrates about the role of menstrual blood (Needham, 1975, p. 64). But, Needham completely neglects Biblical references which do not hint at chemical processes e.g., Genesis 30:25-43, Leviticus 12, 15, 20, and Numbers 5:11-27.

The history of embryology and the reproductive sciences suffers from a paucity of recognized treatises on biology dated before the birth of Christ. Many scientific traditions, such as the effective pharmaceuticals of the midwife, were never recorded in writing. Yet, the available texts demonstrate an amazing constancy of opinion over thousands of years and across languages and cultures.
METHODOLOGY

There are precedents for the reinterpretation of "myth" as early descriptive science. Two brief examples shall serve to establish the validity of the general approach. In the Roman era, esoteric Mithraism was the power religion until it succumbed to exoteric Christianity. In his recent book *The Origins of the Mithraic Mysteries*, David Ulansey states: "I and several other researchers have come to a conclusion that may seem unlikely at first: the image [the tauracoctony] does not represent a myth about events on the earth; instead it is an astronomical code with strong religious implications" (Ulansey, Dec. 1989, p. 130). The case detailed in his book for an astronomical kratophany becoming the core mystery of a cult is both convincing and enlightening.

The second example is the interpretation by Carl Jung of the alchemical writings of the Middle Ages as descriptions of the psychological process of *individuation* - maturation of the spirit. In "Alchemical Studies" (1931-1954), "Mysterium Coniunctionis" (1956), "Psychology and Alchemy" (1944), and "Psychology of the Transference Interpreted in Conjunction With a Set of Alchemical Illustrations," Jung expounds the psychic reality of myth.

The mysteries are usually the best candidates for reinterpretation. The very fact that there is a mystery signifies that *something* is hidden. In a living religion, passages subject to reinterpretation are usually controversial. For example, the Judaic mystery of the divine Creation would be a good candidate because of its extreme variance from modern physics. In extinct
religions, any or all texts may be occluded by the lack of documentation and by time itself. An example of this type of occlusion are the Eleusinian mysteries.

Most, if not all, ancient religions, were originally mystery religions. A mystery religion is a cult formed around a nucleus of esoteric information, e.g., a major discovery regarding the movement of a star or the function of a body organ. The information is basically "scientific" in nature, but its discoverers found it revolutionary because it belied existing theology, i.e., reality. To the ancients, science and other methods of acquiring knowledge revealed something about god(s). Therefore, the knowledge itself was divine – a theophany. Divine knowledge was considered dangerous because it placed one in disturbingly close psychological proximity to the powerful, invisible forces of divinity. Because of the perceived danger, such knowledge was revealed only to those who were properly prepared to receive it by initiation into the mystery. Even great scientists like Robert Boyle and Isaac Newton were subject to this concern.

A cultus was formed which symbolized a bit of "divine" knowledge to preserve and to disseminate it only to those made worthy by initiation. A successful cult formed a priesthood to serve the High Priest, perhaps the only man to know the mystery in its esoteric form. The membership participated through symbolic reenactment – feasts, pilgrimages, rites. Times changed. Even that which constitutes a mystery is subject to change. In every case, the truth of the mystery was eventually lost to the cult.

The mysteries were never recorded in a literal form. This would have been as unthinkable as leaving an open canister of highly volatile ether beside a flaming Bunsen burner. In religious imagery, mysteries were
represented figuratively by sets of analogous symbols. In written form, the same symbology was used. So, an ambiguous symbol of unknown origin and significance marks a good candidate for reinterpretation, e.g., the Mithraic Tauroctony.

To expose the rational basis of the biomyths, the tool of hyperliteralism will be employed to excavate the meaning of the text from the sediments of thousands of years of misinterpretation and speculation. Hyperliteralism involves either a reversal of the prevailing allegory to a literal interpretation or a "meta-literal" interpretation accessible by reading through both the allegory and the mundane or obvious "literal" meaning to arrive at a hyperliteral translation. I intend to avoid criticism by the proper use of hyperliteralism to "de-mythologize" rather than "re-mythologize." The use of hyperliteralism will be justified if it establishes a context for simpler, more logical, and ultimately truer interpretations.

Translations are always a problem with ancient texts because the meanings of words must be inferred from the context and, where possible, from other texts. This level of inference is the Trojan horse which admits the biases of the translator. The translations of ancient texts are said to be "informed by tradition" or directed translations, which means that "signal" words (those which carry a hidden emotional, philosophical, or political charge) are prejudicially translated according to an established context, e.g., monotheism.

For example, in the Book of Genesis of the Old Covenant, the Hebrew word וּלְוָ֖ע (עַֽלּוּ) is usually translated "evil." Yet, the uncorrupted meaning is "bad," implying spoilage or physical corruption rather than moral corruption (Sacks, 1980, p. 51). An example from the New Covenant is the Greek word
hamartia which is most commonly translated "sin." However, hamartia was an archery term meaning "missing the mark" (Gaus, 1991, p. 13). So, a better translation would be "error" or "mistake" - a failed, but well-meaning, attempt with no implication of bad intent.

A word can become a signal word by being transliterated rather than translated and being carried straight into the target language. For example, the Greek word *baptizein* (βαπτίζειν) means "to bathe in water." Simply by leaving the word untranslated as the English word "baptize," the translators have attached special significance to the innocuous term "bathe." Leaving words untranslated can sometimes glorify or anthropomorphize them as in the Greek word *christos* (Χριστός) which means "anointed" but is transliterated "Christ."

A context must be provided for translation, and, at times, the biomythical context will be substituted for the Rabbinical and Christian traditions resulting in a different translation. However, for the most part, the theological translations have preserved remarkably the proper schema though in a somewhat distorted, yet recognizable, form. In other words, the relations among the symbols have remained fairly constant while the referents of the symbols have changed. It is by restoring the original referents that the case for biomyths will be asserted.

Many of the original scrolls and codices contained no punctuation, no capital letters, and no word separation. In ancient Hebrew texts, there is rarely an indication of vowel pronunciation. And to make matters worse, many of the originals are incomplete or damaged.

English translations will be used as sources when possible. I translated source material only where the biomythical meaning was obscured by the use of inappropriate theological terminology or poor translation. Whenever the
meaning of a particular word was critical, the source language was laboriously consulted in *Strong's Exhaustive Concordance of the Bible*.

In my translations, vowel points were disregarded because the original manuscripts are unpointed. Vowel points were added when the Massoretes standardized the Hebrew texts in the Middle Ages. For example, the Hebrew word 'ezer (אֶזֶר) meaning "help" or "aid" is based on the primitive root word āzar (אָזָר) which can mean "surround" and therefore "help." By eliminating the vowel points (אֶזֶר), the original possibility is restored that the word means either ēzer or āzar. This practice allowed words which were misinterpreted and canonized by the Massoretes to be reconsidered.

Foreign words and phrases which have not become accepted into English usage are written in *italics*. Within quotations, square brackets enclose interpolated comments. Where the quotation already contains square brackets, braces are used for this purpose. At various points, words or phrases are emphasized by setting them in *bold* type.
RESULTS

The primary example of a biomyth to be examined here is the Book of Genesis from the Torah. However, I will first present the results of a literature search. A brief summary of medical references found in ancient texts will provide a context for a detailed analysis of the Book of Genesis.

The ancient Egyptians were obsessed with the soul, the soul's residence in the body, resurrection, and life-after-death. Therefore, they were intrigued by the processes of reproduction and birth. The Egyptians, like certain African peoples today, believed that the placenta is home to the external soul - the ka. As illustrated in Figure 2, in the Old Kingdom, the placenta of the Pharaoh was afforded special treatment:

She [M. A. Murray] discovered among the titles of the Egyptian royal officials the significant "Opener of the King's Placenta." Other evidence demonstrates that the fate of the placenta, at any rate in the dynastic families, was regarded as of great importance, since it was thought to be the especial seat of the external soul. . . . a standard representing the royal placenta was carried before the Pharaoh down to the time of the Ptolemies (Needham, 1975, p. 19).

This standard preceded the Pharaoh in certain religious ceremonies.
Murray attributes the idea of "the bundle of life" to the Egyptians. This was a theory that the external soul, residing in the placenta, could be bundled up and safeguarded or unbundled and destroyed. There was even a placenta-god, Khonsu, which may have represented the moon as the placenta of the sun (Murray, 1930).

That the Egyptians used the Grand Allegory for their cosmogony is made explicit in this quotation from the earliest known religious writings - the Pyramid Texts:

Atum created in Heliopolis by an act of masturbation. He took his phallus in his fist, to excite desire thereby. And the twins were born, Shu and Tefnut (Campbell, *Oriental Mythology*, 1976, p. 85).

Atum could create by himself because the male "seed" was thought to require only fertile earth in which to germinate. In Figure 3, embryonic Egyptian royalty or the sun-god is depicted encircled by the Ouroboros, a serpent forming a circle by clasping its own tail. The figure represents the male "seed" containing the homunculus complete with scalplock.
Shu and Tefnut were the parents of Seb and Nut - the earth and the sky or firmament respectively - who subsequently gave birth to more gods. Nut is usually depicted as being supported in the sky by her brother-consort Seb or father-consort Shu with arms outstretched skyward. Seb and Nut together formed the Great Egg, the egg of the Great Cackler or Honker, from which sprang the Sun (Budge, 1969, p. 107). Referring to the predestination of rulers by Re, the Instruction-book for Merkikare reads: “He made them rulers in the egg” (Clagett, 1989, p. 297). In other cultures, this basic cosmological image is known by other names such as the World or Cosmic Egg - an archetypal representation of the Grand Allegory. In the following quote from “The Great Hymn to Aten,” the Egyptian god has all the functions of the placenta, including providing nourishment and oxygen to the foetus.
Who makes the seed grow in women.
Who creates people from sperm;
Who feeds the son in his mother's womb,
Who soothes him to still his tears.
Nurse in the -- womb,
Giver of breath,
To nourish all that is made (Clagett, 1989, p. 570).

In the supposed pantheism of Greek mythology, there is evidence aplenty
of the Grand Allegory. Erasmus Darwin claims that "many of the important
operations of Nature were shadowed or allegorized in the heathen mythology,
as the first Cupid [Eros] springing from the Egg of Night, the marriage of
Cupid and Psyche, the Rape of Prosperine, the Congress of Jupiter and Juno,
the Death and Resuscitation of Adonis" (Darwin, 1791, pp. vii-viii).

Needham recognizes that "ancient Greek thought shows many evidences
of appreciation of the mystery of embryonic growth, as for example in the
Orphic cosmogonies, which had their origin about the seventh or eighth cen-
tury B.C." (Needham, 1975, p. 27). The Orphic cosmogonies are preserved in
even greater variety than the Biblical ones. The Rhapsodic theogony is con-
sidered the most representative. It may have been composed in Athens about
500 B.C. (Cook, Zeus, 1965, p. 1033). It begins with Chronos, father to Aither
and Chaos, creating a white Cosmic or World Egg. From it, hatches the her-
maphroditic Phanes who held within himself the seeds of all the gods. Zeus
swallows Phanes and then creates the world. The myriad variations of the
theme attest to their antiquity in an oral culture.

Jung noticed that, "it is a remarkable fact that perhaps the majority of
cosmogonic gods are of a bisexual nature" (Jung, 1959, p. 173). Since the
preformationists believed the sperm contained the essential nature of either a
male or a female, it was potentially both male and female and, therefore,
androgynous. Also, the external genitalia of the foetus cannot be determined
as male or female prior to the ninth week. Therefore, abortions during the indifferent stage would reveal an apparently hermaphroditic embryo.

In another popular cosmogony, the black-winged Nyx lays a "breath" egg from which hatches golden-winged Eros. This leads in due course to the generation of the cosmos. A. B. Cook observes: "Apparently heaven and earth were regarded as the upper and lower halves of the vast egg" (Cook, 1965, p. 1020). The egg encapsulates the very essence of ontogeny. In the Egyptian cosmogony, Geb and Nut formed just such a structure.

![Orphic Eros in the World Egg](image)

**Figure 4. Orphic Eros in the World Egg.**

After the creation, Zeus and his sister Hera marry. The god Ge makes Hera a wedding gift of the branches of a golden apple tree. Hera plants them in her garden which was near Mount Atlas and which was protected by a snake. Hera's garden was sometimes called "the garden of Zeus" or "the garden of the gods" (Cook, 1965, p. 1021).
Figure 5. Phanes Hatching from the Cosmic Egg. Note the umbilical cord wrapped about him.
Though he was undoubtedly writing of the sphere of the visible galaxy, the cosmogony of Plato's *Timaeus* is also that of a living being, a god, which:

... resembles as nearly as possible that of which all other beings individually and generically are parts, and which comprises in itself all intelligible beings, just as this world contains ourselves and all visible creatures. For god's purpose was to use as his model the highest and most completely perfect of intelligible things, and so he created a single visible living being, containing within itself all living beings of the same natural order (Plato, Lee, 1971, p. 43).

C. F. Schatz identifies several anomalies of foetal developmental which may have inspired mythological characters: "Thus a cyclops foetus may have suggested Polyphemus, a sympodial one Siren, and a diprosopous one Janus. The idea of Centaur may have originated from a hydrocephalic calf, and the Gorgon head from an acormic placental parasite. Occipital encephalocoele would have produced Atlas, foetal exomphalos Prometheus, and achondroplasia Egyptian Ptah. The likelihood of these surmises increases on careful consideration" (Needham, 1975, p. 29, footnote 5).

Ulansey informs us that the ancient Greeks were aware of this mythical guise of science: "According to the Stoics "a great number of the gods have also been derived from scientific theories about the world of nature. . . . These impious tales are merely the picturesque disguise of a sophisticated scientific theory."

In these traditional cultures, divine sex in all its bewildering varieties was responsible for creating the world. The agricultural allegory symbolized the creative power of the sperm as a fertilized seed, complete and ready to grow if implanted in suitable soil under adequate sunlight and moisture. The seed might be bare or encased in a nut or fruit. The avian allegory symbolized the homuncular sperm as a fertilized egg requiring only warmth to
mature. The firmament which supported the Sun, Moon, and stars, was symbolized by the seed coat, the egg shell, or even the skin of the fruit. From these few examples, it is apparent that many ancient religious myths of various cultures employed the allegory of ontogeny as the paradigm of cosmogenesis.

The Book of the Work of Beginning (Genesis)

The *Torah* is the holiest of the Hebrew scriptures. It comprises five approximately equal-length scrolls - Genesis, Exodus, Leviticus, Numbers, and Deuteronomy - called the five books of Moses, the first five books of the Bible. In English, the *Torah* is referred to as the *Pentateuch* from the Greek word *pentateuchos* or "five scrolls." The term *Torah* can refer to all authoritative Jewish tradition including the Laws of Moses and the voluminous, legalistic written interpretations of its 613 laws, the *Talmud*.

*Torah* (תּוֹרָה) is a Hebrew word for "teaching" or "instruction." *Moseh* (משה) or Moses is traditionally deemed the author. It is so called because it contains civil, dietary, and religious laws given by Moses to the Jewish people.

The *Torah* opens with the creation accounts of Genesis. The literal interpretation has many difficulties. Genesis contains many apparent logical contradictions which cannot be resolved through a literal interpretation, e.g., there are two separate, contradictory creation stories (Genesis 1:1 ff., 2:4 ff.). The first creation account is thought to be a retelling of an earlier Sumerian creation myth. As science, the book is incompatible with current scientific theories of the earth's origin, e.g., the estimated four billion years it would have taken to create the Earth via "natural" processes versus a
"supernatural" creation some six thousand years ago. As history, the book is unverifiable and implausible, e.g., Adam lived 930 years (Genesis 5:5).

The doctrine of Biblical creation has these major features: 1) God was the sole creator of the universe; 2) the mechanism of creation was articulation; 3) the World was created from nothing: no phenomenological reality existed prior to the creation; 4) the avian and terrestrial life forms were created from dust; 5) the first man was created in the image of God; 6) the first woman was formed from his rib; 7) they were expelled from Paradise for sinning. Propositions two and three were developments of early Christianity written hundreds, if not thousands, of years after the original compositions.

The original name in Hebrew for the First Book of Moses was Sefer Maaseh Bereshith - "the Book of the Work of Beginning." When translated via Greek, the title became Genesis, meaning "origin" or "descent." Today, the Jews refer to their sacred books by the first word or words of each book. The first word of the Book of the Work of Beginning is bereshith which is translated "in the beginning."

The Book of the Work of Beginning describes the covenants made by the Lord God with Adam and the Patriarchs - Noah, Abraham, Jacob - and through them with his "heritage" Israel. Each covenant made and broken constitutes a cycle in the formation of Israel, the people.

Though the tongue of the Creation account is alien to modern ears, the Book of the Work of Beginning can be beautifully poetic. A large part of the modern appeal is the enigmatic language which results from the imperfect translation of a two-thousand-year-old book read out of cultural context.
TheConceptus(Genesis1)

The cosmosthetoTorahis traditionally pictured as a disc-shaped land totally immersed in water. The "waters above" the land were excluded by a dome - the "firmament." Precipitation entered through gates in the dome. Outside the dome lay "heaven" in which the moon, the sun, and the stars moved in fixed, circular orbits around the "earth." As evidenced by springs and wells, water flowed not only around but under the land which was supported by great rock piers sunk deep into the "waters below." Somewhere underneath the land but accessible only through the grave was sheol, the nether regions. Humanity inhabited the air pocket between the "earth" and the "heavens." This model is embodied in the Book of the Work of Beginning.

The first line of the Torah is "In the beginning God [Elohim] created the heaven and the earth." The Hebrew word for "heaven" is shāmāyim (שָׁמַיִם) which is better translated "sky" or "skies", the invisible arc in which the stars and planets appear to move. The word bereshith (בְּרֵאשִׁית) is translated "in the beginning;" however, the usage here seems to indicate "in the beginning of" (Sacks, 1980, p. 32). Yet, the implied preposition has no object to indicate just what is beginning.
In Genesis 1:26, God says: "Let us make man in our image." The Hebrew word used here for "God" is the plural ʾēlōhîm (אֱלֹהִים) or "gods." When used with a singular verb, ʾēlōhîm is translated "God." ʾēlōhîm is probably derived from the Canaanite name for the father-creator-god ʾĔl (אֱלֹהִים), which could also refer to the chief god of any locality. Thus, a plurality of Canaanite deities is subsumed in the one word ʾĔl as well as in ʾēlōhîm. Again, in Genesis 3:22, the Lord God says: "Behold, the man is become as one of us."

To explain the use of plural forms for a singular "god," one suggestion is that the usage of us and of the plural form ʾēlōhîm allude to a mystical
plurality within the nature of God. It has also been suggested that the plurality represents the idea that God is androgynous, containing both the male and the female principles. Another proposal suggests that 'elohim is the *pluralis majestatis* - the *royal* we. But, the *royal* we does not refer to a ruler as a person but to an imperial or corporate ruler, i.e., a kingdom of like beings with a ruler on the throne.

So, there appear to have been multiple beings of God's sort, acting corporately, in the world prior to the Creation. This interpretation is supported by the text and is consistent with the supposed plural nature of God.

Later, in Genesis 4:17 and 4:26, Cain and Seth, sons of Adam and Eve, acquire wives from an undisclosed source. Still later, in Genesis 6:4, there are antediluvian giants, the *Nephilim*, which were not from the seed of Adam. They are mentioned again after the Flood in Numbers 13:33. Also, there were the "sons of God" or "men of renown" which came to the daughters of men. Because both the wives and the "sons of God" successfully interbred with humans, they were necessarily human themselves. A species can be defined as a set of (potentially) interbreeding individuals (Neil Campbell, 1987, p. 433). So, there were other humans, giant humans, and divine humans in the world at the time of the Creation.

Since humans require a *pied-a-terre*, the Creation could not have been of the Earth or of any astronomical structures which led to the development of the Earth such as the Solar system, the Milky Way galaxy, or, for that matter, the Universe. Thus, the Book of the Work of Beginning assumes a physical universe.

Given a populated Earth, the Creation cannot refer to cosmogenesis nor to anthropogenesis nor to creation *ex nihilo*. Yet, Genesis 1:1 refers
specifically to the creation of "the heaven and the earth." Biblical Hebrew employed no single word for "universe" or "world." "The heaven and the earth" is a merismus which indicates the entire world or cosmos. A merismus is a pair of antonyms which signifies a whole rather than the constituent parts, e.g., "And there was evening and there was morning, one day." In the Torah and in other Near Eastern literature, this device is frequently used to designate a whole which incorporates a fundamental duality. Sacks suggests that "had the text been written in Greek perhaps the author would have used the single word cosmos" (Sacks, 1980, p. 33). The merismus of "heaven" and "earth" is a biocosmos.

A biocosmos is illustrated in Figure 7 which depicts a human foetus floating inside the amnion. Everything in the drawing arises from the fertilized egg; the mother is not pictured. An unborn child is called an embryo in the first eight weeks of pregnancy. Thereafter, it is called a foetus or fetus (Moore, 1983, p. 1). The visual similarities between the cosmological model in Figure 6 and the biocosm of Figure 7 are striking. And, it is on visual similarity that many analogies are made. It is enlightening to reflect upon this biosphere nestled snugly inside the mother in light of the quotation of Genesis 1:6.
Figure 7. A Biocosmos. A cutaway drawing of the human conceptus.

And God [Elohim] said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters. And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so. And God called the firmament Heaven [sky].

Genesis 1:6

This is an elegant description of the embryo floating in "the waters which were under the firmament" (the amniotic fluid), and separated from "the waters which were above the firmament" (the maternal blood pools of the placenta) by "the firmament" (the amniotic sac). Note that the conceptus is isolated from the mother by the amniotic sac ("firmament") and interacts with the maternal environment ("waters above") only through the chorionic villi ("the gates of heaven" of Genesis 7:11) of the disc-shaped placenta. The term placenta is derived from the Greek word πλάκως which means "a flat cake."

Stephen Jay Gould observes that "the nascent cosmos of Anaximander, Anaximenes, and Democritus was surrounded by an envelope resembling the
amniotic membrane" (Gould, 1977, p. 13). It seems possible that many ancient writers were not ignorantly fantasizing an astrophysical cosmos but were intelligently describing a biological cosmos. They were able to describe it not because of having heard a hearsay account from God but because they witnessed it. Needham summarizes Talmudic thought on embryonic life with a quote: "It floateth like a nutshell on the waters and moveth hither and thither at every touch." The ancient writers had personally seen and examined placentas, embryos, and foetuses.

Most animals are born inside the caul, which either the newborn or the mother must rupture. Sometimes during human birth, the amnion is not ruptured. An observer of an embryo floating inside an intact amniotic sac might describe the sight poetically as "the Spirit of God moved upon the face of the waters." A seven-week-old aborted human embryo is approximately an inch long and easily visible inside the sac.
Figure S. Comparison of a Biocosmos and the Hebrew Cosmos.

<table>
<thead>
<tr>
<th>Modern Terminology</th>
<th>Mythical Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>God's dwelling</td>
</tr>
<tr>
<td>Maternal blood</td>
<td>Waters above</td>
</tr>
<tr>
<td>Chorionic villi</td>
<td>Gates of Heaven (sky)</td>
</tr>
<tr>
<td>Placenta</td>
<td>Earth</td>
</tr>
<tr>
<td>Chorion</td>
<td>Firmament (cloud arc)</td>
</tr>
<tr>
<td>Umbilical cord</td>
<td>Entrance to Sheol</td>
</tr>
<tr>
<td>Amniotic fluid</td>
<td>Waters below</td>
</tr>
<tr>
<td>Embryo</td>
<td></td>
</tr>
</tbody>
</table>

Turning to Genesis 1, let us reinterpret the text according to the biocosmic paradigm.

In the beginning [of] God [Elōhím] created the heaven [sky] and the earth. And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God [Elōhím] moved upon the face of the waters.

Genesis 1:1-2
Chaos was the word used by the ancients to denote the primal, unformed material from which something is formed, e.g., a cosmos, a biocosmos, an embryo. This is the *prima materia* of the alchemists. Chaos is typically symbolized by the universal solvent - water - turbulent water which dissolves all forms and prevents anything new forming. Entering the abyss means dissolution of form in the waters of chaos. In Greek mythology, Chaos corresponds to the primordial waters.

The Hebrew word *tehôm* (תֵּהוּן) means an "abyss" or the "deep," especially a surging mass of subterranean water. *Tehôm* is related to *būwm* (בּוּם) which is Hebrew for "agitate greatly" or "destroy." So, "the deep" is a synonym for "chaos." Ancient preformationists believed the menstrual blood to be chaotic. By contrast, the sperm was thought to contain the homunculus, the miniature human, the forms or images of the embryo. *Tehôm* is usually feminine which correlates with the feminine "field." The Hebrew word *bōhuw* (בֹּהוּ) means a "vacuity" or "emptiness." Thus, the phrase "the earth was without form, and empty" merely confirms the presumed entropic state of the field.

The Hebrew word *bāra‘* (בָּרָא) means "create," "feed a formative process," or "fructify." So, *êlôhîm* is "feeding" creation by providing the formative principle of the homunculus. The word *mayim* (מָיִם) means "waters" or "water" and appears here as a euphemism for "semen." *Mayim* is a dual of a primitive singular root; so, it implies a merismatic duality - the preformationist duality of male and female. The word *ruwâch* (רְוָךְ) means "wind," "breath," or "spirit," a reference to the animating life force. In ancient times, most people thought that *life* required a spiritual force, a spirit, or a soul to animate matter. This theory is called vitalism. Even today,
when biochemistry seems theoretically sufficient to account for animate life, vitalists still exist. In Greek mythology, Aither corresponds to the sky-god representing "breath" or spirit.

The following table summarizes the retranslation:

**TABLE I**

MODERN TERMINOLOGY FOR GENESIS 1:1-2

<table>
<thead>
<tr>
<th>Modern Terminology</th>
<th>Mythical Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the beginning of conception, the homunculus initiated embryogenesis.</td>
<td>In the beginning [of] God created the heaven and the earth.</td>
</tr>
<tr>
<td>And the feminine <em>field</em> was chaotic and featureless.</td>
<td>And the earth was without form, and void, and darkness was upon the face of the deep.</td>
</tr>
<tr>
<td>And the life force of the homunculus animated the semen.</td>
<td>And the Spirit of God moved upon the face of the waters.</td>
</tr>
</tbody>
</table>

In Figure 8 can be plainly seen the answer to Sacks' question "In the beginning of what?" - In the beginning of the biocosmos, of new life, of the conceptus. Or, as Sacks puts it: "the world was pregnant..." (Sacks, 1980, p. 50). The conceptus begins as a single fertilized "seed" called a zygote (*êlôhim*) which will eventually generate the amnion, placenta, and all other structures of the biocosm ("the heaven and the earth"). The "field" is chaotic, without form or definition ("the earth was without form, and void").

The zygote is the parabiosis of the male and female sex cells. So, *êlôhim* does indeed signify the dual male-female nature of God as well as indicate the *pluralis majestatis*. The fertilized "seed" normally contains either XX (female) or XY (male) sex chromosomes, which determine the sex of the embryo.
The female ovum contains only an X chromosome, whereas the sperm may contain either an X or a Y. Therefore, the sperm is literally male or female, and, though not androgynous, potentially both male and female. The ancients regarded the sperm as being either XX or XY, which does not affect the analogy.

Since preformationist theory specifies that the semen carries the "image" of the embryo or homunculus while the female supplies only organic material for growth, the presumed masculinity of תֵּאֹתֵם is explained even in the case of a female zygote: the sex of the female, no less than the male, is determined by the male "seed." This may explain why the Goddess is virtually ignored—her true contribution to embryogenesis was unknown.

The biocosm contains water in the form of amniotic fluid, which has a chemical composition similar to that of sea water: it tastes salty. Water is a universal symbol of transformation and regeneration. Water is the universal solvent: it dissolves all things. Yet, life arises only from water. G. C. Evola generalizes that "water symbolizes terrestrial and natural life, never metaphysical life" (Cirlot quoting Evola in La Tradizione Ermetica [Bari, 1931], 1971, p. 367). Therefore, the waters mentioned in Genesis refer to a natural birth, not a metaphysical one. This association survives today in the rite of baptism and in psychoanalytic theory, in which Freud notes that water imagery in dreams symbolizes birth.

The Embryo (Genesis 1:26)

The description of the creation of the first man and woman is deceptively simple yet filled with troublesome details. In one of the most famous
quotations from the entire Bible, Genesis 1:26-28, God creates man on the sixth day.

And God [‘Elōhîm] said, **Let us make [the] man [ha’ṣādām] in our image, after our likeness** . . . So God created man in his own image, in the image of God created he him: **male and female created he them.** And God blessed them, and God said unto them, **Be fruitful, and multiply, and replenish the earth, and subdue it** . . .

Adam is English for **ha’ṣādām** (חַדָם) which is a Hebrew word for "the man." The Hebrew word for "earth" or "soil" is **ādāmāh** (אדמה). Since Middle Eastern soil tended to be reddish, **התר** also means "to show blood," "flushed with blood" or "rosy-faced" - like a newborn baby who is both flushed in the face and covered with blood. Also, **התר** can mean a red stone such as ruby or garnet. So, the derivation of "Adam" from "earth" reveals both a play on words and a universal truth - humanity comes from and returns to the earth. However, a more literal and more accurate translation of **ādām** would be "earthman," which meant human being. Earthman as personified in Adam is the symbol of primordial humanity. To the Hebrews, earthman symbolized specifically the Adamic race - the Semites. Like Anthropos, Phanes, and Purusha, Earthman is androgynous.

Biblical Hebrew has no capital letters to distinguish proper names. In Genesis I through 16, "earthman" is translated into English as either "man," "Man," or "Adam" at the discretion of the translator.

One of the most profound mysteries of Judaism, Christianity, and many other religions is the manner in which humble **Homo sapiens** could have been made in the image of his god. What is the image of God?

The creation of life from living matter is the most miraculous means of making an image known to humanity. The resultant creature is not only three-dimensional, fully-functional, and animate, but self-repairing and self-
replicating. But, even miracles have methods. Biogenics, the making of life from life, is accomplished via the genome - the set of chromosomes made of DNA (DeoxyriboNucleic Acid) molecules and containing genes. The genome contains the coded "instructions" or "commands" which will direct the ovum to metamorphose into a human being.

If 'elöhím' is taken to be the homunculus, then 'elöhím' contains a full symbolic description of a human being in the form of genetic code. Earthman is self-created by the direct expression of his own genes in the genome of 'elöhím'. Because the zygote directs its own growth processes, it is possible to say literally that "God [homunculus] created man [earthman] in His [homunculus's] own image [genome]." 'Elöhím' metamorphoses himself into an earthman in a self-referential process using the inherited genetic code - the homunculus from God the Father. The ancients, of course, did not consider genes or genomes; however, they knew of their effects.

And, everyone is self-created in this manner: "male and female created he them." The merismus "male and female" is simply another way of saying "earth people" or simply "humans." This is corroborated by the direct substitution of "male and female" for "man" in Genesis 1:27.

Since the genome also codes for the placenta and amnion, it is also possible to say literally, "In the beginning God [homunculus] created the heaven and the earth [conceptus]." And, since the menstrual blood was presumed to be chaotic, it is possible to say literally "And the earth [earthman-stuff] was without form, and void."

In this passage, the author used the plural verb form with 'elöhím. It is as if the plural genome comprised of the male and female chromosome sets were agreeing or affirming its corporate intention to create a human being in
the image of its own genes: "Let us [zygote] make man [earthman] in our image [genomes]." The genome then is the *imago Dei* - the image of God. The *us* in the passage refers equally well to either the homuncular sperm or the zygote or the genome with its diploid complement of chromosomes.

The command "be fruitful, and multiply" is a reasonable command for the genome to issue to the zygote, which must grow from a single cell into a body of trillions of cells in a period of nine months. (The total number of cells in an adult human may approach $5 \times 10^{13}$.) The command continues "and replenish the earth, and subdue it." The Hebrew word שָׁלֹ֖ל (šālōl) is here translated "replenish." A better translation is "fill" or "fulfil." The biocosm must be fleshed out or "filled" with living cells in order to develop normally. And, the biocosm is increasingly ruled or "subdued" by the growing embryo as tissues differentiate and the nervous system assumes control.

The author interspersed throughout Genesis 1 the tag line "and it was so." This phrasing makes it seem as though a blueprint has been established, but nothing has yet been built from the plans. This is exactly the case in the beginning of embryogenesis. The genome directs the spatio-temporal self-development of a living creature with millions of trillions of interconnected, moving parts. To give a comparison, the Space Shuttle may have a few million parts, very few of which are moving. A better analogy of the genome would be the plans for an entire city including the plans for every building, every vehicle, and every device in it. Yet, the genome is incredibly more complex and ordered than a blueprint. Other than the hyperorganism Earth, itself, the genome is the most highly-ordered physical structure yet recognized anywhere in the universe.
Creation in the Torah is the act of distinguishing by naming. Creation has no independent order besides the utterances of Elohim. In the physical cosmos, this is not the case. As we currently understand them, the laws of physics apparently hold not only here on Earth but in the heart of the farthest star as well. However, in the biocosmos, it is precisely the utterances of Elohim - the expression of the genome - which establishes order in the chaos of the womb and governs creation. And, biocosmic creation consists of Elohim (genome) speaking (expressing) the creative word (gene).

In Genesis 2:7, God brings the man to life.

And the LORD God [YHWH Elohim] formed man (earthman) of the dust of the ground, and breathed into his nostrils the breath of life: and man became a living soul.

Since the foetus does not breathe through its lungs while in the uterus, there is an anxious moment following birth and prior to the newborn's first breath - "the breath of life." At this point, the baby was considered to be a living soul, i.e., a viable new member of the species. Or, as the Lord God says in Genesis 3:22, "Behold, the man is become as one of us" - an air-breathing human being. This critical time of transition is incorrectly mentioned before the planting of the garden in the next verse. Apparently, the object of this literary license is to allow the man to be a principal in the following action.

Romans 8:22 seems now to refer to parturition: "For we know that the whole creation groaneth and travaileth in pain together until now."

The Uterus (Genesis 2)

Christians have long sought the actual site of Creation specified in the Torah as "the Garden of Eden." In the opinion of Saint Thomas Aquinas, "the
situation of Paradise is shut off from the habitable world by mountains, or seas, or some torrid region, which cannot be crossed; and so people who have written about topography make no mention of it" (Thomas Aquinas, *Summa Theologica* 1, Q. 102, Art. 1, Reply 3). Every new and unexplored land was a possible site of Paradise. When Christopher Columbus "discovered" South America in the fifteenth century, he believed that what is now the mouth of the Orinoco River in Venezuela might be the fabled garden. Despite the insistence of science that no such land exists, the search for Eden and for other Biblical sites, such as the mountain where Noah's ark made landfall, continues today in modern Egypt, Iraq, Israel, Jordan, Syria, Turkey and at other sites in the Near East.

The landmarks used by Columbus and others in attempting to identify the modern location of Eden were taken from the ancient description given in Genesis 2:8-10:

And the LORD God [YHWH 'Elohim] planted a garden eastward in Eden: and there he put the man whom he had formed. And out of the ground, made the LORD God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil [bad]. And a river went out of Eden to water the garden; and from thence it was parted, and became into four heads.

In Genesis 2:11-14, the four "heads" are named - the Pishon, the Gihon, the Tigris, and the Euphrates. Only the latter two are known in modern times. If the Euphrates, the longer of the known rivers, is considered to be the river out of Eden, then two unidentified rivers still remain. Some writers have associated the Gihon with the Volga river or with the White Nile. "Gihon" means a "bursting forth" or "spring" and is the more important of two springs serving Jerusalem (*The Zondervan Pictorial Encyclopedia of the Bible*, Vol. 2, 1976, p. 721). Nothing is known of the Pishon, but it might
represent the Blue Nile, since the text associates it with the land of Cush (Ethiopia).

Assuming at least one of the unidentified rivers does represent the Nile, then the rivers demarcate the far eastern and western extents of the land from Egypt to Assyria including the Arabian peninsula (Havilah). Though more distant lands were known through trade, this area includes the entire familiar world. The world over, the number four is symbolic of the World (Cirlot, 1971, p. 232). So, these four rivers are interpreted as watering symbolically the entire earth.

According to Sacks, "the Garden of Eden can be reached by going in any direction, but because of this openness the journey cannot be undertaken since no man knows where to begin. The never-to-be-reached goal is just beyond every hill" (Sacks, 1980, p. 52). Exactly so. It is an article of faith in mystical circles that such journeys and adventures actually take place, in some sense, within the person. The description in Genesis 2:8 is a logical map, like a treasure map. It requires a starting point, an origin. The map is applicable to all such starting points. Loren Eiseley teases "the story of Eden is a greater allegory than man has ever guessed" (Eiseley, 1959, p. 125).

While the description in Genesis 2:8 has proved insufficient for locating a physical site on the Earth's surface, it is adequate for locating a transient physical site within the body of the human female - the placenta. Sacks notes that in Genesis 2:5, "the use of the word terem in the fifth verse seems to imply that the seeds of all things, either in a literal or in a figurative sense, were already in the ground" (Sacks, 1980, p. 49). This is the situation when a zygote, containing the seeds of biocosmic creation (genes), implants itself into the uterine wall.
The description of Eden as being "eastward" indicates that it is of a special, ethereal nature. The North-South axis was not widely known in the ancient world. The ancient Hebrews considered East to be the primary direction, just as moderns consider North to be. According to Cirlot, "the Orient, since it is the point where the sun rises, symbolizes illumination and the fount of life; to turn towards the East is to turn in spirit towards this spiritual focal point of light" (Cirlot, 1971, p. 245). The placenta is literally "the fount of life" to the growing foetus. And, the day is said to be born in the East when the sun rises; the East is therefore a sign of new beginnings. The placenta is the very epitome of birth and, therefore, of new beginnings.

The East also represented the horizon of the known world. Therefore, "to the East," "in the East," "from the East," and "eastward" may signify "from beyond the limits of the normal horizon," i.e., occluded, ethereal, spiritual, psychical, or even divine. In Near Eastern literature, "Eastern" phrases are often a literary convention indicating the psychological or spiritual nature of the subject. Lands in the East can refer to states of being or of mind. Men from the East can refer to spiritual or psychical beings. In Genesis 4:16, for example, Cain settles in the land of Nod or "Wandering," East of Eden. In other words, though he physically settles somewhere, mentally he continues to wander. In Job 1:1, Job lives in the Eastern land of Uz or "Deliberation." Or put another way, Job was thinking, deliberating, and what follows are his thoughts. By virtue of its being inside the uterus, the placenta is definitely beyond our normal horizons.

The East was also considered home to earlier ancestor civilizations, just as the womb might be considered the temporary home to all those who preceded us.
The word *eden* means either a garden in general or "the first habitation of our first parents" (*The Zondervan Pictorial Encyclopedia of the Bible*, Vol. 2, 1976, p. 200). "First parents" is an apt description of the sperm and ovum which are everyone's first parents. Pursuing the analogy, the womb or uterus would then be the *first* habitation of one's first parents. Understood in this context, *eden* is a beautiful idiom for the original site of creation within woman.

Alternatively, from the Persian word for paradise, *eden* can mean a park or enclosure (*Pentateuch and Haftorahs*, 1960, p. 7). A park in Persia was a garden in which animals were kept. Such parks were always filled with trees, certainly trees with edible fruits and nuts, and privately owned. As a reflection of the entire world, a paradise was a miniature world, a microcosm over which its owner ruled. The placenta is decidedly enclosed and filled with miniature "trees" which bear fruit in the sense that the embryo can draw nourishment from them. Because the embryo grew from a "seed planted" by the father, the Hebrews called the embryo "fruit of the womb" (יֶדֶנֶּה יָדוֹ). Therefore, by analogy, the placenta is an enclosed, private garden. And, the villous area which corresponds to the "garden" is in fact facing the mother, i.e. away from the reader and into the page. So, the "garden" is "eastward," i.e., beyond the horizon of the developing embryo.

Cirlot writes: "Mystics have always traditionally considered the feminine aspect of the universe as a chest, a house or a wall, as well as an enclosed garden" (Cirlot, 1971, p. 153). In Hebrew, *eden* (ֵדֵנֶה) means "soft," "pleasant," "delight." In myths, the garden is often the scene of a delightful union or connection. With certain exceptions - the union of sperm and egg, monozygotic twins, babies born with shared organs, tissue transplants, and
certain rare, medical conditions - the union of mother and placenta is the most intimate, softest, and, reportedly, most delightful connection possible between two human beings.

The placenta is located within the uterus, which is the "foundation" of a woman. The following quotation is part of a hymn written by the Kabbalist Isaac Luria. It was sung at the Friday evening meal.

Her husband embraces
her in her foundation,
gives her fulfilment,
squeezes out his strength (Scholem, 1965, p. 143).

Clearly, the metaphor is sexual and "her foundation" refers to the uterus.

It has already been mentioned that the Egyptians, as well as some modern Africans, worshipped the placenta as the seat of the external soul. Many Hellenes did likewise:

... Amon of the Oasis; the most peculiarly holy of all the Amons, to whom Alexander the Great went for his initiation as a son of the god. The thing which is worshipped as a god has not the shape that artificers usually applied to the gods; its appearance is most like an umbilicus, and it is made of smaragdus and gems cemented together. The umbilicus or omphalos was a well-known object of worship in the Aegean, where its wrappings of wool were represented by carvings on the stone. Its shape was rounded and amorphous, suggesting that it was neither the umbilicus itself nor the umbilical cord but actually the placenta (Murray quoting Daressy (Ann. du Serv. ix, 69), 1930).

The placenta was decorated and worshipped as a sacred object.

Omphalos is a Greek word for "navel" or "hub." It was also a conical shrine at Delphi, considered by the ancient Greeks the hub or navel of the world. Cook writes regarding the Cosmic Pillar that Roscher "has shown that the Greeks, like many other peoples, conceived of the earth as a flat disk with a central point called its omphalos or 'navel'" (Cook, Vol. I, p. 167).
Moreover the word of the LORD came unto me, saying, Son of man, take up a lamentation upon the king of Tyrus, and say unto him, Thus saith the Lord GOD: Thou sealest up the sum, full of wisdom, and perfect in beauty. Thou hast been in Eden the garden of God; every precious stone was thy covering, the sardius, topaz, and the diamond, the beryl, the onyx, and the jasper, the sapphire, the emerald, and the carbuncle, and gold: the workmanship of thy tabrets and of thy pipes was prepared in thee in the day that thou wast created. Thou art the anointed cherub that covereth; and I have set thee so: thou wast upon the holy mountain of God; thou hast walked up and down in the midst of the stones of fire.

Ezekiel likens the king of Tyre to a cherub covered with every precious stone and dwelling in Eden. The use of rare, precious stones is more consistent with worship than with mere reverence. The adornment of the placenta or its covering by both the Egyptians and the Hebrews is hardly surprising given the four hundred years when the Hebrews were Egyptian slaves according to the Book of Exodus.

Ezekiel describes Eden as "the garden of God" planted on the holy mountain of God. This echoes the garden of Hera in the Orphic cosmogony.

The literature of Sumer contains similar references. Cassuto points out that "in the Epic of Gilgamesh reference is made to the trees of the garden of the gods, whose fruits are precious stones, such as carnelian and sapphire and rutil. ... Possibly, there is a reference to š̂arbaq [stones of fire] in Ugaritic poetry in the form of ṣ̂arbaq [stones of lightening]" (Cassuto, 1975, p. 106). Recall that the image of Eros in the Cosmic Egg in Figure 4 was also a carnelian.

We now return to a further description of Eden in Genesis 2:10-12:
And a river went out of Eden to water the garden; and from thence it was parted, and became into four heads. The name of the first is Pison: that is it which compasseth the whole land of Havilah, where there is gold: And the gold of that land is good: there is bdellium and the onyx stone.

The New Jerusalem Bible provides a translation which is more useful to the purpose here because of the translation of "onyx" as "cornelian:"

And a river flowed from Eden to water the garden, and from there it divided to make four streams. The first is named the Pishon, and this winds all through the land of Havilah where there is gold. The gold of this country is pure; bdellium and the cornelian stones are found there.

This may also be a reference to the decoration of the placenta.

Gold is a symbol of divine purity and of the Sun. Silver is a symbol of lesser purity and of the Moon. Onyx contains layers of different colors. Carnelian (cornelian) is the reddish-white color of flesh or the red color of oxygenated blood in arteries: sapphire is the blue of deoxygenated blood in veins, i.e., the colors of the placenta and umbilical cord.

Beyond doubt, in an area from Africa to the Eastern extreme of the Near East, from Ethiopia to Mesopotamia, placenta worship was well-known, even commonplace. The placenta was referred to in various cultures as God's garden. It was often decorated lavishly with precious stones, metals, and fabrics. It was described as perfect in knowledge and worshipped as divine.

In Genesis 2:10, a single stream issues from Eden (garden) to water the garden (Eden). This indicates that somehow the garden waters itself via a river which renews itself from its own waters. The only physical situation which might satisfy these requirements is a spring which waters are returned to its underground source. This single river branches into the four points of the compass, a geographical situation not found in the Near East.
To justify the second part of the description of Eden beginning at Genesis 2:10, a new image must be introduced. When viewed from the fetal aspect, the placenta is served by the umbilical cord, which contains the umbilical vessels. At the point where it joins the body of the placenta, these blood vessels branch off in the four directions from the end of the umbilical cord. This configuration is aptly described as a single river branching into four. The umbilical vessels are unusual "rivers" in that their headwaters represent both their source and their destination, because the blood is recirculated.

The garden analogy for the placenta clearly agrees in function, number, and appearance with the descriptions of Genesis 1. Eden is located within the body of the human female. Thus, the Christians are correct that Eden exists, the mystics are correct that Eden is within the individual, and the scientists are correct that no such land exists.

The Gnostics refer to Edem, a feminine, chthonic creature which consorts with Elohim. The main evidence that Scholem brings to strengthen his thesis is the discussion of the creation of man in a gnostic text, where man is created from the marriage between Edem, a mythical figure named also Earth, which has a pneumatic element, and God. ... The text quoted by Hypolitus considers Edem, the feminine counterpart of Elohim, as conferring to man the soul whereas Elohim begets the spirit. However, the gnostic text deals with a personification of earth rather than with earth as material. Edem is a virgin, half-human and half-serpent, whose name is earth; the extent to which she is literally earth is unclear (Idel, 1990, p. 43).

Edem (אֶדֶם) is supposedly a corruption of Eden (אֵדֶן) by gnostics with a poor command of Hebrew. It is equally likely that it is a corruption of Adam (אָדָם) which is related to "earth." In any case, this half-human, half-serpent, semi-divine physically resembles the placenta connected by the serpent-like
umbilical cord to the foetus. It provides the spirit or "breath" (*pneuma*) to the foetus.

In another form, the river analogy is, at least, several thousand years old. The Sumerian word *bu* means both "river" and "vagina." The Babylonian word *pu* means both the "source of a river" and "vagina." When a woman's "water breaks," her vagina is figuratively the source of a river, a river of life no less than the Euphrates or the Nile.

The Foetal Placental Circulatory System (Genesis 2:8)

Cirlot summarizes the general symbolism of the tree as "the life of the cosmos: its consistence, growth, proliferation, generative and regenerative processes. It stands for inexhaustible life, and is therefore equivalent to a symbol of immortality" (Cirlot, 1971, p. 347). Due to its critical role in supplying all the needs of the developing foetus, the form of the umbilical "tree" is a natural symbol of birth and nourishment. By virtue of its status as an "animal tree," the symbol was extended to embody all aspects of procreation and fecundity in the animal and plant kingdoms. Because of its role in connecting the earth and sky in the biocosm, it became a symbol of the connection between the physical and spiritual worlds as well.

In Genesis 2:8, God plants the "tree of life" - the tree which prolongs life - in the garden as food for man. The "tree of life" is the umbilical vein, which carries life-giving blood from the mother to the embryo. "The tree of knowledge of good and evil [badl]" is the twin umbilical arteries, which re-circulate the waste-laden, oxygen-poor blood back to the mother. So, the dual nature of the umbilical arteries which have a single function is captured in the Hebrew idiom.
These two "trees" are "in the midst of the garden." Furthermore, the placental "garden" is actually "planted" in the endometrium of the vagina of the mother. The fertilized ovum implants itself in the endometrium. The placenta is a structure which grows from the ovum.

In the following table, modern anatomical terminology is juxtaposed to the allegorical description. The words in **bold** correspond to modern terms.

### TABLE II

**MODERN TERMINOLOGY FOR GENESIS 2:8**

<table>
<thead>
<tr>
<th>Modern Terminology</th>
<th>Mythical Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implantation of blastocyst</td>
<td>And the LORD God [YHWH 'Elōhīm] <strong>planted</strong> a garden eastward in Eden: and there he put</td>
</tr>
<tr>
<td>Embryo</td>
<td>the <strong>man</strong> whom he had formed. And out of the <strong>ground</strong>, made the LORD God to grow every</td>
</tr>
<tr>
<td>Endometrium</td>
<td><strong>tree</strong> that is pleasant to the sight, and good for food: the <strong>tree of life</strong> also in the midst of the</td>
</tr>
<tr>
<td>Chorionic villi</td>
<td><strong>garden</strong>, and the <strong>tree of knowledge of good and evil</strong> [bad].</td>
</tr>
<tr>
<td>Umbilical vein</td>
<td>(Genesis 2:8)</td>
</tr>
<tr>
<td>Umbilical arteries</td>
<td></td>
</tr>
</tbody>
</table>

The creation story continues with Genesis 2:15:

And the LORD God [YHWH 'Elōhīm] took the man [earthman], and put him into the garden of Eden [placental] to dress it and to keep it. And the LORD God commanded the man, saying, **Of every tree of the garden thou mayest freely eat**: But of the tree of the knowledge of good and evil [bad], thou shalt not eat of it: for in the day that thou eatest thereof **thou shalt surely die**.

When the placenta is viewed in cross-section as in Figure 9, it is seen to contain innumerable tree-like structures - the chorionic villi. A close inspection reveals that each chorionic villus consists of two miniature "trees" - one venous, one arterial. These "trees" are actually the distal ends of arteries
and veins running from the embryo through the umbilical cord to the maternal blood pools located between the placenta and the endometrium. The embryo feeds by drawing oxygenated, nutrient-rich blood through the umbilical vein from the pools. The embryo eliminates wastes and carbon dioxide (CO₂) through the umbilical arteries into the maternal pools. The arterial and venous trees are isolated to avoid diluting enriched blood with depleted blood.

![Diagram of placenta](image)

**Figure 9. Simplified Villous "Trees" of the Human Placenta Showing Fetal Circulation.** Only a portion of this structure is visible to the naked eye.

Technically speaking, the arteries and veins of the umbilical cord are part of a single circulatory network or "tree." The tips of the smallest
branches of the arterial and venous "trees" are connected by tiny invisible capillaries. However, the appearance to the naked eye is definitely of two "trees," one of which has a single function but a dual trunk (the arteries) which winds about the other trunk (the vein). The placenta is analogous to a miniature garden made up of tiny trees, each of which is a branch of one of two larger trees.

The Lord God's command in Genesis 2:15 is consistent with the biocosmic interpretation of the garden. The embryo is free to, indeed must, eat from all the chorionic villi (trees) of the placenta via the umbilical vein. But, if the embryo should eat from one of the two umbilical arteries, it should surely die by consuming its own waste products. This is an excellent reason for it to be forbidden. Therefore, the vein is good and the dual arteries are bad because the blood is physically corrupted. For "thou mayest freely eat" and "thou shalt surely die," Sacks suggests the more literal translation: "eating, you will eat and dying, you will die." This expresses better the simple difference between the vein which is nourishing and the arteries which are toxic.

Genesis 2:25 reads: "And the man and his wife were both naked, and were not ashamed." Sacks asks: "Why should nakedness be shameful outside the garden and yet not shameful within?" (Sacks, 1980, p. 57) The answer is not so mysterious after all: it is impossible for the foetus to wear clothes. Once outside the womb, human modesty applies.
Severing the Umbilical Cord (Daniel 4:10)

Nebuchadnezzar, King of Babylon, had a dream in which he was instructed to chop down a tree that reached from the earth to the heavens—the World Tree. In the following quote from Daniel 4:10-16, all the elements of a sacred placenta ceremony can be identified. King Nebuchadnezzar speaks of his dream:

Thus were the visions of mine head in my bed; I saw, and behold a tree in the midst of the earth, and the height thereof was great. The tree grew, and was strong, and the height thereof reached unto heaven, and the sight thereof to the end of all the earth: The leaves thereof were fair, and the fruit thereof much, and in it was meat for all: the beasts of the field had shadow under it, and the fowls of the heaven dwelt in the boughs thereof, and all flesh was fed of it. I saw in the visions of my head upon my bed, and, behold, a watcher and an holy one came down from heaven: He cried aloud, and said thus, Hew down the tree, and cut off his branches, shake off his leaves, and scatter his fruit: let the beasts get away from under it, and the fowls from his branches: Nevertheless leave the stump of his roots in the earth, even with a band of iron and brass, in the tender grass of the field; and let it be wet with the dew of heaven, and let his portion be with the beasts in the grass of the earth: Let his heart be changed from man's, and let a beast's heart be given unto him; and let seven times [years] pass over him.

In this passage, Nebuchadnezzar sees a "tree" (umbilical cord and placenta) grow to fill the "heaven" (placenta) and feed the entire "earth" (foetus). Next, Nebuchadnezzar is instructed to chop down the "tree" (cut the umbilical cord), separate the tree from its foliage and fruit (remove the umbilical cord and placenta), and bury the "tree" in the new grass of the field with a band of iron and bronze.

Traditional farmers were and are extremely vulnerable to Nature, e.g., the elements, the timing of the seasons, insects. Against a formidable array of natural calamities, the farmer had two primary defenses—tradition and magic. Tradition, that which worked in the past, was the first line of defense. Magic
was used both to celebrate and ensure tradition. In a typical agricultural rite, the farmer would "plant" the placental "tree" from a newborn in his field to ensure rain, a good harvest, and new seed from the crop for next year. When the placenta is "planted," the umbilical sticks up from the ground forming a miniature 'ashêrôth or sacred pole. Alternatively, the afterbirth may be buried and an actual tree planted on top of it.

The placental tree is associated with food and, therefore, crops and livestock through its function in feeding the foetus. It is associated with the sky in that it creates a false sky inside the womb. It is associated with water, which symbolizes life, in that the amnion contains amniotic fluid which gushes forth when the mother "breaks water" - a sign of birth. It is associated with blood, which is symbolic of growth with a sacrifice, in that it is born in blood and through its function circulates blood to the foetus. It is associated with fertility since it always accompanies birth. It is associated with birth and regeneration since the umbilical arteries embody the form of the serpent, which was thought to generate spontaneously and which periodically sheds its skin. In short, the placental tree is a perfect symbol of birth, growth, and regeneration.

The word "beast's" in Hebrew is chêyva' (חֵיָּה) meaning "from an animal." This word is derived from from châyâ' (חָיָה) or châyâth (חָיָּה) which means "to live" or "to keep alive." Eve or châvyâth (חַבֵּית) the "life-giver" is also related to chêyâh as well as to YHWH (יְהֹוָה). So, "beast's" is related to Eve which is the placenta, which will be established in the discussion of Genesis 2:18.

The Hebrews used the word "heart" at times to indicate "mind." The word for heart is lehab (לב or בְּלָה). However, the placenta is analogous to
the heart in that it participates in blood circulation. And without it, the embryonic heart is useless.

"Let his heart be changed from man’s, and let a beast’s heart be given unto him" is spoken to formally dedicate and abandon the placenta to its new life by recognizing the conversion of function. The change of heart is a change of mind from that of a man (with whom it was associated) to that of a beast. Therefore, the phrase may be an idiomatic way of wishing the placenta long life or independent life.

"Let seven times pass over him" expresses the desire for the fertilizing effect to last until the field lies fallow in the seventh year [Leviticus 25:3]. The Hebrew word for "times" is ḫdḥn (ץְדָחֶה) or eden, which is the placenta. Once again, punning is used to highlight word associations.

Alternatively, the farmer may be scattering the pieces of the placenta in the field ("scatter its fruit") and tying off the umbilical cord to prevent blood loss and infection by attaching a metal ring of iron and brass to the baby end.

In Daniel 4:22, Daniel interprets the dream by equating the "tree" with Nebuchadnezzar himself -"it is you, O king." Indeed it is him. It is his umbilical cord. The dream describes the view of the placenta from the embryo's perspective. The image of the umbilical vessels and placenta was well-known to most adults in the days before modern delivery rooms. People were present at the birth of their own children, and often of their neighbors children. As a matter of course, farmers and shepherds attended the birth of their animals.

Watching or assisting in the birth of a child, especially one's own, can be a strongly emotional experience. The high drama of birth - the breaking of water, the increasing frequency and discomfort of labor contractions, the
disturbing sound of the wife's cries of pain, the sight and smell of blood, the crowning, the infant emerging from the mother's vagina, the cry of new life, the cutting of the flesh of the umbilical cord, the emergence of the afterbirth - causes hormones and emotions to run high. The physical and emotional relief accompanying a successful outcome is cause for proud celebration. With high rates of infant mortality and frequent labor complications, a well mother and a well-formed infant were overwhelming cause for thanksgiving. Therefore, the afterbirth was often disposed of ceremonially or even used in rites of a religious nature to show appreciation to the gods and to ensure future successes. In an age when people delivered their own babies, dressed their own wounds, buried their own dead, and killed and butchered their own meat, handling the afterbirth was not the revolting act it may seem to some today.

The Symbolism of the Umbilical Cord

The umbilical cord was the source of inspiration for both the so-called "Cosmic Tree" or "World Tree" and the "World Axis" (axis mundi) or "Cosmic Pillar." These images appear in most world mythologies in some form.

In some ancient art, the Cosmic Tree is illustrated with its roots in the earth. More often, the Cosmic Tree is depicted as having its roots in heaven. The Secret Doctrine agrees: "In the beginning its roots were generated in Heaven, and grew out of the Rootless Root of all-being" (Cirlot quoting H.P. Blavatsky, 1971, p. 348). Referring to the biocosm, this would equate the placenta with "heaven" and the embryo with the "earth." This is consistent with the biocosmological model in which the "earthman" dwells beneath the heavens.
One purpose of the Cosmic Tree and the World Axis is to keep heaven and earth separate. Magically, whenever the perfect contacts the imperfect, the superior destroys the inferior lest the inferior contaminate the superior. So, the World Axis maintains the cosmic balance.

Regarding the Cosmic Pillar, Cook writes that "the Greeks, like many other peoples, conceived of the earth as a flat disk with a central point called its *omphalos* or 'navel'" (Cook quoting W. H. Roscher in a monograph *Omphalos* (Abh. d. Sachs. Gesellsch. d. Wiss. Phil.-hist. Classe 1913 xxix. 9. 20 ff.) Leipzig 1913 p. 20 ff.I, Vol. I, 1965, p. 167). The Cosmic Pillar, Cosmic Tree, World Tree, and World Axis all symbolize the "center" around which all things mystically revolve. In a similar manner, the foetus is free to rotate on its umbilical tether. For though heaven and earth may not mix, Life itself depends upon the infusion of the mundane with the divine. It is at this center that contact between the upper and lower worlds is permitted. Such a center...
becomes an oracle, like the one at Delphi, where mortals may question the
gods. The umbilical provides the blood-carrying conduit between the foetus
and the mother which carries oxygen, nutrients, and chemical "messages."

A "planted" placenta is the precursor of the institutional omphalos with
its stone "navel" and its resident priest or priestess. However odd the prac-
tice of ceremonially burying portions of the conceptus may seem to moderns,
Cook assures us that "such customs are amazingly frequent in uncivilised or
semi-civilised communities. To quote a typical case:

'among the Maoris, when the navel-string dropped off, the
child was carried to a priest to be solemnly named by him.
But before the ceremony of naming began, the navel-string
was buried in a sacred place and a young sapling was
planted over it. Ever afterwards that tree, as it grew, was
a tohu oranga or sign of life for the child.'

Analogous practices have survived here and there in modern
Greece. . . . and there can be little doubt that from time immemorial
the Greeks have believed in a sympathetic relation existing between

Several passages in the Old and New Covenants predict the transitor-
iness of the cosmos. The following quote from Isaiah 66:22-23 is an example.

For as the new heavens and the new earth, which I will make,
shall remain before me, saith the LORD [YHWH], so shall your seed
and your name remain. And it shall come to pass, that from one new
moon to another, and from one sabbath to another, shall all flesh
come to worship before me, saith the LORD.

Clearly, YHWH will make multiple cosmoi. Usually this has been inter-
preted as indicating the existence of only the two physical cosmoi - the
current one and a future heavenly one - which are of greatest interest to the
living. However, ancient peoples were most concerned in their annual rites
to keep the cosmic wheel turning. It is far more likely that they would antici-
pate worlds without end. Revelation 21:1 echoes this theme:
And I saw a **new heaven and a new earth**: for the **first heaven and the first earth were passed away**, and there was no more sea.

Science has not been able to establish whether there are cycles of successive cosmoi; however, one biocosmos definitely succeeds another over the generations. If the ancient Hebrews were using the biocosmos as a model of the Universe, it would be natural to infer that the physical cosmos would undergo the same cycle of generation, degeneration, and regeneration as the biocosmos.

The Formation of the Placenta (Genesis 2:18-24)

The earthman was created in Genesis 1:27. Now a helper must be created in Genesis 2:18.

And the LORD God [YHWH ʾĒlohim] said: It is not good that the man [earthman] should be alone; I will make him an **help meet for him**.

The word used here for "help" is ʾēzer (אֶזֶר) meaning an "aid" or "help." And, ʾēzer is derived from a primitive root which means "to surround" and therefore "to protect" or "to aid." The phrase translated "meet for him" means "to match him." The Hebrew word k'negdo (כְּנֶגְדוֹ) means either "at his side," "as over against him," or "corresponding to." So, earthman needs a "surrounder" "corresponding to him" "at his side" to "surround," "help," and "protect" him - the placenta. In Genesis 2:21-23, the Lord God addresses the problem.
And the LORD God [YHWH 'Ĕlōhīm] caused a deep sleep to fall upon Adam [earthman] and he slept: and he took one of his ribs, and closed up the flesh instead thereof [closed up the place with flesh instead thereof]: And the rib, which the LORD God had taken from man, made he a woman, and brought her unto the man. And Adam said, This is now bone of my bones, and flesh of my flesh: she shall be called Woman, because she was taken out of Man.

The Hebrew word ṭsālāh (תַּלָּה) means either "rib" or "side." Basār (בָּשָׂר) can be translated as "flesh" or "male pudendum." The word used here for "closed up" is cāgar (כָּגָר) which means "enclose." So, Lord God takes one of earthman’s "sides" and "encloses" the flesh into something resembling the "male pudendum." An umbilical cord bears a resemblance to the male pudendum. The ambiguity of a male pudendum is juxtaposed to the feminine attributes of a male placenta. Now, earthman has a "surrounder" (umbilical cord) "at his side," but it is not yet an "aid" (placenta).

The Hebrew word here translated as "woman" is ḫṣshāḥ meaning either "wife" or "woman." ḫṣshāḥ (חַשָּׁה) is the feminine form of ḫysh (חִשֶּׁה) meaning "husband" or "man." But, ḫṣshāḥ also means "a burnt offering" in a liturgical sense. Therefore, assuming "Woman" is in fact the placenta, then the implication is that the placenta is to be sacrificed on an altar of fire.

The retranslation is summarized and compared to the original translation in the following table:
Modern Terminology
And YHWH Elohim caused a deep sleep to fall upon the earthman and he slept; and he took one of his sides, and enclosed it into an umbilical cord: And from the side, which the LORD God had taken from earthman, made he a placenta, and connected it to the earthman.

Mythical Terminology
And the LORD God caused a deep sleep to fall upon Adam and he slept: and he took one of his ribs, and closed up the flesh instead thereof; And the rib, which the LORD God had taken from man, made he a woman, and brought her unto the man.

In the preceding new translation, the modern terminology obscures the vital connection between the earthman and the burnt offering indicated by the 'îysh-îshshah merismus - they are the two halves of a single whole, the conceptus. In the King James translation, the merismus is preserved by the juxtaposition of man-woman; however, the nature of the whole is lost in allegory. The connection has become not one of flesh, which requires the same genome to be in both halves of the merismus, but of human beings, which have different genomes.

Earthman says: "This is now bone of my bones, and flesh of my flesh: she shall be called Woman, because she was taken out of Man." The relation between a person and their placenta is the closest possible. They are literally of one flesh: each cell contains the same genome. The expression "bone of my bone" refers to the "white" sown by the father, while "flesh of my flesh" signifies the "red" derived from the mother. Therefore, this is a
type of merismus which signifies the body. Therefore, Earthman is saying:
"This is my body."

Therefore shall a man leave his father and his mother, and shall cleave unto his wife: and they shall be one flesh.

Genesis 2:24

Typically, a **mythical** event is related back to the listener or reader with an aetiology. The spiritual implications of this event are that a husband and wife should have the closest relationship possible - like that of an embryo and its placenta. The words for "husband" and "wife" are taken from the *ybh*-*ish*shah* merismus with its implications of a single flesh joined by the male pudendum. It also implies that a wife is absolutely essential to the husband, but that should they be separated, the wife is to be "cut off." The Hebrew word for "divorce" is מִנָּחֵל meaning "a cutting off," which calls to mind cutting the umbilical cord.

Many of the details of divorce among the ancient Hebrews are unknown. In the * Torah*, Deuteronomy 24:1 prescribes a "paper" divorce on minor grounds. Deuteronomy 22:18-29 prescribe death by stoning for a wife committing adultery or for a betrothed having pre-marital sex. However, with all these parallels between the wife and the burnt offering, one might wonder whether sometime in the distant "forgotten" past, wayward women were not subject to death by fire on the altar.

In Genesis 2:18, just prior to the creation of the help meet, the Lord God says: "It is not good that the man [earthman] should be alone." The reason it was not good for man to be alone is that without his placenta he will die.

Later, in Genesis 3, earthman names his "wife" Eve or הָאָדָם (Hadâm) or "life-giver" or "life-giving living-place." The placenta is indeed "life-giver" to the foetus by virtue of its exclusive contacts with the life-giving maternal
blood supply. The placenta is also a "life-giving living-place," i.e., the place where the foetus lives inside the amnion. הַנִּשְׁתָּה is morphologically related to הָנִית meaning "breathe." הֵנִית, in turn, is related to הָנִית - the name יְהֹוָה. הָנִית has one extra character - the yodh (י). In Kabbalistic lore, the yodh symbolizes coition. Perhaps the yodh is Adam's rib from which Eve was made. So, again the merismus appears - יְהֹוָה-חָנִית (יְהֹוָה - הָנִית) - with Eve, the breath of life, being the consort of יְהֹוָה. This confirms Eve as the placenta by alluding to its critical function of breathing for the foetus.

On reading the Torah, many people notice that "Woman" is created somewhat as an afterthought as a companion for "Man" from a spare rib. Now, it is clear that it is the placenta which is formed as earthman's "help meet," and it is not formed from a rib. Since earthman is actually earthperson, both men and women are formed in identical fashion.

The Cause of Parturition (Genesis 3)

In Genesis 3, the serpent is introduced into the garden. He convinces Eve to eat of the tree of knowledge of good and bad. An ancient theory of the actual cause of birth is that the embryo simply runs out of food ("I say that it is the lack of food which leads to birth" by an unknown Hippocratic embryologist. From Section 30 of a fifth century B.C. treatise On Generation. Needham, 1975, p. 36). If the embryo has nothing to eat, it will surely try the forbidden fruit and be expelled from the garden. Since newborns seem interested only in food and sleep, this is a natural assumption. The serpent is, of course, the tree of knowledge of good and bad itself. The woman Eve is the
placenta. Any women who have felt guilty because of their role in the Fall may now clear their consciences. In effect, the bad tree seemed the only possibility when the good tree no longer provided nourishment. This interpretation helps clear up the confusing wording of this chapter.

An aetiology follows in which the snake is cursed to crawl on its belly, woman is cursed to be man's vassal and to bear children in pain, and man is cursed to a life of toil. Genesis 3:21 reads: "Unto Adam also and to his wife did the LORD God make coats of skins, and clothed them." This verse refers humorously to the obvious epithelial coatings with which all humans are blessed; i.e., they were stark naked. Finally, the pair are expelled from the garden in Genesis 3:24.

So he drove out the man; and he placed at the east of the garden of Eden Cherubims, and a flaming sword which turned every way, to keep (guard) the way of the tree of life.

With the theatrics common to oral story-telling, the thought of Adam and Eve being driven from the garden naked must have elicited hearty laughter. The reason for the expulsion is as the LORD God says: "Behold, the man is become as one of us" having breathed the breath of life.

Fire has always fascinated humanity, especially in olden times when a small group of people would huddle around the campfire in the evening. The flames seem to have a life of their own suggesting a living force or a life form. The flames ascending to the sky suggest a winged creature taking flight. And, the flickering tongues of flame suggest the serpent's tongue.

Cherubim is the plural of krúwb (כְרֻב) the meaning of which is uncertain. A cherub is usually taken to be an imaginary figure such as those found in Babylonian temples. The word translated sword is chereb (כֶּרֶךְ) which means "parch" and therefore "kill" or "destroy." It can also refer to a
knife or cutting tool. *Kerith* and *cherub* are obviously morphologically related, and I suggest that a cherub is a creature of the imagination seen in or arising from the flames like the phoenix. Both the cherub and the phoenix are winged creatures. The word translated flaming is *lābat* (לָבַת) meaning "blaze" or "lick with flames."

So, flames are placed to the East of the garden; i.e., after birth, the afterbirth is sacrificed on an altar of fire. The sacrifice is conveyed to heaven by the flames (Leviticus 1-7). The bonfire, "the flaming sword which turns in all directions," parches and consumes the placenta, thus destroying any possibility of re-entering the womb. Thus, the dangerous connection with the divine is magically severed by the serpent's tongue.

The Caduceus

Three analogies for the umbilical vessels are employed in the Book of the Work of Beginning: one of trees in Genesis 2:9, one of rivers in Genesis 2:10, and one of the serpent in Genesis 3. The existence of multiple analogies may indicate multiple origins. All three analogies were popular throughout the Near East as evidenced by their frequent appearances in art.

The most popular image of the umbilical vessels is still known and used in modern times - the caduceus, symbol of modern medicine. It consists of a staff or wand with two serpents intertwined about it. The symbol has been identified in Sumer, in Mesopotamia, and in ancient India. So, the caduceus is among the most ancient symbols of history, perhaps tens of thousands of years old.
Cirlot catalogues the symbolism of the caduceus. The staff is a regal weapon symbolizing support and punishment. The twin serpents symbolize wisdom. "Good and evil" is a merismus signifying "all things," since everything can be considered either good or bad. The tree of knowledge of good and evil denotes knowledge of the difference between right and wrong, knowledge of all things, and therefore the age of maturity and, hopefully, wisdom. Therefore, "knowledge of good and evil" is a euphemism for coming of age. The disc atop the staff represents the disc-shaped placenta.

The staff is often surmounted by wings. Since birds fly freely between the earthly and heavenly spheres, wings came to symbolize the ability to travel between the physical and spiritual worlds and to ferry messages from the gods to the earth. Birds were also associated with the divine by reason of the egg which symbolized the biocosm. Therefore, wings symbolize soaring imagination, freedom of thought, and spirituality. The wings were added to the caduceus to symbolize the function of the umbilical vessels in carrying blood to and from heaven. The blood, incidentally, carries chemical "messages" in both directions.

Symbolic of the primal mystery of human existence - birth - the umbilical vessels were an appropriate symbol for the practice of medicine, especially in the times when medicine and magic were as intertwined as the
serpents of the caduceus itself. The shaman bridged the profane and the divine.

Besides the umbilical cord, there is another image familiar to many who live close to nature - intertwined male snakes fighting during mating season. One example is the Welsh adder. Snakes were thought to generate spontaneously (Prescott, Harley, Klein, 1990, p. 9). And, because snakes shed their skins as they grow, the serpent became a symbol of renewal and rebirth. So, the image of the umbilical vessels reinforced the image of intertwined serpents to create a potent symbol associated with the cycles of birth and rebirth.

Serpents were often used to symbolize instinctual forces. Modern psychoanalysts view the serpent as a symbol of the instinctual forces of the unconscious. The wings represent a spiritual plane of existence or, in modern parlance, a higher plane of consciousness. Therefore, the caduceus represents the base instincts which form the foundation of the higher spiritual functions. In this sense, the caduceus is a symbol of spirituality as an emergent property of the physical body.

In ancient Greece, the caduceus was the symbol of Hermes, psychopomp and messenger of the Greek gods. Hermes, Mercury in Roman mythology, was also the god of mystical knowledge and rebirth. Like the serpent, he mediated between two worlds. He guided men to the Underworld and, rarely, back. Since the placenta is physically connected to and follows the infant into the world, it may have been thought of as a companion or guide in the journey from the Underworld to this world.

Æsculapius was the Greek god of medicine. The name Æsculapius (Ἀσκληπιός) denotes a snake. His symbol was his knotty staff wrapped by
a lone serpent. The symbol was inspired by abnormal umbilical vessels which contain only one artery or by the external view of the umbilical cord which can appear to be a "tree" spiralled by a single "serpent." This image, perhaps reinforced by that of tree-climbing snakes, made the staff of Aesculapius an effective symbol of medicine to the ancient Greeks. This symbol is similar to that of the World Tree in Figure 10.

The Placenta as a Model for Divine Communication

The Near East has many natural heights or hills surmounted by ageless trees. When the ancient Semite wanted to speak to God, he went to the top of just such a "high place" as the Bible calls them. There are two primary reasons for this. Firstly, a high place is nearer God's abode, the divine firmament. But more importantly, "these wooded eminences, standing out conspicuously from the broad expanse of brown fields and grey-blue olive-yards" (Frazer, 1927, p. 339) resemble the chorionic villi of the placenta. It is through them that the foetus "communicates" with "God."
A hilltop sanctuary often contained a stone pillar (ομφαλός) symbolizing the World Navel or a wooden pillar (אָשְׁרֶת) symbolizing the "World Tree," which upholds the firmament and connects the mundane with the divine. An אָשְׁרֶת was a sacred pole or wooden pillar which served the same purpose as the placenta buried by Nebuchadnezzar: it was an earthly site where the divine could be contacted through a biocosmic umbilical cord. In pagan temples, the placental tree was often represented as a wooden pillar. Cook referred to it as a "sky-pillar" (Cook, Vol. II, 1965, p. 45). It represented the Cosmic Tree, World Tree, World Axis, or Cosmic Pillar of other cultures. The frequent kratophany of lightening strikes at such sites could only strengthen this allegory.

The favorite Canaanite אָשְׁרֶים were located on the "high places" (II Chronicles 17:6), though every village with an appropriately old, large, or oddly-shaped tree might have its own. Hosea 3:13 described how "they sac-
rifice upon the tops of the mountains, and burn incense upon the hills, under oaks and poplars and elms, because the shadow thereof is good.” In Canaanite temples, the sacred pole placed the priest standing between earth and heaven at the World Center, i.e., the center of the biocosm. Typical rites are thought to have involved “magically inducing life in the fields, in the herds or in the family” (The Zondervan Pictorial Encyclopedia of the Bible, Vol. 5, 1976, p. 811). As temple worship became an organized affair with a hereditary priesthood, temples took over the individual and local rites introduced by the common people. The temple cultus is a later abstraction of the earlier farmer’s or shepherd’s rites. In the case of Israel, political unity brought unity of worship as all sacred ceremonies was concentrated at the temple in Jerusalem.

The Torah has many harsh words for the pagan practices of its neighbors as in the following two quotations:

Ye shall utterly destroy all the places, wherein the nations which ye shall possess served their gods, upon the high mountains, and upon the hills, and under every green tree: And ye shall overthrow their altars, and break their pillars, and burn their groves [Ashérim] with fire; and ye shall hew down the graven images of their gods, and destroy the names of them out of that place.

Deuteronomy 12:2-3

A voice was heard upon the high places, weeping and supplications of the children of Israel: for they have perverted their way, and they have forgotten the LORD their God. Return, ye backsliding children, and I will heal your backslidings. Behold, we come unto thee; for thou art the LORD our God. Truly in vain is salvation hoped for from the hills, and from the multitude of mountains: truly in the LORD our God is the salvation of Israel.

Jeremiah 3:21-23

In Exodus 34:13, the Hebrews are enjoined to cut down the Canaanite Ashérim.

In Deuteronomy 12:3, they are instructed to burn them. As is commonly done in religious and schismatic battles, the Hebrews accused their religious enemies of orgiastic sexual intercourse, religious prostitution, and of child sacrifice.
Also in thy skirts is found the **blood** of the souls of the poor innocents: I have not found it by secret search, but upon all these [אָוָק oak].

Jeremiah 2:34

(The Roman Empire accused the Christians of ritual blood and child sacrifice, and throughout the Middle Ages, the Hebrews themselves were accused by Christians of child sacrifice in their religious rites.) The word translated "these" in Jeremiah 2:34 is the word for "oak." While child sacrifice is certainly a possibility, a more likely bloody sacrifice is the placenta. Needham notes "the probability that embryos (aborted or of other origin) were used in antiquity as substitutes for human sacrifice" (Needham, 1975, p. 22, footnote 1).

In the context of the placental hills, smearing blood on the trunks of trees served to make the earthly copy of the divine microcosm even more realistic and, therefore, effective. If sexual intercourse was performed in the sanctuaries, the purpose would have been to infuse the human experience with divine energy, i.e., to make the coition sacred. Divine forces were invoked through the sympathetic re-enactment of the divine act of biocosmic creation.

The Old Covenant associates 'ashêřâh with the Canaanite sky-god Ba'al. The parents of Ba'al were the Canaanite father-god 'El and his consort and sister 'Ashêrı́ah. She was also goddess of the sea (yam, ים), the sea of chaos. The *King James Bible* translates 'ashêrı́ah as "groves," while the *New Jerusalem Bible* translates it "sacred pole" and associates it with Astarte, the Greek name for 'Ashêrı́ah (אָשֶׁרֶת), which is the feminine form of 'ashôr (אשֹׁר) or "cedar." There are cedars living today in the Near East which approach two thousand years of age. Some cedars are 120 feet tall and have a 40 foot girth. The merismus 'Ashôr-'Ashêrı́ah as god and consort is typical of
Near Eastern religions. The merismus indicates that each is half of a whole and that one is masculine and one feminine.

YHWH, who reputedly had no consort, would have been unique in the region because, as every good preformationist knew, it takes two to create a biocosmos. In 1975, inscribed storage jars were discovered by Ze'ev Meshel at Kuntille Ajrud in the Sinai desert. The inscriptions mention YHWH and his consort 'Asherah.

Other types of holy tree are mentioned in the Torah such as the palm tree (תֵּירָן) and the lone terebinth (תֵּירָן), Pistacia terebinthus. But, tree words (תֵּירָן, יָרוֹן, יָרָן) are most frequently, and perhaps occasionally erroneously, translated as "oak." And, not all of them were anathema. Even Abraham built an altar for YHWH under the sacred oak of Moreh near Shechem, because YHWH renewed their covenant there. As previously mentioned, one of the Hebrew words translated "God" is elohim (יהוה) which is the dual termination for masculine and feminine plural (הָאָוַט) of "oak."

So, the merismus 'El-'Elōi or 'Elōhīm should represent the god and his consort. But, the orthodox interpretation is that 'Elōi (יהוה) is the personal possessive suffix yodh added to 'El (יְהוָה) rendered "my God." Were this so, there would be no need of the letter נ. On the other hand, without resorting to Aramaic or obscure references, 'Elōi is the straight-forward personal possessive of the name of the sacred oak (יְהוָה). In certain contexts, the dual termination appears to denote the plural, rather than pairs, which would make 'Elōhīm mean simply "oaks."

According Frazer, the terebinth prospers in the warm, dry climate of Moab in the South, while the oak likes the cooler, rainier weather of Galilee and Gilead and in the North. The most common groves are evergreen oak
(Quercus pseudo-coccifera). But, the red cedar is symbolic of blood and was, therefore, a popular sacred tree. Interestingly, אֱלֹהִים can also be pronounced 'Allah' which bears a notable phonetic similarity to Allah, an Aramaic name for God.
DISCUSSION

Support for the interpretation of the cosmos of Genesis as the biocosmos comes from the first Gnostic - Simon Magus. He revealed the occluded messages of Judeo-Christian mythology and was honored with a sizeable number of pages in *The Refutation of all Heresies* by Hippolytus including the following quote on *Edem*:

How then, he [Simon Magus] says, and in what manner, does God form man? In Paradise; for so it seems to him. **Grant Paradise, he says, to be the womb**; and that this is true [assumption] the Scripture will teach, when it utters the words, "I am He who forms thee in thy mother's womb [Jeremiah 1:5]." For this also he wishes to have been written so (Jeremiah 1:5: Then the word of the LORD came unto me, saying, Before I formed thee in the belly I knew thee; and before thou camest forth out of the womb I sanctified thee, and I ordained thee a prophet unto the nations. Then said I, Ah, Lord GOD! behold, I cannot speak: for I am a child.). Moses, he says, resorting to allegory, had declared Paradise to be the womb, if we ought to rely on his statement. If, however, God forms man in his mother's womb - that is, in Paradise - as I have affirmed, let Paradise be the womb, and *Edem* [sic] the after-birth, "a river flowing forth from Edem, for the purpose of irrigating Paradise [Genesis 2:10]," [meaning by this] the navel. **This navel, he says, is separated into four principles; for on either side of the navel are situated two arteries, channels of spirit, and two veins, channels of blood.** But when, he says, the umbilical vessels proceed forth from Edem, that is, the caul in which the foetus is enveloped grows into the [foetus] that is being formed in the vicinity of the epigastrium, - [now] all in common denominate this a navel, - these two veins through which the blood flows, and is conveyed from Edem, the after-birth, to what are styled the gates of the liver; [these veins, I say,] nourish the foetus. But the arteries which we have spoken of as being channels of spirit, embrace the bladder on both sides, around the pelvis, and connect it with the great artery, called the aorta, in the vicinity of the dorsal ridge. And in this way the spirit, making its way through the ventricles to the heart, produces a movement of the foetus. For the infant that was formed in Paradise neither receives nourishment through the mouth, nor breathes through the nostrils: for as it lay in the midst of moisture, at its feet was death, if it attempted to breathe; for it would [thus] have been drawn away from moisture, and perished [accordingly] (Hippolytus, *The Refutation of all Heresies*).
Heresies. Book VI Chapter IX, 1868, p. 204).

Simon was obviously an astute observer of human anatomy as well as a reader of the Torah.

A third century B.C. account agrees with Simon's description: Herophilus of Chalcedon "gave a correct description of the umbilical cord, except that he assigned to it four vessels instead of three, carrying blood and breath to the embryo" (Needham, 1975, p. 62). These descriptions differ from the one given in the current work by mentioning two veins. Inside the foetus, the single vein does, in fact, split into two branches - the portal sinus and the ductus venosus. Surely, Simon Magus, archenemy of Peter, was not merely a "magician" but a physician.

Alchemy has long been considered "magic" and, at the same time, the ancestor of chemistry. The following quote from the Abtala Jurain (1732) seems to hint at support for the biocosmic interpretation:

By this you will see clearly the secrets of God, that are at present hidden from you as from a child. You will understand what Moses has written concerning the creation; you will see what manner of body Adam and Eve had before and after the Fall, what the serpent was, what the tree [was], and what manner of fruits they ate; where and what Paradise is, and in what bodies the righteous shall be resurrected; not in this body that we have received from Adam, but in that which we attain through the Holy Ghost, namely in such a body as our Savior brought from Heaven (Campbell, Creative Mythology, 1976, p. 269).

There is ample evidence in the mythological record to support the hypothesis that certain ancient cosmogonic myths should be reclassified as descriptive medical science, i.e., biomyths. I have drawn on Egyptian, Greek, and Semitic texts, all of which document the fascination and even worship of the afterbirth. The short quotations from Gnostic and alchemical texts also support the hypothesis.
But, the most important proof given is the detailed analysis of the Book of Genesis. According to the hypothetical reinterpretation, the cosmos of the Torah is actually a biocosmos or conceptus. The garden of Eden is the placenta. Eden is the uterus. Adam is an embryo or foetus. And, Eve is the placenta. If Genesis were a newly-discovered document with no theological interpretation, and if the non-mythological meaning had been realized, then the interpretation given here would not be difficult to accept.

The hypothesis has a great deal of explanatory power, making sense of passages which otherwise require a metaphysical or mythological interpretation. And, the hypothesis can be employed to account for the origin of some of the most ancient symbols of humanity, e.g., the caduceus, the Tree of Life, the World Egg.

If the hypothesis is valid, then the doctrine of Biblical creation must be modified. God (with a small g) is not the sole creator of the cosmos, but "god" is a co-creator of the biocosmos along with the ovum and the mother. The mechanism of creation is articulation, not of the voice, but of genes. The World was not created from nothing. A biocosm is created from existing elements, and phenomenological reality exists prior to creation, though at what point memory and consciousness begin is still unknown. Not only Adam, but all humans are created in the image of "god." The creation of Eve refers not to the creation of Woman from Adam's rib but to the fact that the foetus and the placenta are both formed from the fertilized ovum. Therefore, Woman is of the same, not an inferior, order of creation as Man. The reason why the conceptus is expelled from the uterus remains unknown.

The success of the hypothesis in interpreting Genesis suggests other lines of research. Other possible sources of biomyth shall be investigated.
including the Sumerian *Enuma elish*, Gilgamesh, the Song of the Lord (*Bhagavad-Gita*), the Hermetic Literature, the Book of Exodus, the *Kabbalah*, the Gospels, the Dead Sea Scrolls, and the alchemical texts.

Karl Popper writes that "all science is cosmology" (Popper, 1968, p. 15). Perhaps, the converse is also true - all cosmology is science.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>abortifacient</td>
<td>a drug which provokes menstruation, thereby terminating pregnancy.</td>
</tr>
<tr>
<td>abortion</td>
<td>the birth of an embryo or foetus prior to viability; miscarriage. [L. abortio miscarriage]</td>
</tr>
<tr>
<td>achondroplasia</td>
<td>an abnormality of the conversion of cartilage to bone which affects primarily the epiphyses of long bone, resulting in dwarfism. [Gk. a not, without, chondros cartilage, plasis a molding]</td>
</tr>
<tr>
<td>acormic</td>
<td>a malformation of the foetus in which most of the trunk is missing. [Gk. a not or without, kormos tree trunk]</td>
</tr>
<tr>
<td>animalculism</td>
<td>a preformationist theory in which the sperm contains the homunculus.</td>
</tr>
<tr>
<td>biocosm</td>
<td>Refer to biocosmos.</td>
</tr>
<tr>
<td>biocosmos</td>
<td>a living thing, a self-contained, biological world; the egg in amphibians, birds, fish, and insects; the seed in plants; the conceptus in animals. [Gk. bios life, kosmos world]</td>
</tr>
<tr>
<td>biomyth</td>
<td>a scientific narrative which was later interpreted literally and became &quot;myth&quot;, especially dealing with developmental or reproductive biology as creation myths; a biological allegory. [Gk. bios life, muthas]</td>
</tr>
<tr>
<td>caul</td>
<td>the amnion forming the bag of waters, and sometimes delivered unruptured; a piece of the amnion capping the head of the newborn. [Gaelic caul a veil]</td>
</tr>
<tr>
<td>conceptus</td>
<td>refers to the embryo and its membranes; the products of conception including the placenta. [L.]</td>
</tr>
<tr>
<td>contraceptive</td>
<td>an agent or procedure designed to prevent conception.</td>
</tr>
<tr>
<td>cosmogony</td>
<td>dealing with the origin of the universe. [Gk. kosmos world, gonia, begetting]</td>
</tr>
<tr>
<td>cosmology</td>
<td>the science of the universe. [Gk. kosmos world]</td>
</tr>
</tbody>
</table>
cyclopia  a congenital defect in which the two orbits of the eye merge, forming a single cavity containing a single eye. [Gk. kyklos circle, ops eye]
cyclops  an individual with cyclopia.
disprosopus  conjoined twins with near total fusion of the bodies but with a duplication of the face or a portion thereof. [Gk. di two, prosopa face]
dual  a form of Hebrew noun denoting pairs or sometimes the plural. The dual termination for both masculine and feminine nouns is ð.

elohim  homunculus; hence fertilized ovum, genome. [Heb. אלים gods or oaks]

embryo  the blastocyst following development of the embryonic disk until the end of the eighth week. [L.]

endometrium  a mucous membrane forming the inner lining of the uterus. [Gk. μέτρα uterus]

epigastrium  the pit of the stomach; the upper central area of the abdomen. [Gk. ἐπιγαστρία]

exomphalos  a protrusion or herniation of the umbilicus. [Gk. er out, omphalos umbilicus]

firmament  amniotic sac; apparent arc of the sky. [L. firmamentum]

foetus  fetus; term for the embryo after the eighth week of development. [L. fetus offspring]

genome  the entire genetic complement of a chromosome set.

golem  "formless", "rolled-up thing"; a foetus of 0-1.5 months; a creature or human brought to life artificially by invoking holy names of God [Kabbalah] or by genetic engineering; homunculus. [Heb. גolem formless, wrapped-up thing]

hierophany  a manifestation of the sacred. [Gk. hieros sacred]

homunculus  a map of the human body projected onto another object; a man created via alchemy (coined by Paracelsus); a little man; golem. [L. homo wise, culus -forming]

hydrocephalic  an excessive accumulation of fluid which dilates the cerebral ventricles and thins the brain causing separation of the cranial bones. [Gk. hydro water, kephale head]
kratophany  a manifestation of divine power and, therefore, the sacred.
menses  the periodical hemorrhage from the mucous membrane of
the uterus following ovulation. [L. pl. mensis month]
merismus  an expression composed of paired antonyms which taken
together designate a whole, e.g., "And there was evening
and there was morning, one day"; Jung's syzygy.
nidus  a place in which seeds or spores develop.
oncogeny  the origin and development of an individual. [Gk. on om-
being, genesis birth]
oivism  a preformationist theory in which the ovum contains the
homunculus. [L. ovum egg]
ovum  a germ cell of the female; when fertilized, the ovum is cap-
able of becoming a new individual. [L. egg]
parabiosis  the joining of two individuals. [Gk. para- beside, biosis
mode of life]
parturition  childbirth; bringing forth offspring. [L. parturitio]
placenta  the temporary organ which connects embryo and mother in
the womb of viviparous species; Eden. [Gk. plakous flat
cake]
preformationism  the theory that either the sperm or the ovum holds within
itself a homunculus.
sperm  the male generative fluid containing the germ cells. [Gk.
sperma seed]
symphodial  having a single foot. [Gk. pous podos foot]
theophany  a visible manifestation of god. [Gk. theos god]
zygote  a fertilized ovum. [Gk. zygotos yoked together]
REFERENCES

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