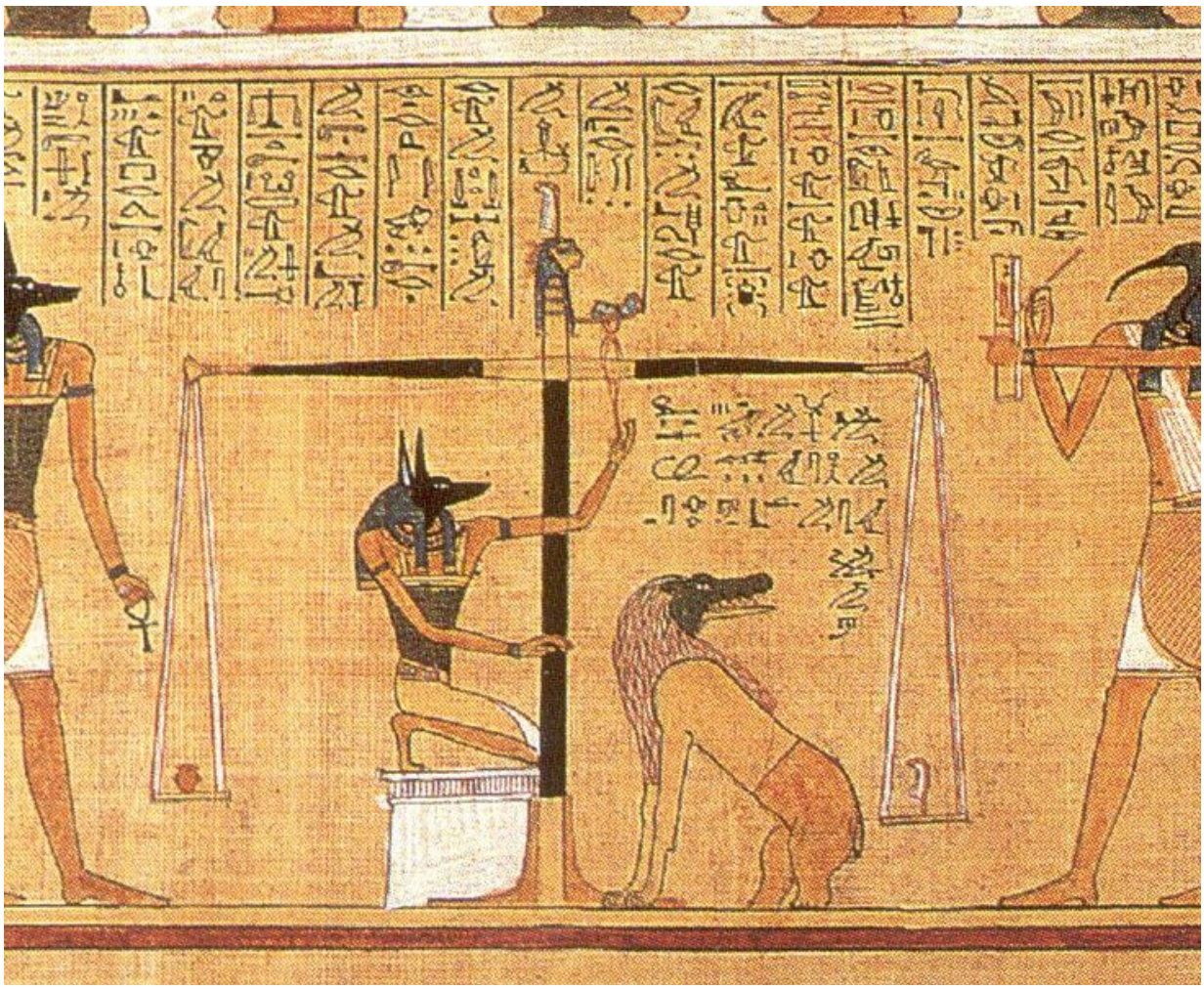
The Egyptian Book of the Dead, Nuclear Physics and the Substratum



By John Frederick Sweeney

Abstract

The Egyptian Book of the Dead, a collection of coffin texts, has long been thought by Egyptologists to describe the journey of the soul in the afterlife, or the Am Duat. In fact, the so – called Book of the Dead describes the invisible Substratum, the “black hole” form of matter to which all matter returns, and from which all matter arises. The hieroglyphics of the Papyrus of Ani, for example, do not describe the journey of the soul, but the creation of the atom. This paper gives evidence for the very Ancient Egyptians as having knowledge of a higher mathematics than our own civilization, including the Exceptional Lie Algebras E6 and G2, the Octonions and Sedenions, as well as the Substratum and the nuclear processes that occur there. The Osiris myth represents a general re – telling of the nuclear processes which occur within the Substratum, the invisible “black hole” form of matter.

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Cover Illustration This detail scene, from the Papyrus of Hunefer (ca. 1275 BCE), shows the scribe Hunefer's heart being weighed on the scale of Maat against the feather of truth, by the jackal-headed Anubis. The ibis-headed Thoth, scribe of the gods, records the result. If his heart equals exactly the weight of the feather, Hunefer is allowed to pass into the afterlife. If not, he is eaten by the waiting chimeric devouring creature Ammit composed of the deadly crocodile, lion, and hippopotamus. Vignettes such as these were a common illustration in Egyptian books of the dead.

Introduction

The Egyptian Book of the Dead has been called many things in the brief history of Egyptology, which began with Napoleon's Invasion of Egypt in 1799.

In the same way, translators of ancient Egyptian hieroglyphics, such as Sir Wallace Budge, merely took such texts like the Coffin Texts literally, and with their limited knowledge of Egyptian culture and of mathematics, translated them in the standard meaning which academic accepts today. Although late 19th Century mathematics had discovered the Octonions and Sedenions by that time, they had already been dismissed as useless by leading mathematicians, and were so disregarded up until around 1990 or so.

Sir Roger Penrose, for example, dismissed the Octonions as useless for physics.

Robert de Marrais made a statement in his 2002 essay about 42 Assessors as to how a series of numbers associated with the multiplication table for the Sedenions was related to the 42 Assessors of the Egyptian Book of the Dead. For that matter, elsewhere De Marrais stated that the Tibetan Book of the Dead contains similar content. De Marrais went even further to describe an Osiris Partition within the Sedenion multiplication table.

Then there are the 42 negative confessions to the god Maat (see Appendix I). These were written to accompany the 42 Assessors, although the confessions did not always conform to the proper Assessor, Budge states. Whether this was intentional is a question worthy of research in tandem with exploration of Sedenions.

This paper posits the existence of Early Global Civilization, an advanced civilization which enjoyed a far higher level of technology than our present civilization, before the last major Ice Age, some 14,000 years ago. This is the civilization which built the Giza Pyramid Complex, and this civilization co – existed with the civilization of people who committed the Vedas to Sanskrit. In fact, the Vedas had been an oral tradition but the disastrous period of the Ice Age made it necessary for the Brahmans to commit their spoken tradition to paper.

From that perspective, the fragile papyri we have inherited today perhaps dates from a more recent civilization of 6000 to 2000 BC, when the ancient knowledge had already been lost. While the basic outlines of the knowledge was retained, the content had probably been lost, although it remains possible that the hieroglyphics of the Coffin Texts and papyri contain coded language which obscures the scientific knowledge within.

Budge wrote that the text themselves were based on very ancient knowledge, so it does remain possible that the hieroglyphic texts contain coded language, a technique which is true of the Hindu tradition. It may prove impossible to discern whether the scribes who copied the coffin texts understood the hidden meanings of the scrolls, if they do indeed exist.

In this way, the 42 Assessors were retained, along with the 42 confessions, the 7 Gates of Osiris and the 7 Assistants of Osiris. Western civilization discovered higher algebras around 1850 but had all but dismissed them by 1900 as useless. While Octonions made a brief comeback in the 1990's, Sedonions have never been given much regard, with the exception of de Marrais and a few others.

That is to say that our present civilization is so backwards and infantile in its scientific outlook, compared with the ancient Egyptians and the ancient Hindu civilizations (pre Ice Age) that we are ignorant of what constitutes advanced mathematical physics. The main reason why we have not deciphered the Am Duat until the publication of this paper is our ignorance of higher mathematics – the Octonions, Sedenions, G2 and E6.

Frank "Tony" Smith published extensive sections about ancient Egypt on his encyclopedic website, especially regarding the Temple of Man at Karnak and its relationship to the Exceptional Lie Algebra, E6, and Tarot Cards. The author of this article has a forthcoming article regarding E6 and human psychology. Thus we may see a growing body of evidence that indicates that these assumptions about ancient Egypt are true, and that the standard academic view of Egypt is off by a wide margin.

A book on Vedic Physics states that the Sanskrit word for hell has been misinterpreted and mistranslated for millennia, and that was actually meant was the Substratum. This paper makes the case that very Ancient Egypt had the same concept and understanding of the Substratum and nuclear physics, and that the Osiris legend and stories related to the Am Duat in fact describe the life cycle of nuclear particles. "Heaven" is in fact our present reality, whereas the invisible Substratum is what we today interpret as the Underworld.

As humanity has devolved in goodness, morality and intelligence, so has the need for repressive systems grown. Thus, what was once the Substratum in advanced ancient societies has devolved into a horrible Hell, designed to frighten and subdue the poor and ignorant masses, whether that might have been in India, China, any nations which fell under Buddhist or Catholic repression, etc. Theologians developed the notion of Hell to frighten and control the masses, thus manipulating the concept of the Substratum for their own earthly purposes.

The time has come to recover these concepts from the oppressors, and to explain their true meaning. The Substratum does have a moral function, in fact an inescapable moral function. Instead of an old white man with a beard

who lives upon clouds and watches every human action, the Substratum records all that we do. There is no need for some messianic old man in the sky. Yet over the millennia, religion has misconstrued the basic function of the Substratum, for the purpose of controlling other humans.

The following passage from Wikipedia explains that Hell did not exist during the early Vedic period. The reader may find that the concept of Hell developed later. This paper argues that a similar process occurred in ancient Egypt.

Early Vedic religion does not have a concept of Hell. Ṛg-veda mentions three realms, bhūr (the earth), svar (the sky) and bhuvas or antarikṣa (the middle area, i.e. air or atmosphere)). In later Hindu literature, especially the law books and Puranas, more realms are mentioned, including a realm similar to Hell, called naraka (in Devanāgarī: नरक). Yama as first born human (together with his twin sister Yamī) in virtue of precedence becomes ruler of men and a judge on their departure. Originally he resides in Heaven, but later, especially medieval traditions, mention his court in naraka.

In the law-books (smṛtis and dharma-sūtras, like the Manu-smṛti) naraka is a place of punishment for sins. It is a lower spiritual plane (called naraka-loka) where the spirit is judged, or partial fruits of karma affected in a next life. In Mahabharata there is a mention of the Pandavas and the Kauravas both going to Heaven.

At first Yudhisthir goes to heaven where he sees Duryodhana enjoying in heaven, Indra tells him Duryodhana is in heaven as he did his Kshatriya duties, then he shows Yudhisthir hell where it appears his brothers are but later its revealed it was a test for Yudhisthir and his brothers and Kauravas both are in heaven and both live happily in divine abode of gods. Hells are described in various Puranas and other scriptures. Garuda Purana gives a detailed account of Hell, its features and enlists amount of punishment for most of the crimes like a modern day penal code.

It is believed that people who commit sins go to Hell and have to go through punishments in accordance with the sins they committed. The god Yamarāja, who is the god of death, presides over Hell. Detailed accounts of all the sins committed by an individual are kept by Chitragupta, who is the record keeper in Yama's court.

Chitragupta reads out the sins committed and Yama orders appropriate punishments to be given to individuals. These punishments include dipping in boiling oil, burning in fire, torture using various weapons, etc. in various Hells. Individuals who finish their quota of the punishments are reborn in accordance with their balance of karma.

All created beings are imperfect and thus have at least one sin to their record; but if one has generally led a pious life, one ascends

to svarga, a temporary realm of enjoinment similar to Paradise, after a brief period of expiation in Hell and before the next reincarnation according to the law of karma.

Wikipedia on the Book of the Dead

The ***Book of the Dead*** is an ancient Egyptian funerary text, used from the beginning of the New Kingdom (around 1550 BCE) to around 50 BCE.[1] The original Egyptian name for the text, transliterated *rw nw prt m hrw*[2] is translated as "Book of Coming Forth by Day".[3] Another translation would be "Book of emerging forth into the Light". The text consists of a number of magic spells intended to assist a dead person's journey through the *Duat*, or underworld, and into the afterlife.

The *Book of the Dead* was part of a tradition of funerary texts which includes the earlier Pyramid Texts and Coffin Texts, which were painted onto objects, not papyrus. Some of the spells included were drawn from these older works and date to the 3rd millennium BCE. Other spells were composed later in Egyptian history, dating to the Third Intermediate Period (11th to 7th centuries BCE).

A number of the spells which made up the Book continued to be inscribed on tomb walls and sarcophagi, as had always been the spells from which they originated. The *Book of the Dead* was placed in the coffin or burial chamber of the deceased.

There was no single or canonical *Book of the Dead*. The surviving papyri contain a varying selection of religious and magical texts and vary considerably in their illustration. Some people seem to have commissioned their own copies of the *Book of the Dead*, perhaps choosing the spells they thought most vital in their own progression to the afterlife. The *Book of the Dead* was most commonly written in hieroglyphic or hieratic script on a papyrus scroll, and often illustrated with vignettes depicting the deceased and their journey into the afterlife.

The *Book of the Dead* developed from a tradition of funerary manuscripts dating back to the Egyptian Old Kingdom. The first funerary texts were the Pyramid Texts, first used in the Pyramid of King Unas of the 5th dynasty, around 2400 BCE.[4] These texts were written on the walls of the burial chambers within pyramids, and were exclusively for the use of the Pharaoh (and, from the 6th dynasty, the Queen).

The Pyramid Texts were written in an unusual hieroglyphic style; many of the hieroglyphs representing humans or animals were left incomplete or drawn mutilated, most likely to prevent them causing any harm to the dead pharaoh.[5] The purpose of the Pyramid Texts was to help the dead King take his place amongst the gods, in particular to reunite him with his divine father Ra; at this period the

afterlife was seen as being in the sky, rather than the underworld described in the *Book of the Dead*.[5] Towards the end of the Old Kingdom, the Pyramid Texts ceased to be an exclusively royal privilege, and were adopted by regional governors and other high-ranking officials.

In the Middle Kingdom, a new funerary text emerged, the Coffin Texts. The Coffin Texts used a newer version of the language, new spells, and included illustrations for the first time. The Coffin Texts were most commonly written on the inner surfaces of coffins, though they are occasionally found on tomb walls or on papyri.[5] The Coffin Texts were available to wealthy private individuals, vastly increasing the number of people who could expect to participate in the afterlife; a process which has been described as the "democratization of the afterlife".[6]

The *Book of the Dead* first developed in Thebes towards the beginning of the Second Intermediate Period, around 1700 BCE. The earliest known occurrence of the spells included in the *Book of the Dead* is from the coffin of Queen Mentuhotep, of the 13th dynasty, where the new spells were included amongst older texts known from the Pyramid Texts and Coffin Texts. Some of the spells introduced at this time claim an older provenance; for instance the rubric to spell 30B states that it was discovered by the Prince Hordjedef in the reign of King Menkaure, many hundreds of years before it is attested in the archaeological record.[7]

By the 19th dynasty, the *Book of the Dead* had become widespread not only for members of the royal family, but courtiers and other officials as well. At this stage, the spells were typically inscribed on linen shrouds wrapped around the dead, though occasionally they are found written on coffins or on papyrus.[8]

The New Kingdom saw the *Book of the Dead* develop and spread further. The famous Spell 125, the 'Weighing of the Heart', is first known from the reign of Hatshepsut and Tuthmose III, c.1475 BCE. From this period onward the *Book of the Dead* was typically written on a papyrus scroll, and the text illustrated with vignettes. During the 19th dynasty in particular, the vignettes tended to be lavish, sometimes at the expense of the surrounding text.[9]

In the Third Intermediate Period, the *Book of the Dead* started to appear in hieratic script, as well as in the traditional hieroglyphics. The hieratic scrolls were a cheaper version, lacking illustration apart from a single vignette at the beginning, and were produced on smaller papyri. At the same time, many burials used additional funerary texts, for instance the *Amduat*.[10]

During the 25th and 26th dynasties, the *Book of the Dead* was updated, revised and standardised. Spells were consistently ordered and numbered for the first time. This standardised version is known today as the 'Saite recension', after the Saite (26th) dynasty.

In the Late period and Ptolemaic period, the *Book of the Dead* remained based on the Saite recension, though increasingly abbreviated towards the end of the Ptolemaic period. New funerary texts appeared, including the *Book of Breathing* and *Book of Traversing Eternity*. The last use of the *Book of the Dead* was in the 1st century BCE, though some artistic motifs drawn from it were still in use in Roman times.[11]

The *Book of the Dead* is made up of a number of individual texts and their accompanying illustrations. Most sub-texts begin with the word *ro*, which can mean mouth, speech, a chapter of a book, spell, utterance, or incantation. This ambiguity reflects the similarity in Egyptian thought between ritual speech and magical power.[13] In the context of the *Book of the Dead*, it is typically translated as either "chapter" or "spell". In this article, the word "spell" is used.

At present, some 192 spells are known,[14] though no single manuscript contains them all. They served a range of purposes. Some are intended to give the deceased mystical knowledge in the afterlife, or perhaps to identify them with the gods: for instance, Spell 17, an obscure and lengthy description of the god Atum.[15]

Others are incantations to ensure the different elements of the dead person's being were preserved and reunited, and to give the deceased control over the world around him. Still others protect the deceased from various hostile forces, or guide him through the underworld past various obstacles. Famously, two spells deal with the judgement of the deceased in the Weighing of the Heart ritual.

Such spells as 26–30, and sometimes spells 6 and 126 relate to the heart, and were inscribed on scarabs.[16]

The texts and images of the *Book of the Dead* were magical as well as religious. Magic was as legitimate an activity as praying to the gods, even when the magic was aimed at controlling the gods themselves.[17] Indeed, there was little distinction for the Ancient Egyptians between magical and religious practice.[18]

The concept of magic (*heka*) was intimately linked with the spoken and written word. The act of speaking a ritual formula was an act of creation;[19] there is a sense in which action and speech were one and the same thing.[18] The magical power of words extended to the written word. Hieroglyphic script was held to have been invented by the god

Thoth, and the hieroglyphs themselves were powerful. Written words conveyed the full force of a spell.[19]

This was even true when the text was abbreviated or omitted, as often occurred in later *Book of the Dead* scrolls, particularly if the accompanying images were present.[20] The Egyptians believed that knowing the name of something gave power over it; thus, the *Book of the Dead* equips its owner with the mystical names of many of the entities he would encounter in the afterlife, giving him power of them.[21]

The spells of the *Book of the Dead* made use of several magical techniques which can be seen in other areas of Egyptian life. A number of spells are for magical amulets, which would protect the deceased from harm. In addition to being represented on a *Book of the Dead* papyrus, these spells appeared on amulets wound into the wrappings of a mummy.[17] Everyday magic made use of amulets in huge numbers. Other items in direct contact with the body in the tomb, such as headrests, were considered to have amuletic value.[22] A number of spells refer to Egyptian beliefs about the magical healing power of saliva.[17]

The mystical Spell 17, from the Papyrus of Ani. The vignette at the top illustrates, from left to right, the god Heh as a representation of the Sea; a gateway to the realm of Osiris; the Eye of Horus; the celestial cow Mehet-Weret; and a human head rising from a coffin, guarded by the four Sons of Horus.[12]

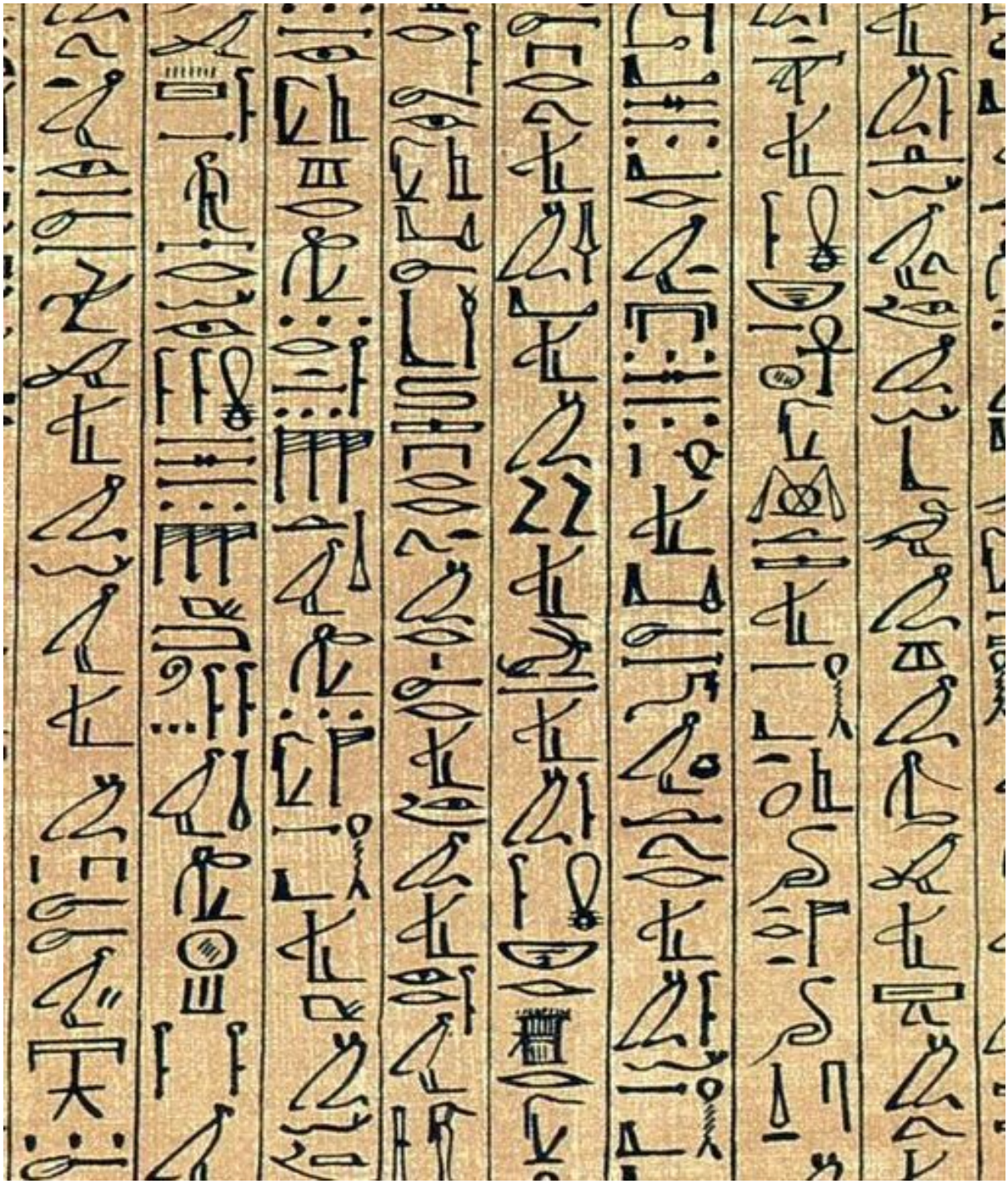
The Papyrus of Ani

Thoth's declaration to the Ennead, based on the weighing of the heart of the scribe Ani. Ten of the 42 Assessors may be seen in the top panels.

The The *Papyrus of Ani* is a papyrus manuscript with cursive hieroglyphs and color illustrations created circa 1250 BCE, in the 19th dynasty of the New Kingdom of ancient Egypt. Egyptians compiled an individualized book for certain people upon their death, called the *Book of Going Forth by Day*, more commonly known as the *Book of the Dead*, typically containing declarations and spells to help the deceased in their afterlife. The *Papyrus of Ani* is the manuscript compiled for the Theban scribe Ani.

It was purchased in 1888 by Sir E. A. Wallis Budge for the collection of the British Museum where it remains today. Before shipping the manuscript to England, Budge cut the seventy-eight foot scroll into thirty-seven sheets of nearly equal size, damaging the scroll's integrity at a time when technology had not yet allowed the pieces to be put back together.

Divisions	Sections	Title
01	16	Hymns
02	36	Praises of Khert-Neter
03	08	Seven Arits
04	10	Pylons of the House of Osiris
05	05	Speeches
06	22	Hail Thoths
07	32	Chapter Collection 1
08	20	Homages
09	19	Miscellaneous (Hymns, Hails, Homage, Chapter, Rubric)
10	18	Chapter Collection 2
11	20	Funeral Chamber Texts



The Concept of the Underworld in Ancient Egypt

With the rise of the cult of Osiris during the Middle Kingdom the "democratization of religion" offered to even his humblest followers the prospect of eternal life, with moral fitness becoming the dominant factor in determining a person's suitability. At death a person faced judgment by a tribunal of forty-two divine judges.

If they had led a life in conformance with the precepts of the Goddess Maat, who represented truth and right living, the person was welcomed into the Two Fields. If found guilty the person was thrown to a "devourer" and didn't share in eternal life.[9] The person taken by the devourer is subject first to terrifying punishment and then annihilated. These depictions of punishment may have influenced medieval perceptions of the inferno in hell via early Christian and Coptic texts.[10]

Purification for those considered justified appears in the descriptions of "Flame Island", where humans experience the triumph over evil and rebirth. For the damned complete destruction into a state of non-being awaits. but there is no suggestion of eternal torture; the weighing of the heart in Egyptian Mythology can lead to annihilation.[11][12] The Tale of Khaemwese describes the torment of a rich man, who lacked charity, when he dies and compares it to the blessed state of a poor man who has died.[13] Divine pardon at judgement always remained a central concern for the Ancient Egyptians.[14]

Modern understanding of Egyptian notions of hell relies on six ancient texts:[15]

1. *The Book of Two Ways* (*Book of the Ways of Rosetau*)
2. *The Book of Amduat* (*Book of the Hidden Room*, *Book of That Which Is in the Underworld*)
3. *The Book of Gates*
4. *The Book of the Dead* (*Book of Going Forth by Day*)
5. *The Book of the Earth*
6. *The Book of Caverns*

Octonions

Two 'gate spells'. On the top register, Ani and his wife face the 'seven gates of the House of Osiris'. Below, they encounter ten of the 21 'mysterious portals of the House of Osiris in the Field of Reeds'. All are guarded by unpleasant protectors.[38]

The Egyptian Book of the Dead makes reference to Octonions in two ways: as shown above, the House of Osiris had seven gates. Other sources indicate that Osiris had seven assistants. Both of these numbers fit the number of Octonions in their multiplication table, the Fano Plane, which is an equilateral triangle, each angle of sixty degrees.

The lower register in the papyrus shown above indicates 21 portals of the House of Osiris in the Field of Reeds. 21 + 21 = 42, the number of Assessors, which is important in the study of Sedenions. We may see as well that

7 x 3 = 21

And these equations have to do with triplets of Octonions matching Sedenions. See de Marrais “42 Assessors” for specific details. The author is writing a paper which matches de Marrais’ understanding of the Octonions, Sedenions and Trigintaduonions with Egyptian mythology which will be forthcoming.

Sedenions

The late Robert de Marrais first suggested the relationships between the 42 Assessors and the Sedenions in 2002. Moreover, he made reference to the “Osiris Partition” in the same paper.

De Marrais enjoyed a phenomenal genius, and was perhaps the first human in modern times to understand Sedenions, as well as how they interact with Octonions and higher math forms such as the Trigintaduonions.

The question remaining is: was he merely kidding? Tongue in cheek? Or was he serious? In his style of writing, de Marrais would make many literary allusions, not bothering to substantiate many of them. Either he assumed the reader already knew of what he wrote, or would do the research to find out what he was talking about.

For example, most of his readers probably don’t’ know the difference between a jib and a spinnaker: one needs to grow up around sailboats and spend a considerable amount of time on the water to know these terms. De Marrais simply assumed his reader would understand them, since he did.

Since de Marrais died in 2011, we have no means of knowing what he truly meant by his allusions to the 42 Assessors and to Osiris, except by de-constructing his essays on the subject. The following appears in the abstract of his paper:

A break -down of table equivalence among the half a trillion multiplication schemes the Sedenions allow is found; the 168 elements of PSL(2,7), defining the finite projective triangle on which the Octonions' 480 equivalent multiplication tables are frequently deployed, are shown to give the exact count of primitive unit zero -divisors in the Sedenions. (Composite zero -divisors, comprising all points of certain hyperplanes of up to 4 dimensions, are determined.) The 168 are arranged in point-set quartets along the 42 Assessors (pairs of diagonals in planes spanned by pure imaginaries, each of which zero -divides only o ne such diagonal of any partner Assessor)

The paper contains this text:

“ The Sedenions’ primitive zero -divisors will be referred to by a special name, “Assessors ,” and the systems of these which mutually zero -divide each other (unlike the mutually annihilating pairs familiar from Clifford algebra[4]) will be called “Co-Assessor trios.” And while technically there are

four “normed unit” zero -divisors on the extended X that is an Assessor, in fact plus or minus differences along one or the other diagonal have no effect on the basic dynamics. I prefer, therefore, to think of each Assessor’s “X” as made of two infinite (S0 -normed) lines, one an orthographic slash, the other a backslash, all points of which are zero -divisors with respect to one or the other such line of a Co -Assessor: ‘/’ + ‘\’ = ‘X’.”

To substantiate his metaphor, de Marrais offers the following:

“ The name of the entity we’re focused on herein is suggested by the “42 Assessors” of the Egyptian Book of the Dead, who sit in two rows of 21 along opposite walls of the Hall of Judgement.[5] During the soul’s so-called “Negative Confession” (and our focus is almost solely on units which are roots of negative unity), they ask embarrassing questions while the heart of the deceased is weighed in a pan-balance and the soul -eating Devourer of the Unjustified watches. The three senses of Zero implicit in the italicized words (and the need for two pans to achieve a balanced measurement), added to the coincidence of the count, made the name seem an appropriate mnemonic.”

Citation No. 5 refers to:

5. E. A. Wallis Budge, The Gods of the Egyptians, vol. I, Dover, New York, 1969 (first published 1904), 418-421. One could just as well speak of the *Tibetan* Book of the Dead’s “42 Peaceful Buddhas.”

Anyone who has more than passing interest in Egyptology knows Budge’s name, and anyone with more than passing interest knows that Budge is often inherently unreliable. This begs the question: was de Marrais merely interested in a handy mnemonic to describe the Sedenions or did he believe in a deeper relationship?

It is highly unlikely that de Marrais knew of the Substratum. The present author is the first person to make the connection between the Substratum of Vedic Physics and the Am Duat or Underworld of Egyptian religion. At best, we may conclude that de Marrais provided a heuristic hint, for others to follow up, and some, such as Frank “Tony” Smith have done so. When additional evidence is amounted, support for de Marrais’s point begins to form a major intellectual breakthrough for Egyptology and mathematical physics.
We can begin to see from de Marrais’ statements that, where the Coffin Texts and the papyri discuss destruction of souls, with a guillotine – like contraption depicted in one scene, the actual act referred to is the negation of a number by Zero or otherwise. By the time the coffin texts had been written, the understanding of their authors had devolved to where they no longer understood the mathematics and physics behind the cover story: they simply believed the cover story.

With the evidence about the Octonions now present, and de Marrais’ explanation of the 42 Assessors and the Osiris Partition, we can now move on to the final bit of evidence which further links the Octonions and the

Sedenions: the Exceptional Lie Algebra G2.

The Exceptional Lie Algebra G2

In the lower depths of the Osiris Temple in Abdyos, Egypt, one may find a Flower of Life inscribed on the wall. While it is almost impossible to determine who inscribed the flower there, there is good reason to believe that the flower pre-dates the arrival of the Pythagoreans who worshipped and studied there, before bringing their knowledge of advanced Egyptian math and science back home to Greece.

Not many will make the connection between the Flower of Life and the Exceptional Lie Algebra G2, since most depictions of G2 and its root structure display the elements in a different fashion. The author happened to find one paper which gives the roots of G2 as a Flower of Life, and thus the author made this connection.

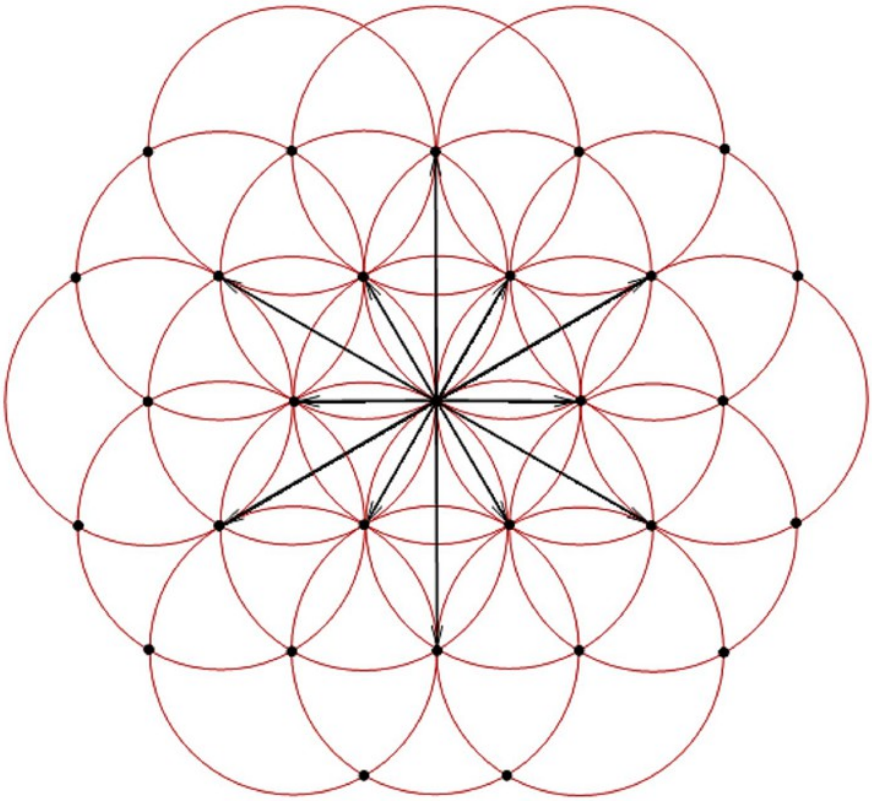
Now, why would the ancient Egyptians inscribe the Flower of Life / G2 on the lower wall of the Temple of Osiris? This must have been more than coincidence, for now we now that the ancient Egyptians understood Octonions and Sedenions, and the Exceptional Lie Algebra G2 happens to link with both in a most critical fashion.

The author hypothesizes here that the Osiris legend in fact represents a mythical explanation for the development of nuclear particles, either implicitly or explicitly. It would be worth researching the hieroglyphs along with Egyptian number systems for parallels between ancient Egyptian writings and ancient Vedic writings, where mathematical concepts and equations are inscribed in coded Sanskrit.

For this to occur, some researcher knowledgeable of hieroglyphics and the culture of very Ancient Egypt would have to accept the concepts of Vedic Physics such as the Substratum, the Moolakaprithiki, the Vrithi and the Purusha, to adequately conduct the research. Professional Egyptologists probably will not do this, although such endeavors may save them decades of work and win them Nobel prizes.

Such innovations in a given field of study remain for outsiders – the author may give it a try once he has time to master hieroglyphics.

Flower of Life



(only root system in which the angle $\pi/6$ appears between two roots)

The root system for the Exceptional Lie Algebra G2, which is the only root system in which the angle Pi / 6 appears between two roots. This may be so since the Moolaprkrithi is divided into six sectors. In a previous paper published on Vixtra, the author wrote:

In this paper we examine the root system of G2, which holds the key to the transition from the Octonions to the Sedenions, and from binary to ternary math, and involving three - forms. The author further notes relationships between the Hopf Fibration and the Poincare Dodecahedral Space, as the momentum of recent papers appears to indicate close connections between these constructions.

With regard to 12, 28, G2 and the 42 Assessors of the Sedenions, the ancient Egyptians knew of these relationships, since they depicted the 12 astrological houses, 42 Assessors in the scenes showing the weighing of the soul of Osiris. In addition, an Osiris Temple in Egypt holds a Flower of Life painted on its subterranean wall, and the Flower of Life is merely a depiction of the root system of G2. The Flower of Life is well - known to students of sacred geometry and has appeared in crop circles.

From the G2 Root System the paper transitions to Sedenions, which are closely related to the number 28. Tony Smith's essay explores many of these relationships, and so has been included in its entirety. Then, the author adds another piece of evidence regarding the importance of 28 in the A*n* Lie Algebra. In passing we note the availability of G2 to three - forms or triplets, which again will prove important in the connection between Octonions and Sedenions.

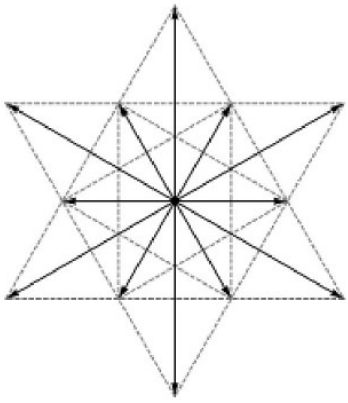


Figure 7: The root system G_2.

The G2 root system forms a Star of David, which originated in Egypt.

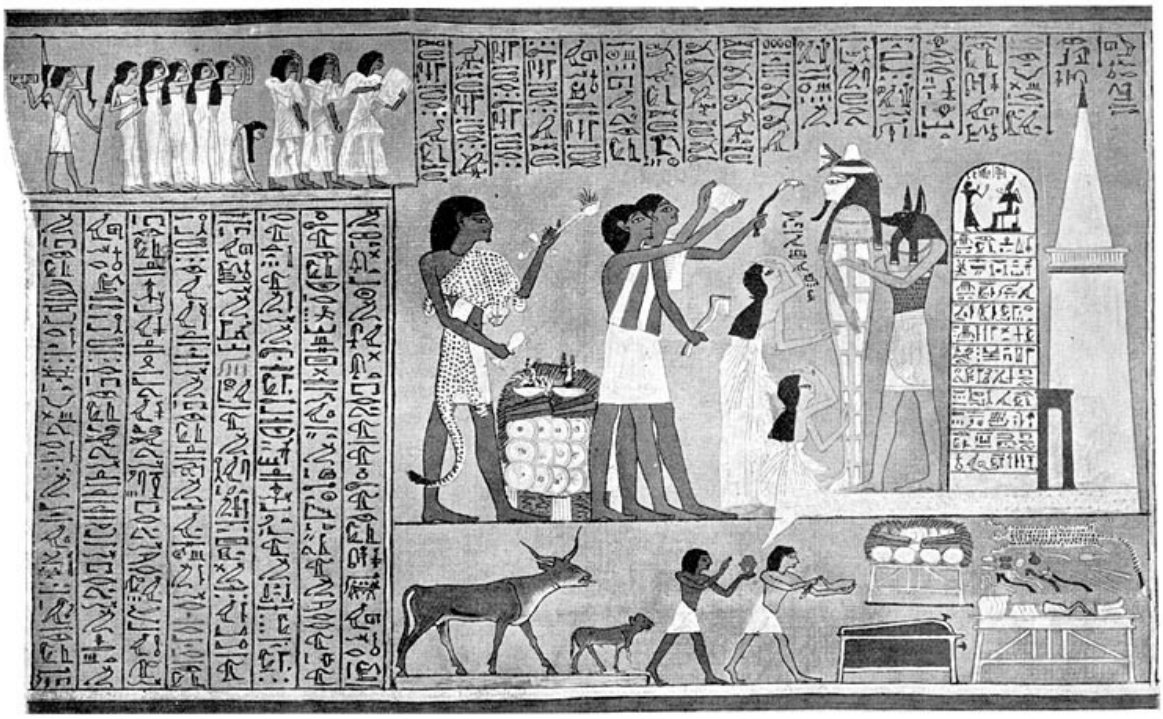
Finally, if $\theta = \pi/6$, the root system consists of 12 vectors. They correspond to the vertices of two regular hexagons that have different sizes and are rotated away from each other by an angle $\pi/6$ (see Fig. 7). The ratio of lengths of these vectors is $\sqrt{3}$. This is an "exceptional" root system and is called G_2.

There are no other root systems of rank 2, because in two dimensions the angle θ determines the root system completely.

The Flower of Life appears in the root system of G2 and by no accident: a Flower of Life was painted on the wall of an Osiris temple in Egypt, and Osiris is associated with the 42 Assessors as his soul is weighed in the underworld.

This form of the root system of G2 consists of two Fano planes, or the Octonion multiplication system. Jews have been carrying around this symbol for some seven thousand years, and presumably left Egypt with this symbol somewhere around 5000 BC. The interior of the Star of David forms a hexagon, the shape of the purusha in Vedic Nuclear Physics.

Conclusion



This paper has given strong evidence that the very ancient (pre - Ice Age, circa 14,000 BC) Egyptian civilization understood advanced mathematics and enjoyed a higher technology than our own. This evidence includes the Seven Gates / Assistants of Osiris, the repeated references to 42, a key number for the Sedenions, as well as the Exceptional Lie Algebra G2, which plays a decisive role in linking the Octonions, Twisted Octonions, Sedenions and Trigantaduonions.

Moreover, this paper draws the hypothesis that the Osiris legend describes the life cycle of matter, from recombination in the Substratum to re-birth as new matter, while the Amduat describes the Substratum and the processes which occur within the Substratum. A future paper by this author will articulate the details of this hypothesis.

At the same time, our civilization has rejected Octonions (Sir Rodger Penrose) and Sedenions while having barely explored Trigintaduonions and beyond. The only person who seems to have understood these numbers, Robert de Marrais, died in 2011 and no other seems to have taken his place, while few presumably have actually read and understood his work.
The Osiris legend lends credence to the idea that the Egyptians knew about Octonions and Sedenions, as Wikipedia states:

“ The dismembered parts could be said to number as many as forty-two, each piece being equated with one of the forty-two nomes, or provinces, in

Egypt.[32]
The source for this is ^ Pinch 2004, p. 79.

In general, the Osiris myth describes the death of matter and then its re-birth, after a term spent in the Underworld or Amduat. For this reason Osiris became associated with the annual rebirth of crops. In this sense, the Osiris myth may simply comprise a legend or story that explains in general terms a specific scientific process, and eventually the deeper meaning became lost to humanity. The pattern of the devolution of the Egyptian empire and culture provides a perfect example for this process of human decay.

"Osiris is deeply involved with natural cycles of death and renewal, such as the annual growth of crops, that parallel his own resurrection.[83]"

In other ways, the ceremonies and sequences of the Amduat or Underworld tend to coincide with similar processes which have been encoded in Vedic literature:

The Ceremony of "Opening of the Mouth" being performed on the mummy of the royal scribe Hunefer at the door of the tomb.

[From Brit. Mus., Pap. No. 9901.]

The author hypothesizes here that the Ceremony of the Opening of the Mouth refers to the procedures needed to de-stabilize the purusha in order to open up the enormous reservoirs of free energy available within. That professionals in either Egyptology or in Physics will pursue such a lead remains highly doubtful, for western scientists fail to understand Vedic Physics, and the concept of the Substratum, and thus would reject such suggestions.

The Substratum retains all matter, whatever emanates from the Substratum must return in the form of decayed photons. There is a mathematical equation to determine the life of the photon in Vedic Physics. Even human actions are recorded in the Substratum, and this is where the concept of karma fits in. Since the Substratum records all actions, then the karmic effect arises from the consequences of human activity. If the consequences are positive, then the human will receive positive benefits from his or her actions, and vice versa. Thus it may have been a simple matter for later generations of Egyptians to modify the original spiritual Osirian science into a moralistic religious tale.
The evidence given in this essay: the references to the seven Octonions, the Sedenions, the Exceptional Lie Algebra G2 and its root system, the Flower of Life, with G2 as the only root system with Pi /6 between two roots, relating to the Moolakaprithiki and the Purusha, all indicate a knowledge of the same ancient science secretly coded within Vedic literature.

That is to say that the very ancient Egyptian civilization, that of 14,000 BC or so, prior to the last major Ice Age, probably enjoyed a higher level of mathematics and science than enjoyed by our present civilization, which put further development on hold during the late 19th Century, apparently to mollify the interests of wealthy capitalists, such as those who silenced and destroyed Nikola Tesla. As our civilization draws to a close, we will be remembered, if at all, as those who valued material wealth over knowledge or spiritual pursuit,

and thus perhaps sealed our own collective fate.

Plato's Timeaus describes an ancient war fought by Athens, a war which was ancient even during the times of Plato. Vedic and later Hindu literature describes nuclear warfare and flying vehicles known as vimanas. While mainstream scholars enjoy downplaying such sources, the growing body of evidence seems to indicate highly advanced Vedic and Egyptian civilizations in the period before the last major Ice Age.

Vedic literature encodes a full - blown scientific theory of advanced physics and mathematics, which one author estimates would take some 6,000 to 10,000 years for a group of humans to develop. The possibility exists that Egyptian hieroglyphics contain secret codes which contain the same or a similar science, which our civilization grasps only a small part, with no comprehensive view of the entire scale of the science. The Osiris myth merely serves as a loose cover to obscure the occult science hidden within the hieroglyphs.

In 2013, we still cannot replicate the stone - cutting that built the pyramid complex at Giza (or in Cuzco, Peru), even with laser technology. Our best guess is that the Great Pyramid was built by successive armies of slaves, but this is a mere hypothesis. A better, yet unexplored hypothesis is that those who built the Great Pyramid enjoyed a higher form of technology which did not require armies of slaves; a Latvian immigrant built the Coral Castle in Coral Gables, Florida, alone and at night, with technology he learned by studying ancient Egypt.

Since we cannot depend on Egyptologists nor physicists to explore the language of ancient Egypt to uncover and to decode this advanced science, this author will make the attempt in future papers to be published on Vixra.

Bibliography

[The 42 Assessors and the Box-Kites they fly: Diagonal Axis ...]

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Page 1 The **42 Assessors** and the Box-Kites they fly: Diagonal Axis-Pair Systems of Zero-Divisors in the Sedenions' 16 Dimensions Robert P. C. **de Marrais**
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[Sedenions, Lissajous Figures and the Exceptional Lie Algebra G2]

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G2 Root System and 28 Nakshastra

Appendix I

The **Osiris myth** is the most elaborate and influential story in ancient Egyptian mythology. It concerns the murder of the god Osiris, a primeval king of Egypt, and its consequences. Osiris' murderer, his brother Set, usurps his throne. Meanwhile, Osiris' wife Isis restores her husband's body, allowing him to posthumously conceive a son with her.

The remainder of the story focuses on Horus, the product of Isis and Osiris' union, who is first a vulnerable child protected by his mother and then becomes Set's rival for the throne. Their often violent conflict ends with Horus' triumph, which restores order to Egypt after Set's unrighteous reign and completes the process of Osiris' resurrection.

The myth, with its complex symbolism, is integral to the Egyptian conceptions of kingship and succession, conflict between order and disorder and, especially, death and the afterlife. It expresses the essential character of each of the four deities at its center, and many elements of their worship in ancient Egyptian religion were derived from the myth.

The Osiris myth reached its basic form in or before the 24th century BC. Many of its elements originated in religious ideas, but the conflict between Horus and Set may have been partly inspired by a regional struggle in Egypt's early history or prehistory. Scholars have tried to discern the exact nature of the events that gave rise to the story, but they have reached no definitive conclusions.

Parts of the myth appear in a wide variety of Egyptian texts, from funerary texts and magical spells to short stories. The story is, therefore, more detailed and more cohesive than any other ancient Egyptian myth. Yet no Egyptian source gives a full account of the myth, and the sources vary widely in their versions of events.

Greekand Roman writings, particularly *De Iside et Osiride* by Plutarch, provide more information but may not always accurately reflect Egyptian beliefs. Through these writings, the Osiris myth persisted after knowledge of most ancient Egyptian beliefs was lost, and it is still well known today.

The myth of Osiris was very important in ancient Egyptian religion and was popular among ordinary people.[1] One reason for this popularity is the myth's primary religious meaning, which implies that any dead person can reach a pleasant afterlife.[2] Another reason is that the characters and their emotions are more reminiscent of the lives of real people than those in most Egyptian myths, making the story more appealing to the general populace.[3]

In particular, the myth conveys a "strong sense of family loyalty and devotion", as the Egyptologist J. Gwyn Griffiths put it, in the relationships between Osiris, Isis, and Horus.[4] With this widespread appeal, the myth appears in more ancient texts than any other myth and in an exceptionally broad range of Egyptian literary styles.[1] These sources provide an unusual amount of detail.[2]

Ancient Egyptian myths are fragmentary and vague, because the religious metaphors contained within the myths were more important than coherent narration. The Osiris myth is fragmentary to some extent, and rich in symbolism. In comparison with other myths, it bears a greater resemblance to a cohesive story.[5]

The *Pyramid Texts* in the Pyramid of Teti

The earliest mentions of the Osiris myth are in the *Pyramid Texts*, the first Egyptian funerary texts, which appeared on the walls of burial chambers in pyramids at the end of the Fifth Dynasty, during the 24th century BC. These texts, made up of disparate spells or "utterances", contain ideas that are presumed to date from still earlier times.[6]

The texts are concerned with the afterlife of the king buried in the pyramid, so they frequently refer to the Osiris myth, which is deeply involved with kingship and the afterlife.[7] Major elements of the story, such as the death and restoration of Osiris and the strife between Horus and Set, appear in the utterances of the *Pyramid Texts*.[8]

The same elements from the myth that appear in the *Pyramid Texts* recur in funerary texts written in later times, such as the *Coffin Texts* from the Middle Kingdom (c. 2055–1650 BC) and the *Book of the Dead* from the New Kingdom(c. 1550–1070 BC). Most of these writings were made for the general populace, so the association made in these texts, between Osiris and the dead, is no longer restricted to royalty.[9]

The most complete ancient Egyptian account of the myth is the Great Hymn to Osiris, an inscription from the Eighteenth Dynasty (c. 1550–1292 BC) that gives the general outline of the entire story but includes little detail.[10] Another important source is the Memphite Theology, a religious narrative that includes

an account of Osiris' death as well as the resolution of the dispute between Horus and Set.

This narrative associates the kingship that Osiris and Horus represent with Ptah, the creator deity of Memphis.[11] The text was long thought to date back to the Old Kingdom (c. 2686–2181 BC) and was treated as a source for information about the early stages in the development of the myth. Since the 1970s, however, Egyptologists have concluded that the text dates from the New Kingdom at the earliest.[12]

Texts related to Osirian rituals come from the walls of Egyptian temples that date from the New Kingdom to the Ptolemaic era of 323–30 BC. Such ritual texts are another major source of information about the myth.[13]

Magical healing spells, which were used by Egyptians of all classes, are the source for an important portion of the myth, in which Horus is poisoned or otherwise sickened, and Isis heals him. The spells identify a sick person with Horus so that he or she can benefit from the goddess' efforts. The spells are known from papyrus copies, which serve as instructions for healing rituals, and from a specialized type of inscribed stone stela called a *cippus*.

People seeking healing poured water over these cippi, an act that was believed to imbue the water with the healing power contained in the text, and then drank the water in hope of curing their ailments. The theme of an endangered child protected by magic appears on inscribed ritual wands from the Middle Kingdom, which were made centuries before the more detailed healing spells that specifically connect this theme with the Osiris myth.[14]

Episodes from the myth were recorded in writings intended as entertainment. Prominent among these texts is "The Contendings of Horus and Set", a humorous retelling of several episodes of the struggle between the two deities, which dates to the Twentieth Dynasty (c. 1190–1070 BC).[15] It vividly characterizes the deities involved; as the Egyptologist Donald B. Redford says,

"Horus appears as a physically weak but clever Puck-like figure, Seth [Set] as a strong-man buffoon of limited intelligence, Re-Horakhty [Ra] as a prejudiced, sulky judge, and Osiris as an articulate curmudgeon with an acid tongue."[16]

Despite its atypical nature, "Contendings" includes many of the oldest episodes in the divine conflict, and many events appear in the same order as in much later accounts, suggesting that a traditional sequence of events was forming at the time that the story was written.[17]

Ancient Greek and Roman writers, who described Egyptian religion late in its history, recorded much of the Osiris myth. Herodotus, in the 5th century BC, mentioned parts of the myth in his description of Egypt in *The Histories*, and four centuries later, Diodorus Siculus provided a summary of the myth in his *Bibliotheca historica*.[18]

In the early 2nd century AD,[19] Plutarch wrote the most complete ancient account of the myth in *De Iside et Osiride*, an analysis of Egyptian religious beliefs.[20] Plutarch's account of the myth is the version that modern popular

writings most frequently retell.[21] The writings of these classical authors may give a distorted view of Egyptian beliefs.[20]

For instance, *De Iside et Osiride* includes many interpretations of Egyptian belief that are influenced by various Greek philosophies, and its account of the myth contains portions with no known parallel in Egyptian tradition.

Griffiths concluded that several elements of this account were taken from Greek mythology, and that the work as a whole was not based directly on Egyptian sources.[22] His colleague, John Baines, on the other hand, says that temples may have kept written accounts of myths, which later were lost, and that Plutarch could have drawn on such sources to write his narrative.[23]

Death and resurrection of Osiris

At the start of the story, Osiris rules Egypt, having inherited the kingship from his ancestors in a lineage stretching back to the creator of the world, Ra orAtum. His queen is Isis, who, along with Osiris and his murderer Set, is one of the children of the earth god Geb and the sky goddess Nut. Little information about the reign of Osiris appears in Egyptian sources; the focus is on his death and the events that follow.[24]

Osiris is connected with life-giving power, righteous kingship, and the rule of *maat*, the ideal natural order whose maintenance was a fundamental goal in ancient Egyptian culture.[25] Set is closely associated with violence and chaos. Therefore, the slaying of Osiris symbolizes the struggle between order and disorder, and the disruption of life by death.[26]

Some versions of the myth provide Set's motive for killing Osiris. According to a spell in the *Pyramid Texts*, Set is taking revenge for a kick Osiris gave him,[27] whereas in a Late Period text, Set's grievance is that Osiris had sex with Nephthys, who is Set's consort and the fourth child of Geb and Nut.[2]

The murder itself is frequently alluded to, but never clearly described. The Egyptians believed that written words had the power to affect reality, so they avoided writing directly about profoundly negative events such as Osiris' death.[28]

Sometimes they denied his death altogether, even though the bulk of the traditions about him make it clear that he has been murdered.[29] In some cases the texts suggest that Set takes the form of a wild animal, such as a crocodile or bull, to slay Osiris; in others they imply that Osiris' corpse is thrown in the water or that he is drowned.

This latter tradition is the origin of the Egyptian belief that people who had drowned in the Nile were sacred.[30] Even the identity of the victim is changeable in texts, as it is sometimes the god Haroeris, an elder form of Horus, who is murdered by Set and then avenged by another form of Horus, who is Haroeris' son by Isis.[31]

By the end of the New Kingdom, a tradition had developed that Set had cut Osiris' body into pieces and scattered them across Egypt. Cult centers of Osiris all over the country claimed that the corpse, or particular pieces of it, were found near them. The dismembered parts could be said to number as

many as forty-two, each piece being equated with one of the forty-two nomes, or provinces, in Egypt.[32] Thus, the god of kingship becomes the embodiment of his kingdom.[30]

Isis, in the form of a bird, copulates with the deceased Osiris. At either side are Horus, although he is as yet unborn, and Isis in human form.[33]

Osiris' death is followed either by an interregnum or by a period in which Set assumes the kingship. Meanwhile, Isis searches for her husband's body with the aid of Nephthys.[34] When searching for or mourning Osiris, the two goddesses are often likened to falcons or kites,[35] possibly because kites travel far in search of carrion,[36]because the Egyptians associated their plaintive calls with cries of grief, or because of the goddesses' connection with Horus, who is often represented as a falcon.[35]

In the New Kingdom, when Osiris' death and renewal came to be associated with the annual flooding of the Nile that fertilized Egypt, the waters of the Nile were equated with Isis' tears of mourning,[37] or with Osiris' bodily fluids.[38] Osiris thus represented the life-giving divine power that was present in the river's water and in the plants that grew after the flood.[39]

The goddesses find and restore Osiris' body, often with the help of other deities, including Thoth, a deity credited with great magical and healing powers, and Anubis, the god of embalming and funerary rites. Their efforts are the mythological basis for Egyptian embalming practices, which, by mummifying the body, sought to prevent and reverse the decay that follows death. This part of the story is often extended with episodes in which Set or his followers try to damage the corpse, and Isis and her allies must protect it.

Once Osiris is made whole, Isis conceives his son and rightful heir, Horus.[34] One ambiguous spell in the Coffin Texts may indicate that Isis is impregnated by a flash of lightning,[40] while in other sources, Isis, still in bird form, fans breath and life into Osiris' body with her wings and copulates with

him.[34] Osiris' revival is apparently not permanent, and after this point in the story he is only mentioned as the ruler of the Duat, the distant and mysterious realm of the dead. Although he lives on only in the Duat, he and the kingship he stands for will, in a sense, be reborn in his son.[41]

The cohesive account by Plutarch, which deals mainly with this portion of the myth, differs in many respects from the known Egyptian sources. Set—whom Plutarch, using Greek names for many of the Egyptian deities, refers to as "Typhon"—conspires against Osiris with seventy-three other people. Set has an elaborate chest made to fit Osiris' exact measurements and then, at a banquet, declares that he will give the chest as a gift to whoever fits inside it.

The guests, in turn, lie inside the coffin, but none fit inside except Osiris. When he lies down in the chest, Set and his accomplices slam the cover shut, seal it, and throw it into the Nile. With Osiris' corpse inside, the chest floats out into the sea, arriving at the city of Byblos, where a tree grows around it. The king of Byblos has the tree cut down and made into a pillar for his palace, still with the chest inside. Isis must remove the chest from within the tree in order to retrieve her husband's body.

Having taken the chest, she leaves the tree in Byblos, where it becomes an object of worship for the locals. This episode, which is not known from Egyptian sources, gives an etiological explanation for a cult of Isis and Osiris that existed in Byblos in Plutarch's time and possibly as early as the New Kingdom.[42]

Plutarch states that Set steals and dismembers the corpse only after Isis has retrieved it. Isis then finds and buries each piece of her husband's body, with the exception of the penis, which she has to reconstruct with magic, because the original was eaten by fish in the river.

According to Plutarch, this is the reason the Egyptians had a taboo against eating fish. In Egyptian accounts, however, the penis of Osiris is found intact, and the only close parallel with this part of Plutarch's story is in "The Tale of Two Brothers", a folk tale from the New Kingdom with similarities to the Osiris myth.[43]

A final difference in Plutarch's account is Horus' birth. The form of Horus that avenges his father has been conceived and born before Osiris' death. It is a premature and weak second child, Harpocrates, who is born from Osiris' posthumous union with Isis. Here, two of the separate forms of Horus that exist in Egyptian tradition have been given distinct positions within Plutarch's version of the myth.[44]

Isis nursing Horus

Birth and childhood of Horus[edit]

In Egyptian accounts, the pregnant Isis hides from Set, to whom the unborn child is a threat, in a thicket of papyrus in the Nile Delta. This place is called *Akh-bity*, meaning "papyrus thicket of the king of Lower Egypt" in Egyptian.[45] Greek writers call this place *Khemmis* and indicate that it is near the city of Buto,[46] but in the myth, the physical location is unimportant compared with its nature as an iconic place of seclusion and safety.[47]

The thicket's special status is indicated by its frequent depiction in Egyptian art; for most events in Egyptian mythology, the backdrop is minimally described or illustrated. In this thicket, Isis gives birth to Horus and raises him, and hence it is called the "nest of Horus".[34] The image of Isis nursing her child is a very common motif in Egyptian art.[45]

There are texts in which Isis travels in the wider world. She moves among ordinary humans who are unaware of her identity, and she even appeals to these people for help. This is another unusual circumstance, for in Egyptian myth, gods and humans are normally separate.[48] As in the first phase of the myth, she often has the aid of other deities, who protect her son in her absence.[34]

According to one magical spell, seven minor scorpion deities travel with and guard Isis as she seeks help for Horus. They even take revenge on a wealthy woman who has refused to help Isis by stinging the woman's son, making it necessary for Isis to heal the blameless child.[48] This story conveys a moral message that the poor can be more virtuous than the wealthy and illustrates Isis' fair and compassionate nature.[49]

In this stage of the myth, Horus is a vulnerable child beset by dangers. The magical texts that use Horus' childhood as the basis for their healing spells give him different ailments, from scorpion stings to simple stomachaches,[50] adapting the tradition to fit the malady that each spell was intended to treat.[51]

Most commonly, the child god has been bitten by a snake, reflecting the Egyptians' fear of snakebite and the resulting poison.[34] Some texts indicate that these hostile creatures are agents of Set.[52] Isis may use her own magical powers to save her child, or she may plead with or threaten deities such as

Ra or Geb, so they will cure him. As she is the archetypal mourner in the first portion of the story, so during Horus' childhood she is the ideal devoted mother.[53] Through the magical healing texts, her efforts to heal her son are extended to cure any patient.[47]

Conflict of Horus and Set[edit]

The next phase of the myth begins when the adult Horus challenges Set for the throne of Egypt. The contest between them is often violent but is described as a legal judgment before the Ennead, an assembled group of Egyptian deities, to decide who should inherit the kingship.

The judge in this trial may be Geb, who, as the father of Osiris and Set, held the throne before they did, or it may be the creator gods Ra or Atum, the originators of kingship.[54] Other deities take important roles: Thoth frequently acts as a conciliator in the dispute[55] or as an assistant to the divine judge, and in "Contendings", Isis uses her cunning and magical power to aid her son.[56]

The rivalry of Horus and Set is portrayed in two contrasting ways. Both perspectives appear as early as the *Pyramid Texts*, the earliest source of the myth. In some spells from these texts, Horus is the son of Osiris and nephew of Set, and the murder of Osiris is the major impetus for the conflict. The other tradition depicts Horus and Set as brothers.[57] This incongruity persists in many of the subsequent sources, where the two gods may be called brothers or uncle and nephew at different points in the same document.[58]

Horus spears Set, who appears in the form of a hippopotamus, as Isis looks on

The divine struggle involves many episodes. "Contendings" describes the two gods appealing to various other deities to arbitrate the dispute and competing in different types of contests, such as racing in boats or fighting each other in the form of hippopotami, to determine a victor.

In this account, Horus repeatedly defeats Set and is supported by most of the other deities.[59] Yet the dispute drags on for eighty years, largely because the judge, the creator god, favors Set.[60] In late ritual texts, the conflict is characterized as a great battle involving the two deities' assembled followers.[61] The strife in the divine realm extends beyond the two combatants.

At one point Isis attempts to harpoon Set as he is locked in combat with her son, but she strikes Horus instead, who then cuts off her head in a fit of rage.[62] Thoth replaces Isis' head with that of a cow; the story gives a mythical origin for the cow-horn headdress that Isis commonly wears.[63] In some sources, Set justifies further attacks on Horus as punishment for the young god's violence against his mother.[64]

In a key episode in the conflict, Set sexually abuses Horus. Set's violation is partly meant to degrade his rival, but it involves homosexual desire, in

keeping with one of Set's major characteristics, his forceful and indiscriminate sexuality.[65]

In the earliest account of this episode, in a fragmentary Middle Kingdom papyrus, the sexual encounter begins when Set asks to have sex with Horus, who agrees on the condition that Set will give Horus some of his strength.[66] The encounter puts Horus in danger, because in Egyptian tradition semen is a potent and dangerous substance, akin to poison.

According to some texts, Set's semen enters Horus' body and makes him ill, but in "Contendings", Horus thwarts Set by catching Set's semen in his hands. Isis retaliates by putting Horus' semen on lettuces that Set eats. Set's defeat becomes apparent when this semen appears on his forehead as a golden disk. He has been impregnated with his rival's seed and as a result "gives birth" to the disk. In "Contendings", Thoth takes the disk and places it on his own head; in earlier accounts, it is Thoth who is produced by this anomalous birth.[67]

Another important episode concerns mutilations that the combatants inflict upon each other: Horus injures or steals Set's testicles and Set damages or tears out one, or occasionally both, of Horus' eyes. Sometimes the eye is torn into pieces.[68] Set's mutilation signifies a loss of virility and strength.[69]

The removal of Horus' eye is even more important, for this stolen Eye of Horus represents a wide variety of concepts in Egyptian religion. One of Horus' major roles is as a sky deity, and for this reason his right eye was said to be the sun and his left eye the moon.

The theft or destruction of the Eye of Horus is therefore equated with the darkening of the moon in the course of its cycle of phases, or during eclipses. Horus may take back the lost eye, or other deities, including Isis, Thoth, and Hathor, may retrieve or heal it for him.[68] The Egyptologist Herman te Velde argues that the tradition about the lost testicles is a late variation on Set's loss of semen to Horus, and that the moon-like disk that emerges from Set's head after his impregnation is the Eye of Horus.

If so, the episodes of mutilation and sexual abuse would form a single story, in which Set assaults Horus and loses semen to him, Horus retaliates and impregnates Set, and Set comes into possession of Horus' Eye when it appears on Set's head. Because Thoth is a moon deity in addition to his other functions, it would make sense, according to te Velde, for Thoth to emerge in the form of the Eye and step in to mediate between the feuding deities.[70]

In any case, the restoration of the Eye of Horus to wholeness represents the return of the moon to full brightness,[71] the return of the kingship to Horus,[72]and many other aspects of *maat*.[73] Sometimes the restoration of Horus' eye is accompanied by the restoration of Set's testicles, so that both gods are made whole near the conclusion of their feud.[74]

Resolution[edit]

As with so many other parts of the myth, the resolution is complex and varied. Often, Horus and Set divide the realm between them. This division can be equated with any of several fundamental dualities that the Egyptians saw in their world.

Horus may receive the fertile lands around the Nile, the core of Egyptian civilization, in which case Set takes the barren desert or the foreign lands that are associated with it; Horus may rule the earth while Set dwells in the sky; and each god may take one of the two traditional halves of the country, Upper and Lower Egypt, in which case either god may be connected with either region.

Yet in the Memphite Theology, Geb, as judge, first apportions the realm between the claimants and then reverses himself, awarding sole control to Horus. In this peaceable union, Horus and Set are reconciled, and the dualities that they represent have been resolved into a united whole. Through this resolution, order is restored after the tumultuous conflict.[75]

A different view of the myth's end focuses on Horus' sole triumph.[76] In this version, Set is not reconciled with his rival, but utterly defeated,[77] and sometimes he is exiled from Egypt or even destroyed.[78] His defeat and humiliation is more pronounced in sources from later periods of Egyptian history, when he was increasingly equated with disorder and evil, and the Egyptians no longer saw him as an integral part of natural order.[77]

With great celebration among the gods, Horus takes the throne, and Egypt at last has a rightful king.[79] The divine decision that Set is in the wrong corrects the injustice created by Osiris' murder and completes the process of his restoration after death.[80] Sometimes Set is made to carry Osiris' body to its tomb as part of his punishment.[81]

The new king performs funerary rites for his father and gives food offerings to sustain him—often including the Eye of Horus, which in this instance represents life and plenty.[82] According to some sources, only through these acts can Osiris be fully enlivened in the afterlife and take his place as king of the dead, paralleling his son's role as king of the living. Thereafter, Osiris is deeply involved with natural cycles of death and renewal, such as the annual growth of crops, that parallel his own resurrection.[83]

Origins[edit]

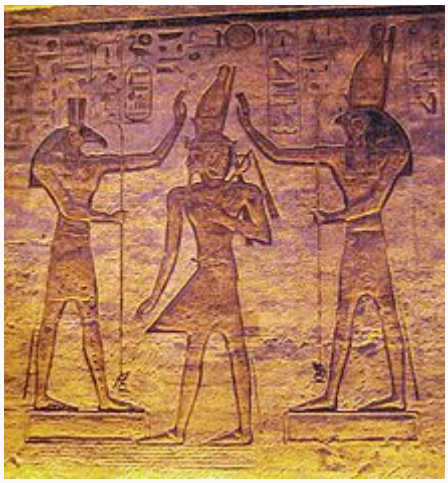
As the Osiris myth first appears in the *Pyramid Texts*, most of its essential features must have taken shape sometime before the texts were written. The distinct segments of the story—Osiris' death and restoration, Horus' childhood, and Horus' conflict with Set—may originally have been independent mythic episodes. If so, they must have begun to coalesce into a single story by the time of the *Pyramid Texts*, which loosely connect those segments.

In any case, the myth was inspired by a variety of influences.[3] Much of the story is based in religious ideas[84] and the general nature of Egyptian society: the divine nature of kingship, the succession from one king to another,[85] the struggle to maintain *maat*,[86] and the effort to overcome death.[3] For instance, Isis and Nephthys' lamentations for their dead brother may represent an early tradition of ritualized mourning.[87]

There are, however, important points of disagreement. The origins of Osiris are much debated,[38] and the basis for the myth of his death is somewhat uncertain.[88] One influential hypothesis was given by the anthropologist James

Frazer, who in 1906 said that Osiris, like other "dying and rising gods" across the ancient Near East, began as a personification of vegetation. His death and restoration, therefore, were based on the yearly death and re-growth of plants. [89] Many Egyptologists adopted this explanation.

But in the late 20th century, J. Gwyn Griffiths, who extensively studied Osiris and his mythology, argued that Osiris originated as a divine ruler of the dead, and his connection with vegetation was a secondary development. [90] Meanwhile, scholars of comparative religion have increasingly criticized Frazer's overarching concept of "dying and rising gods". [89] More recently, the Egyptologist Rosalie David maintains that Osiris originally "personified the annual rebirth of the trees and plants after the [Nile] inundation." [91]



Horus and Set as supporters of the king

Another continuing debate concerns the opposition of Horus and Set, which Egyptologists have often tried to connect with political events early in Egypt's history or prehistory. The cases in which the combatants divide the kingdom, and the frequent association of the paired Horus and Set with the union of Upper and Lower Egypt, suggest that the two deities represent some kind of division within the country.

Egyptian tradition and archaeological evidence indicate that Egypt was united at the beginning of its history when an Upper Egyptian kingdom, in the south, conquered Lower Egypt in the north. The Upper Egyptian rulers called themselves "followers of Horus", and Horus became the patron god of the unified nation and its kings. Yet Horus and Set cannot be easily equated with the two halves of the country. Both deities had several cult centers in each region, and Horus is often associated with Lower Egypt and Set with Upper Egypt. [31]

One of the better-known explanations for these discrepancies was proposed by Kurt Sethe in 1930. He argued that Osiris was originally the human ruler of a unified Egypt in prehistoric times, before a rebellion of Upper Egyptian Set-worshippers. The Lower Egyptian followers of Horus then forcibly reunified the land, inspiring the myth of Horus' triumph, before Upper Egypt, now led by Horus worshippers, became prominent again at the start of the Early Dynastic Period. [92]

In the late 20th century, Griffiths focused on the inconsistent portrayal of Horus and Set as brothers and as uncle and nephew. He argued that, in the early stages of Egyptian mythology, the struggle between Horus and Set as siblings and equals was originally separate from the murder of Osiris. The two stories were joined into the single Osiris myth sometime before the writing of the *Pyramid Texts*.

With this merging, the genealogy of the deities involved and the characterization of the Horus–Set conflict were altered so that Horus is the son and heir avenging Osiris' death. Traces of the independent traditions remained in the conflicting characterizations of the combatants' relationship and in texts unrelated to the Osiris myth, which make Horus the son of the goddess Nut or the goddess Hathor rather than of Isis and Osiris. Griffiths therefore rejected the possibility that Osiris' murder was rooted in historical events.[93] This hypothesis has been accepted by more recent scholars such as Jan Assmann[58] and George Hart.[94]

Griffiths sought a historical origin for the Horus–Set rivalry, and he posited two distinct pre - dynastic unifications of Egypt by Horus worshippers, similar to Sethe's theory, to account for it.[95] Yet the issue remains unresolved, partly because other political associations for Horus and Set complicate the picture further.[96] Before even Upper Egypt had a single ruler, two of its major cities were Nekhen, in the far south, and Naqada, many miles to the north.

The rulers of Nekhen, where Horus was the patron deity, are generally believed to have unified Upper Egypt, including Naqada, under their sway. Set was associated with Naqada, so it is possible that the divine conflict dimly reflects an enmity between the cities in the distant past. Much later, at the end of the Second Dynasty(c. 2890–2686 BC), King Peribsen used the Set animal in writing his *serekh*-name, in place of the traditional falcon hieroglyph representing Horus.

His successor Khasekhemwy used both Horus and Set in the writing of his *serekh*. This evidence has prompted conjecture that the Second Dynasty saw a clash between the followers of the Horus-king and the worshippers of Set led by Peribsen. Khasekhemwy's use of the two animal symbols would then represent the reconciliation of the two factions, as does the resolution of the myth.[31]

Noting the uncertainties surrounding events so far back in time, Herman te Velde argues that the historical roots of the conflict are too obscure to be very useful in understanding the myth and are not as significant as its religious meaning. He says that "the origin of the myth of Horus and Seth is lost in the mists of the religious traditions of prehistory."[84]

Influence[edit]

The effect of the Osiris myth on Egyptian culture was greater and more widespread than that of any other myth.[1] In literature, the myth was not only the basis for a retelling such as "Contendings"; it provided the basis for more distantly related stories. "The Tale of Two Brothers", a folk tale with human protagonists, includes elements similar to the myth of Osiris.[97]

One character's penis is eaten by a fish, and he later dies and is resurrected.[98] Another story, "The Tale of Truth and Falsehood", adapts the conflict of Horus and Set into an allegory, in which the characters are direct personifications of truth and lies rather than deities associated with those concepts.[97]

The opening of the mouth ceremony, a key funerary ritual, performed for Tutankhamun by his successor Ay. The deceased king takes on the role of Osiris, upon whom Horus was supposed to have performed the ceremony.[99]

From at least the time of the *Pyramid Texts*, kings hoped that after their deaths they could emulate Osiris' restoration to life and his rule over the realm of the dead. By the early Middle Kingdom (c. 2055–1650 BC), non-royal Egyptians believed that they, too, could overcome death as Osiris had, by worshipping him and receiving the funerary rites that were partly based on his myth. Osiris thus became Egypt's most important afterlife deity.[100]

The myth influenced the notion, which grew prominent in the New Kingdom, that only virtuous people could reach the afterlife. As the assembled deities judged Osiris and Horus to be righteous, undoing the injustice of Osiris' death, so a deceased soul had to be judged righteous in order for his or her death to be undone.[80] As ruler of the land of the dead and as a god connected with *maat*, Osiris became the judge in this posthumous trial, offering life after death to those who followed his example.[101]

As the importance of Osiris grew, so did his popularity. By late in the Middle Kingdom, the centuries-old tomb of the First Dynasty ruler Djer, near Osiris' main center of worship in the city of Abydos, was seen as Osiris' tomb. Accordingly, it became a major focus of Osiris worship.

For the next 1,500 years, an annual festival procession traveled from Osiris' main temple to the tomb site. This procession made reference to, and may have ritually reenacted, Isis and Nephthys' mourning, restoration, and revival

of their murdered brother.[102] Kings and commoners from across Egypt built chapels, which served ascenotaphs, near the processional route. In doing so they sought to strengthen their connection with Osiris in the afterlife.[103]

Another major funerary festival, a national event spread over several days in the month of Khoiak in the Egyptian calendar, became linked with Osiris during the Middle Kingdom.[104] During Khoiak the *djed* pillar, an emblem of Osiris, was ritually raised into an upright position, symbolizing Osiris' restoration. By Ptolemaic times (305–30 BC), Khoiak included the planting of seeds in an "Osiris bed", a mummy-shaped bed of soil, connecting the resurrection of Osiris with the seasonal growth of plants.[105]

The myth's religious importance extended beyond the funerary sphere. Mortuary offerings, in which family members or hired priests presented food to the deceased, were logically linked with the mythological offering of the Eye of Horus to Osiris.

By analogy, this episode of the myth was eventually equated with other interactions between a human and a being in the divine realm. In temple offering rituals, the officiating priest took on the role of Horus, the gifts to the deity became the Eye of Horus, and whichever deity received these gifts was momentarily equated with Osiris.[106]

The ideology surrounding the living king was affected by the Osiris myth. The Egyptians envisioned the events of the Osiris myth as taking place sometime in Egypt's dim prehistory, and Osiris, Horus, and their divine predecessors were included in Egyptian lists of past kings such as the Turin Royal Canon.[107]

Horus, as a primeval king and as the personification of kingship, was regarded as the predecessor and exemplar for all Egyptian rulers. His assumption of his father's throne and pious actions to sustain his spirit in the afterlife were the model for all pharaonic successions to emulate.[108]

Each new king was believed to renew *maat* after the death of the preceding king, just as Horus had done. In royal coronations, rituals alluded to Osiris' burial, and hymns celebrated the new king's accession as the equivalent of Horus' own.[79]

The myth influenced popular religion as well. One example is the magical healing spells based on Horus' childhood. Another is the use of the Eye of Horus as a protective emblem in personal apotropaic amulets. Its mythological restoration made it appropriate for this purpose, as a general symbol of well-being.[31]

As the antagonist of the myth, Set did not enjoy increased popularity. Although other traditions credit him with positive traits, in the Osiris myth the sinister aspects of his character predominate.[109] He and Horus were often juxtaposed in art to represent opposite principles, such as good and evil, intellect and instinct, and the different regions of the world that they rule in the myth.

Egyptian wisdom texts contrast the character of the ideal person with the opposite type—the calm and sensible "Silent One" and the impulsive, disruptive "Hothead"—and one description of these two characters calls them the Horus-type and the Set-type.

The two gods were often treated as part of a harmonious whole. In some local cults they were worshipped together; in art they were often shown tying together the emblems of Upper and Lower Egypt to symbolize the unity of the nation; and in funerary texts they appear as a single deity with the heads of Horus and Set, apparently representing the mysterious, all-encompassing nature of the Duat.[110]

Overall, Set was viewed with ambivalence, until during the first millennium BC he came to be seen as a totally malevolent deity. This transformation was prompted more by his association with foreign lands than by the Osiris myth.[109] Nevertheless, in these late times, the widespread temple rituals involving the ceremonial annihilation of Set were often connected with the myth.[111]

Both Isis and Nephthys were seen as protectors of the dead in the afterlife because of their protection and restoration of Osiris' body.[112] Isis, as Horus' mother, was the mother of every king according to royal ideology, and kings were said to have nursed at her breast as a symbol of their divine legitimacy.[113] Her appeal to the general populace was based in her protective character, as exemplified by the magical healing spells.

In the Late Period, she was credited with ever greater magical power, and her maternal devotion was believed to extend to everyone. By Roman times she was the most important goddess in Egypt.[114] The image of the goddess holding her child was used prominently in her worship—for example, in panel paintings that were used in household shrines dedicated to her. Isis' iconography in these paintings closely resembles and probably influenced the earliest Christian icons of Mary holding Jesus.[115]

In the late centuries BC, the worship of Isis spread from Egypt across the Mediterranean world, and she became one of the most popular deities in the region. Although this new, multicultural form of Isis absorbed characteristics from many other deities, her original mythological nature as a wife and mother was key to her appeal.

Horus and Osiris, being central figures in her story, spread along with her.[116] It was to a Greek priestess of Isis that Plutarch wrote his account of the myth of Osiris.[117] Her importance continued into the fourth century AD, when Christianity eclipsed it. But Christianity absorbed many of the traditions surrounding Isis and incorporated them into the veneration of Mary, such as Isis' title "Mother of the God" (referring to Horus), which influenced Mary's title "Mother of God".[118]

Through the work of classical writers such as Plutarch, knowledge of the Osiris myth was preserved even after the middle of the first millennium AD, when Egyptian religion ceased to exist and knowledge of the writing systems that were originally used to record the myth were lost. The myth remained a major part of Western impressions of ancient Egypt. In modern times, when understanding of Egyptian beliefs is informed by the original Egyptian sources, the story continues to influence and inspire new ideas, from works of fiction to scholarly speculation and new religious movements.[119]

Appendix II 42 Negative Confessions (*Papyrus of Ani*)

One aspect of ancient Egyptian funerary literature which often is mistaken for a codified ethic of Maat is Spell (Chapter) 125 of the *Book of the Dead* or *Papyrus of Ani* (known to the ancient Egyptians as *The Book of Going Forth by Day*). The lines of these texts are often collectively called the "Forty-Two Declarations of Purity". These declarations varied somewhat from tomb to tomb and so cannot be considered a canonical definition of Maat.

Rather, they appear to express each tomb owner's individual practices in life to please Maat, as well as words of absolution from misdeeds or mistakes, made by the tomb owner in life could be declared as not having been done, and through the power of the written word, wipe particular misdeed from the afterlife record of the deceased.

Many of the lines are similar, however, and they can help to give the student a "flavor" for the sorts of things which Maat governed — essentially everything, from the most formal to the most mundane aspects of life.

The doctrine of Maat is represented in the declarations to Rekhti-merti-f-ent-Maat and the 42 Negative Confessions listed in the Papyrus of Ani. The following are taken from public domain translations made by E. A. Wallis Budge in the early part of the 20th century; more recent translations may differ in the light of modern scholarship.

42 Negative Confessions (*Papyrus of Ani*)

1. I have not committed sin.
2. I have not committed robbery with violence.
3. I have not stolen.
4. I have not slain men and women.
5. I have not stolen grain.
6. I have not purloined offerings.
7. I have not stolen the property of the god.
8. I have not uttered lies.
9. I have not carried away food.
10. I have not uttered curses.
11. I have not committed adultery, I have not lain with men.
12. I have made none to weep.
13. I have not eaten the heart [i.e, I have not grieved uselessly, or felt remorse].
14. I have not attacked any man.
15. I am not a man of deceit.
16. I have not stolen cultivated land.
17. I have not been an eavesdropper.

18. I have slandered [no man].

19. I have not been angry without just cause.

20. I have not debauched the wife of any man.

21. I have not debauched the wife of [any] man. (repeats the previous affirmation but addressed to a different god).

22. I have not polluted myself.

23. I have terrorised none.

24. I have not transgressed [the Law].

25. I have not been wroth.

26. I have not shut my ears to the words of truth.

27. I have not blasphemed.

28. I am not a man of violence.

29. I am not a stirrer up of strife (or a disturber of the peace).

30. I have not acted (or judged) with undue haste.

31. I have not pried into matters.

32. I have not multiplied my words in speaking.

33. I have wronged none, I have done no evil.

34. I have not worked witchcraft against the King (or blasphemed against the King).

35. I have never stopped [the flow of] water.

36. I have never raised my voice (spoken arrogantly, or in anger).

37. I have not cursed (or blasphemed) God.

38. I have not acted with evil rage.

39. I have not stolen the bread of the gods.

40. I have not carried away the khenfu cakes from the spirits of the dead.

41. I have not snatched away the bread of the child, nor treated with contempt the god of my city.

42. I have not slain the cattle belonging to the god.[26]

Appendix III
Fields of Aaru

In ancient Egyptian mythology, the fields of **Aaru** ([*pronunciation?*]; Egyptian:

iArw meaning "reeds") (alternatives: *Yaaru*, *Iaru*, *Aalu*) or the **Egyptian reed fields**, are the heavenly paradise, where Osiris ruled after he became part of the Egyptian pantheon and displaced Anubis in the Ogdoad tradition. It has been described as the *ka* (a part of the soul) of the Nile Delta.

Only souls who weighed exactly the same as the feather of the goddess Ma'at were allowed to start a long and perilous journey to Aaru, where they would exist in pleasure for all eternity. The ancient Egyptians believed that the soul resided in the heart. Those whose heart did not match the weight of the feather of Ma'at due to their sins were excluded.[1] They were said to suffer a *second death* when devoured by another being, Ammit, while still in Duat for judgment.

The souls who did qualify had to undergo a long journey and face many perils before reaching Aaru. Once they arrived, they had to enter through a series of gates. The exact number of gates varies according to sources, some say 15, some 21. They are however uniformly described as being guarded by evil demons armed with knives.

Aaru usually was placed in the east, where the Sun rises, and is described as eternal reed fields, very much like those of the earthly Nile delta: an ideal hunting and fishing ground, and hence, those deceased who, after judgment, were allowed to reside there, were often called the eternally living. More precisely, Aaru was envisaged as a series of islands, covered in "fields of rushes" (*Sekhet Aaru*), *Aaru* being the Egyptian word for rushes. The part where Osiris later dwelt was sometimes known as the "field of offerings", *Sekhet Hetepet* in Egyptian.

Appendix IV The Am Duat

The **Amduat**[*pronunciation?*] (literally "That Which Is In the Afterworld", translated as "Text of the Hidden Chamber Which is in the Underworld" and "Book of What is in the Underworld")[1] is an important Ancient Egyptian funerary text of the New Kingdom. Like many funerary texts, it was found written on the inside of the pharaoh's tomb for reference. Unlike other funerary texts, however, it was reserved only for pharaohs (until the 21st Dynasty almost exclusively) or very favored nobility.[2]

It tells the story of Ra, the Egyptian sun god who travels through the underworld, from the time when the sun sets in the west and rises again in the east. It is said that the dead Pharaoh is taking this same journey, ultimately to become one with Ra and live forever.

The underworld is divided into twelve hours of the night, each representing different allies and enemies for the Pharaoh/sun god to encounter.
The *Amduat* names all of these gods and monsters. The main purpose of the *Amduat* is to give the names of these gods and monsters to the spirit of the dead Pharaoh, so he can call upon them for help or use their name to defeat them.

As well as enumerating and naming the inhabitants of the Duat (or Dwat) both good and bad, the illustrations of the 'book' show clearly the topography of the underworld. The earliest complete version of the *Amduat* is found in KV34, the tomb of Thutmose III in the Valley of the Kings.

In hour 1 the sun god enters the western horizon (akhet) which is a transition between day and night. In hours 2 and 3 he passes through an abundant watery world called 'Wernes' and the 'Waters of Osiris'.

In hour 4 he reaches the difficult sandy realm of Sokar, the underworld hawk deity, where he encounters dark zig zag pathways which he has to negotiate, being dragged on a snake-boat.

In hour 5 he discovers the tomb of Osiris which is an enclosure beneath which is hidden a lake of fire, the tomb is covered by a pyramid like mound (identified with the goddess Isis) and on top of which Isis and Nephthys have alighted in the form of two kites (birds of prey).

In the sixth hour the most significant event in the underworld occurs.
The ba (or soul) of Ra unites with his own body, or alternatively with the ba of Osiris within the circle formed by the mehen serpent. This event is the point at which the sun begins its regeneration, it is a moment of great significance, but danger, as beyond it in hour 7 the adversary Apep (Apophis) lies in wait and has to be subdued by the magic of Isis, and the strength of Set assisted by Serqet.

Once this has been done the sun god opens the doors of the tomb in hour 8 and then leaves the sandy island of Sokar by rowing vigorously back into the waters in hour 9.

In hour 10 the regeneration process continues through immersion in the waters until in hour 11 the gods eyes (a symbol for his health and well being) are fully regenerated. In hour 12 he enters the eastern horizon ready to rise again as the new day's sun.

Contact

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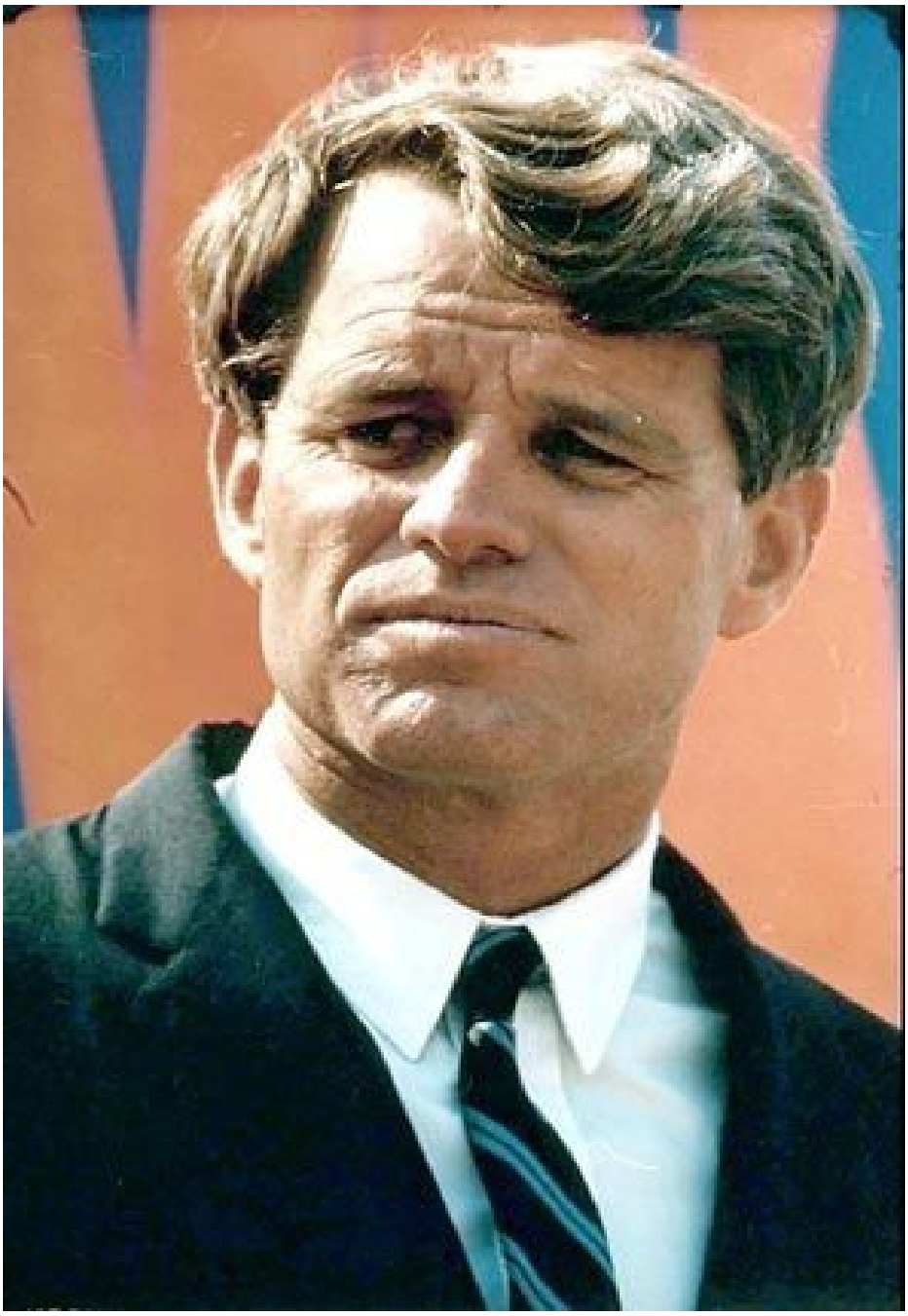

**Let's dedicate ourselves to what the Greeks wrote so many years ago:
to tame the savageness of man and make gentle the life of this world.**

**Some men look at things the way they are, and ask why...
I dream of things that never were, and ask why not?**

Robert Francis Kennedy