

The Resurrection of Jesus or was Jesus revived from a Coma ? Why not save and preserve the Bones found in the Jesus Family Tomb in 1980 for a possible Medical Resurrection of the Dead Body just in case ?

COULD JESUS HAVE SURVIVED CRUXIFIXION ?

DID JESUS RESURRECT FROM A COMA ?

WHY DID JESUS EAT BREAKFAST WITH THE APOSTLES AFTER HE WAS RESURRECTED , WAS HE HUNGRY ?

WHY NOT SAVE AND PRESERVE THE BONES FOUND IN THE JESUS FAMILY TOMB JUST IN CASE THEY ARE THOSE OF JESUS AND THE HOLY FAMILY FOR THE PROMISED (MEDICAL) RESURRECTION OF THE DEAD BODY ?

Why not help preserve those alleged skulls and bones found at the Jesus family tomb in 1980 just incase they are infact the real skulls and bones of Jesus and the Holy Family and Friends as I think they are.

re Medical Resurrection of the Body & The Bones of Jesus as a Defense Shield ? With \$1,000,000.00 U.S. Dollars Can Jerusalem secure and preserve the BONES found in the Jesus Family Tomb ?

PS I currently have \$950,000.00 U.S. Dollars in United States gold clause securities made a legal tender under the Act of Congress of June 5th 1933 and apparently exchangable for other United States coins and currencies under 31 USC 5118 (gold clauses and US currency exchanges) already on deposit at the BEP .

That money can be used to secure and preserve the " alleged bones of Jesus and the Holy Family and Friends found in the Jesus family tomb.

I AM WORRIED THIEVES OR TERRORISTS WILL TRY TO DESTROY THE BONES FOUND IN THE JESUS FAMILY TOMB

Repectfully

Br Dan Izzo D.D.

PS In Sept 1999 a few months after I filed my first US Pat application for the resurrection burial tomb , I took a picture of my house as I was trying to flee terror , and a ghost image of Jesus appeared on the photo, almost like the image on the shroud of Turin but its finger was over its mouth and if Jesus was telling me to keep quite.

Dear Sir: Concerning the Jesus Family Tomb. I am willing to pay \$1,000,000.00 United States Dollars (US Legal Tender 31 USC 5103)to save and preserve the skulls and bones of the people in the Jesus Family Tomb that where allegedly re buried. The Money is in United States gold clause securities exchangeable by the Sect of the Treasury under 31 USC 5118. I am praying for you people very much , I pray that the skulls and bones of the people in the Jesus Family Tomb , THAT THE SKULLS AND BONES IN THE JESUS FAMILY TOMB ARE SAVED AND PRESERVED FROM DECAY WITH THE POSSIBLE HOPE OF A REAL MEDICAL RESURRECTION OF THEM INCLUDING JESUS THROUGH SCIENCE , STEM CELLS AND THE BELOW INVENTION TITLED A RESURRECTION BURIAL TOMB US PAT PENDING SINCE 1999...PLEASE SAVE THOSE BONES FROM THE GRAVE..asap...JUST IN CASE... I believe you have in fact found the tomb of Jesus and the Apostles , Jesus's son (adopted son ?) and Mary. As a 41 year old celibate virgin , I understand the Bible didn't state Jesus was a virgin , and I thought for decades Jesus was in love with Mary M. ..of St John chapter 8...that woman caught in adultery ...was his wife?...makes sense...this re discovery I find is an " as is " 2nd arrival of the BODY of Jesus as promised in the Bible and St Barnabas epistle (re the year 2000 A.D. is alleged to have been 6000 years from Adam. If we can have a photo of the skull and bones of Jesus of the Family Tomb , we can compare them with the Shroud of Turin...

Dear Garden Tomb Jerusalem:

Even if the bones are recovered and preserved , they alone can not prove 100% that they where of the Jesus the Christ Spirit.

But if those bones match the image found on the Shroud of Turin then one can safely say this most likely is Jesus the Christ Spirit

For me the finding of this alleged Tomb is the second arrival of Jesus' (body) on Earth again as promised but in an , as is sense.

I will do what I can to help the Churches in Jerusalem with funds for goods and services...for resurrection science purposes including the Garden Tomb

I can send you the 1988 IAM Million Dollar note on real bank note paper and they maybe useful as simple US paper coins for the payment of US taxes under the coin act of 1965 31 USC 392 ..I am not exactly sure on this but I can mail you one anyways

In one of the emails I sent , there is this amazing engima of Jesus over my house in 1999 I do believe , almost know the Christ Spirit is in motion and active in the SUN and Earth.

This could be a very exciting time of the Church , as promised the dead can and have been " resurrected " through organ donations , coma revivals , even re growing new tissues via stem cells

I don't know if you think people fly into outerspace (heaven) after death or are resting and waiting for the resurrection of the body , it doesn't matter...both are true inpart

photons might equal spirit and adding science / a medical resurrection is possible.

I am doing what I can here in the United States to help all of you good people in Jerusalem , Jewish , Muslim and Christian help Jesus' plan to make a heaven on earth and allow people to live as children for 1000 years as promised

God has a different plan for me , I have saved enough money to buy a ticket into outerspace after my death...outerdarkness the place where the worthless servant / foolish virgins go

but before I do , I hope to make that trip affordable for many as I developed a new heat to electric ion truster powered spaceship via balloon launch

in the future by the year 2361 that process will have been used by Venus gold mining robots..you could say they are devils as they work on the hellish Venus , venus gold bank , but they are not motivated by food or love as people are

what concerns me is if deceased person's bodies are resurrected into those robots

it isn't up to me to ressurect people and cast them into hell, that I why finding the Jesus Family Tomb is important because Jesus was holy and good and promised everyone a fair and second chance

**For the Cryonic Life Insurance Company
Dept of General Resurrection**

Br Dan

part of the other email notes

REFERENCES

What Bones of Jesus?

By Brent Bozell III

Wednesday, February 28, 2007

The press releases of the Discovery Channel boast that its parent company, Discovery Communications, is the "number one nonfiction media company." That identifier is now in shambles, and the paper it's printed on fit only to be crumpled and thrown away. The folks at Discovery have rendered themselves carnival barkers peddling sensationalistic garbage, trashy moneymaking gimmicks dressed up as real journalism.

The Discovery Channel is hyping to the heavens its new documentary on "The Lost Tomb of Jesus." James Cameron, the Oscar-winning director of "Titanic," has joined filmmaker Simcha Jacobovici in publicizing claims that a 2,000-year-old tomb containing 10 boxes of bones belonged to the family of Jesus of Nazareth. It also echoes the dopey "DaVinci Code" novel by asserting that Jesus was married to Mary Magdalene, that the couple had a son. They claim the son was named Judah and that all three were buried together.

So much for the Resurrection. So much for the Bible. So much for the divinity of Christ. So much for Christianity. It's all a fraud -- if one is to believe the nonfiction of the Discovery Channel.

Other than a syrupy boost -- an embarrassingly syrupy boost -- from an "exclusive" appearance on NBC's "Today" show, the national media for once aren't buying into this cheap publicity stunt and have found a load of skeptics to denounce the film, maybe because the list of experts, both scientific and religious, is endless.

Perhaps the most important debunker is professor Amos Kloner, who oversaw the original archaeological dig of this tomb in 1980. "It makes

a great story for a TV film," Kloner told the Jerusalem Post. "But it's completely impossible. It's nonsense."

Joe Zias, who was the curator for anthropology and archeology at the Rockefeller Museum in Jerusalem from 1972 to 1997 and personally numbered the ossuaries at the center of the film, was even harsher: "Simcha has no credibility whatsoever. ... He's pimping off the Bible. ... Projects like these make a mockery of the archeological profession."

Hebrew University archeologist and epigraphist Leah DiSegni said that the names found in the tomb, Mary, Joseph and Jesus, were among the most common names of the day. It would be like finding a tomb with the name George on it in the future and asserting that it must have been the tomb of President George Bush, DiSegni told the Cybercast News Service. In addition, biblical scholar Stephen Pfann has questioned even the actual inscription on the tomb, claiming it's "scratchy" and hard to read. For all we know, it's Johnny, Mabel and Jerry.

How do the producers defend themselves against the avalanche of criticism? It's so, so typical. On the "Today" show, Jacobovici and Cameron -- the "Titanic" director -- finally were pressed to respond to critics like Zias. They quickly fell back on the laughable concept that they weren't -- surprise! -- experts. Both said they weren't archaeologists. One insisted he was filmmaker, the other a journalist. Cameron found it "compelling" as a layman.

In other words, neither has credibility -- and neither does the nonfiction Discovery Channel.

When it comes to ancient Christian sites, the Discovery Channel already had a huge credibility problem on its hands. Discovery aired a 2002 special on the alleged "Ossuary of James," which was declared a forgery in 2003 by the Israel Antiquities Authority. Its promoter, Oded Golan, is currently on trial for forging part of the inscription. Jacobovici produced that badly flawed documentary, too.

The Discovery Channel, like most of the national TV elite, displays a dramatic bias in target selection when it comes to religion. There are no controversies over the historical claims of Islam, Judaism or any other

religious faith. But Christianity is another story. It is routinely the subject of sensationalistic TV exposes, complete with breathless claims about how Jesus "might be" the son of a Roman soldier, or he might have survived the Crucifixion. And now he's a dad, with kids.

What's worse is that these shoddy alleged exposes always air in the most sacred Christian seasons, like Lent. Last year during Lent, on April 2, 2006, "Dateline NBC" offered part of its show to alleged Jesus-debunker Michael Baigent, even as reporter Sara James declared: "Baigent acknowledges there's no proof of his theory, but points out that it was possible to survive crucifixion."

If the Discovery Channel fails to cancel this slanderous 'documentary,' it will have to explain why it is intentionally misleading the public. This network should be embarrassed by this plunge into sensational speculation masquerading as 'science.' To slander Christianity at the start of the Lenten season is unconscionable. This isn't news. It's sensationalism on a stick. Or in this case, on a cross.

Lecturer, syndicated columnist, television commentator, debater, marketer, businessman, author, publisher and activist, L. Brent Bozell III, 51, is one of the most outspoken and effective national leaders in the conservative movement today.

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General Resurrection

Resurrection is the rising again from the dead, the resumption of life. The Fourth Lateran Council teaches that all men, whether elect or reprobate, "will rise again with their own bodies which they now bear about with them" (cap. "Firmiter"). In the language of the creeds and professions of faith this return to life is called resurrection of the body (resurrectio carnis, resurrectio mortuorum, anastasis ton nekron) for a double reason: first, since the soul cannot die, it cannot be said to return to life; second the heretical contention of Hymeneus and Philitus that the Scriptures denote by resurrection not the return to life of the body, but the rising of the soul from the death of sin to the life of grace, must be excluded. (We shall treat of the Resurrection of Jesus Christ in a separate article; here, we treat only of the General Resurrection of the Body.)

"No doctrine of the Christian Faith", says St. Augustine, "is so

vehemently and so obstinately opposed as the doctrine of the resurrection of the flesh" (In Ps. lxxxviii, sermo ii, n. 5). This opposition had begun long before the days of St. Augustine: "And certain philosophers of the Epicureans and of the Stoics ", the inspired writer tells us (Acts, xvii, 18, 32), "disputed with him [Paul] ...and when they had heard of the resurrection of the dead, some indeed mocked, but others said: We will hear thee again concerning this matter." Among the opponents of the Resurrection we naturally find first those who denied the immortality of the soul; secondly, all those who, like Plato, regarded the body as the prison of the soul and death as an escape from the bondage of matter; thirdly the sects of the Gnostics and Manichaeans who looked upon all matter as evil; fourthly, the followers of these latter sects the Priscillianists, the Cathari, and the Albigenses; fifthly, the Rationalists, Materialists, and Pantheists of later times. Against all these we shall first establish the dogma of the resurrection, and secondly consider the characteristics of the risen body.

A. DOGMA OF THE RESURRECTION

The creeds and professions of faith and conciliar definitions do not leave it doubtful that the resurrection of the body is a dogma or an article of faith. We may appeal, for instance, to the Apostles' Creed, the so-called Nicene and Athanasian Creeds, the Creed of the Eleventh Council of Toledo, the Creed of Leo IX, subscribed by Bishop Peter and still in use at the consecration of bishops the profession of faith subscribed by Michael Palaeologus in the Second Council of Lyons, the Creed of Pius IV, and the Decree of the Fourth Lateran Council (c. "Firmiter") against the Albigenses. This article of faith is based on the belief of the Old Testament, on the teaching of the New Testament, and on Christian tradition.

(1) Old Testament

The words of Martha and the history of the Machabees show the Jewish belief towards the end of the Jewish economy. "I know ", says Martha, "that He shall rise again, in the resurrection at the last day" (John, xi, 24). And the third of the Machabee martyrs put forth his tongue and stretched out his hands, saying: "These I have from heaven, but for the laws of God I now despise them: because I hope to receive them again

from him" (II Mach., xii, 11; cf. ix, 14). The Book of Daniel (xii, 2; cf. 12) inculcates the same belief: "Many of those that sleep in the dust of the earth, shall awake: some unto life everlasting, and others unto reproach, to see it always." The word many must be understood in the light of its meaning in other passages, e. g. Is., liii, 11-12; Matt., xxvi, 28; Rom., v, 18-19. Though Ezechiel's vision of the resurrection of the dry bones refers directly to the restoration of Israel, such a figure would be hardly Israel, such a figure would be hardly intelligible except by readers familiar with the belief in a literal resurrection (Ez., xxxvii). The Prophet Isaias foretells that the Lord of hosts "shall cast down death headlong forever" (xxv, 8), and a little later he adds: "Thy dead men shall live, my slain shall rise again. . . the earth shall disclose her blood, and shall cover her slain no more" (xxvi, 19-21). Finally, Job, bereft of all human comfort and reduced to the greatest desolation, is strengthened by the thought of the resurrection of his body: "I know that my Redeemer liveth, and in the last day I shall rise out of the earth. And I shall be clothed again with my skin, and in my flesh I shall see God. Whom I myself shall see, and my eyes shall behold, and not another; this hope is laid up in my bosom" (Job, xix, 25-27). The literal translation of the Hebrew text differs somewhat from the foregoing quotation, but the hope of resurrection remains.

(2) New Testament

The resurrection of the dead was expressly taught by Christ (John, v, 28-29; vi, 39-40; xi, 25; Luke, xiv, 14) and defended against the unbelief of the Sadducees, whom He charged with ignorance of the power of God and of the Scriptures (Matt., xxii, 29; Luke, xx, 37). St. Paul places the general resurrection on the same level of certainty with that of Christ's Resurrection: "If Christ be preached, that he rose again from the dead, how do some among you say that there is no resurrection of the dead? But if there be no resurrection of the dead, then Christ is not risen again. And if Christ be not risen again, then is our preaching vain, and your faith is also vain" (I Cor., xv, 12 sqq.). The Apostle preached the resurrection of the dead as one of the fundamental doctrines of Christianity, at Athens, for instance (Acts, xvii, 18, 31, 32), at Jerusalem (xxiii, 6), before Felix (xxiv, 15), before Agrippa (xxvi, 8). He insists on the same doctrine in his Epistles (Rom., viii, 11; I Cor., vi, 14; xv, 12 sqq.; II Cor., iv, 14; v, 1 sqq.; Phil., iii, 21; I Thess., iv, 12-16; II Tim., ii,

11; Hebr., vi, 2), and in this he agrees with the Apocalypse (xx, 12 sqq.).

(3) Tradition

It is not surprising that the Tradition of the early Church agrees with the clear teaching of both the Old and New Testaments. We have already referred to a number of creeds and professions of faith which may be considered as part of the Church's official expression of her faith. Here we have only to point out a number of patristic passages, in which the Fathers teach the doctrine of the general resurrection in more or less explicit terms. St. Clement of Rome, I Cor., xxv; St. Justin Martyr, "De resurrect.", vii sqq.; Idem, "Dial. c. Tryph.", lxxx; Athenagoras, "De resur. carn.", iii; Tatian, "Adv. Graec.", vi; St. Irenaeus, "Contra haer.", I, x; V, vi, 2; Tertullian, "Contra Marcion.", V, ix; Idem, "De praescript.", xiii; Idem, "De resurrect. carn.", I, xii, xv, lxiii; Minucius Felix, "Octav.", xxxiv; Origen, tom. XVII, in Matt., xxix; Idem, "De princip.", praef., v; Idem, "In Lev.", v, 10; Hippolytus, "Adv. Graec." in P. G., X, 799; St. Cyril of Jerusalem, "Cat.", XVIII, xv; St. Ephraem, "De resurrect. mort."; St. Basil, "Ep. cclxxi", 3; St. Epiphanius, "In ancor.", lxxxiii sq., xcix; St. Ambrose, "De excessu frat. sui Satyri", II, lxxvii, cii; Idem, "In Ps. cxviii", serm. x, n. 18; Ps. Ambr., "De Trinit.", xxiii, in P. L. XVII, 534; St. Jerome, "Ep. ad Paul" in LIII, 8; Rufinus, "In symbol.", xlv sq.; St. Chrysostom (Ps. Chrysostom), "Fragm. in libr. Job" in P. G., LXIV, 619; St. Peter Chrysologus, serm. 103, 118; "Apost. Constit.", VII, xli; St. Augustine "Enchirid.", 84; Idem, "De civit. Dei", XX, xx; Theodoret, "De provident.", or. ix; "Hist. eccl.", I, iii.

The general resurrection can hardly be proved from reason, though we may show its congruity.

- a.. As the soul has a natural propensity to the body, its perpetual separation from the body would seem unnatural.
- b.. As the body is the partner of the soul's crimes, and the companion of her virtues, the justice of God seems to demand that the body be the sharer in the soul's punishment and reward.
- c.. As the soul separated from the body is naturally imperfect, the consummation of its happiness, replete with every good, seems to demand the resurrection of the body.

The first of these reasons appears to be urged by Christ Himself in Matt., xxii, 23; the second reminds one of the words of St. Paul, I Cor., xv, 19, and II Thess., i, 4. Besides urging the foregoing arguments, the Fathers appeal also to certain analogies found in revelation and in nature itself, e.g. Jonas in the whale's belly, the three children in the fiery furnace, Daniel in the lions' den, the carrying away of Henoah and Elias, the raising of the dead, the blossoming of Aaron's rod, the preservation of the garments of the Israelites in the desert, the grain of seed dying and springing up again, the egg, the season of the year, the succession of day and night. Many pictures of early Christian art express these analogies. But in spite of the foregoing congruities, theologians more generally incline to the opinion that in the state of pure nature there would have been no resurrection of the body.

B. CHARACTERISTICS OF THE RISEN BODY

All shall rise from the dead in their own, in their entire, and in immortal bodies; but the good shall rise to the resurrection of life, the wicked to the resurrection of Judgment. It would destroy the very idea of resurrection, if the dead were to rise in bodies not their own. Again, the resurrection, like the creation, is to be numbered amongst the principal works of God; hence, as at the creation all things are perfect from the hand of God, so at the resurrection all things must be perfectly restored by the same omnipotent hand. But there is a difference between the earthly and the risen body; for the risen bodies of both saints and sinners shall be invested with immortality. This admirable restoration of nature is the result of the glorious triumph of Christ over death as described in several texts of Sacred Scripture: Is., xxv, 8; Osee, xiii, 14; I Cor., xv, 26; Apoc., ii, 4. But while the just shall enjoy an endless felicity in the entirety of their restored members, the wicked "shall seek death, and shall not find it, shall desire to die, and death shall fly from them" (Apoc., ix, 6).

These three characteristics, identity, entirety, and immortality, will be common to the risen bodies of the just and the wicked. But the bodies of the saints shall be distinguished by four transcendent endowments, often called qualities.

a.. The first is "impassibility", which shall place them beyond the reach of pain and inconvenience. "It is sown", says the Apostle, " in

corruption, it shall rise in incorruption" (I Cor., xv, 42). The Schoolmen call this quality impassibility', not incorruption, so as to mark it as a peculiarity of the glorified body; the bodies of the damned will be incorruptible indeed, but not impassible; they shall be subject to heat and cold, and all manner of pain.

b.. The next quality is "brightness", or "glory", by which the bodies of the saints shall shine like the sun. "It is sown in dishonour," says the Apostle, "it shall rise in glory" (I Cor., xv, 43; cf. Matt., xiii, 43; xvii, 2; Phil., iii, 21). All the bodies of the saints shall be equally impassible, but they shall be endowed with different degrees of glory. According to St. Paul: "One is the glory of the sun, another the glory of the moon, another the glory of the stars. For star differeth from star in glory"(I Cor., xv, 41-42).

c.. The third quality is that of "agility", by which the body shall be freed from its slowness of motion, and endowed with the capability of moving with the utmost facility and quickness wherever the soul pleases. The Apostle says: "It is sown in weakness, it shall rise in power" (I Cor., xv, 43).

d.. The fourth quality is "subtlety", by which the body becomes subject to the absolute dominion of the soul. This is inferred from the words of the Apostle: "It is sown a natural body, it shall rise a spiritual body" (I Cor., xv, 44). The body participates in the soul's more perfect and spiritual life to such an extent that it becomes itself like a spirit. We see this quality exemplified in the fact that Christ passed through material objects.

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A.J. MAAS

Transcribed by Donald J. Boon

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**Survival of the Crucifixion: Traditions of Jesus
within Islam, Buddhism, Hinduism and Paganism**

James W. Deardorff
December, 1993; revised March, 1998

INTRODUCTION

The empty tomb on Easter morning and subsequent appearances of Jesus to his disciples and to a few others have provided some novelists, or writer-scholars, with incentive to explore the possibility of his survival of the

crucifixion. <http://www.proaxis.com/~deardorj/legends.htm> This incentive has been furthered by the lack of documented examples of resurrection other than that supposed for Jesus first by Paul and then by the early Christian church. Unknown to many, however, is that various independent scholars have also postulated that Jesus survived the crucifixion for the same reasons. Also not well known is how widespread and credible the traditions are that point to Jesus, after surviving the crucifixion, having traveled with a few others through Anatolia and thence eastward to northern India and the Kashmir region. Here these topics will be summarized and consolidated so that open-minded, questioning Christians can better explore the roots of their faith and understand how thoroughly Christian authorities over the centuries have ignored, suppressed and belittled the unthinkable evidence that could overturn their faith.

RESUSCITATION HYPOTHESES

Although the various Gospel accounts of Jesus' appearances to his disciples following the crucifixion contain a large number of inconsistencies and discrepancies, this is only to be expected if the Gospel writers, especially the first one, needed to edit an original account of Jesus having survived the crucifixion into an account in which he had appeared in a resurrected form. The various scholars' hypotheses will then vary due to the differing weights they may attach to the different Gospel accounts, and due to their differing religious backgrounds.

The Ahmadiyyas. This non-orthodox branch of Islam was founded in the 19th century by Hazrat Mirza Ghulam Ahmad of Qadian, Pakistan.

His [century-old book](#)

http://www.geocities.com/Athens/Delphi/1340/jesus_in_india.htm, available on line, provides the basics of their evidence and

understanding that Jesus survived the crucifixion. By now, their followers, several hundred thousand strong, are centered in London, Berlin and Los Angeles as well as in Pakistan. M. G. Ahmad carefully researched the traditions that support Jesus' trek across Asia; this prompted him and some scholarly followers to postulate how Jesus survived the crucifixion. Briefly, they posit that Jesus lapsed into a deep swoon while on the cross, that the spear thrust missed his heart, that he received medical attention while in the tomb, and that his exit from the tomb was aided by

Essenes. <<http://www.proaxis.com/~deardorj/legends.htm>> These are all plausible suppositions, except, it turns out, that Essenes were not in on it.

Underlying this and other survival hypotheses to be discussed is the knowledge that death on the cross was designed to be long in coming -- up to several days, while Jesus is said to have been taken down from the cross, with legs unbroken, relatively early on the same day. Further, it is often pointed out that Josephus has written of an instance in which he recognized three Jewish prisoners who had undergone crucifixion but had not yet died. He obtained permission from Titus to take them down from their crosses and administer aid; one of them

survived. <<http://www.proaxis.com/~deardorj/legends.htm>> The Ahmadiyya literature also points out that the "sign of Jonah" prophecy made by Jesus is better fulfilled if he had survived the entombment of three days and nights, since Jonah survived his experience within the interior of the "big fish."

The Ahmadiyyas' supposition that Essenes were involved in Jesus' recovery stems from their assumption that the "angels in white" in Jn 20:12 or the men (or man) in white in Lk 24:4 (or Mt 28:3, Mk 16:5 or Jn 20:12) were Essenes due to the belief that Essenes wore white garments. Of course, this is not consistent with the reactions of the reported witnesses to having seen non-human entities clad in dazzlingly white apparel.

Karl Bahrdt, ca. 1780. This scholar postulated, in brief, that Jesus survived a feigned death, with Luke the physician having supplied drugs to Jesus beforehand. Jesus was supposed to have been an Essene, and so also Joseph of Arimathea, who resuscitated him. On the third day, when Jesus came forth, his appearance scared the guards away and he later lived in seclusion with the

Essenes. <<http://www.proaxis.com/~deardorj/legends.htm>> Here there

is much to criticize -- all, in fact, but the likelihood that Joseph of Arimathea was involved in Jesus' recovery.

<http://www.proaxis.com/~deardorj/legends.htm>

Karl Venturini, ca. 1800. Venturini proposed that Jesus had been associated with a secret society, which wished him to become a spiritual Messiah. Though they had not expected him to survive the crucifixion, one of them, dressed in white, heard some groans from inside the tomb. He frightened away the guards and retrieved Jesus, who used up his remaining energy in appearing to his disciples and afterwards retired permanently from sight. This appears even more far-fetched than Bahrtdt's version.

Heinrich Paulus, 1828. A more detailed version was postulated by Paulus. Preceding the earthquake of Mt 27:51, dense fumes were supposedly released that caused difficulty in breathing and made it appear that Jesus had prematurely died on the cross. Somehow Jesus survived in the tomb without any help. Similar to Venturini's hypothesis, Paulus had Jesus use up his remaining energy in the following days and then disappear into an orographic cloud at the end of his final meeting with the disciples on the mountain -- the Ascension. Again, however, there is no shortage of problems with this scenario. <http://www.proaxis.com/~deardorj/legends.htm>

Nevertheless, the father of modern theology, F.E.D. Schleiermacher, endorsed a form of this hypothesis in the early 1830s. <http://www.proaxis.com/~deardorj/legends.htm>

Ernest Brougham Docker, 1920. He proposed that on the cross, Jesus had lapsed into a state of catalepsy or self-hypnosis, that the spear thrust to the side may not have occurred, and that within the tomb Jesus was aided by Joseph and Nicodemus. Later, the gardener of Jn 20:15 supplied Jesus with fresh clothing. <http://www.proaxis.com/~deardorj/legends.htm> Docker was a district court judge as well as a student of the New Testament, and offered an interesting discussion of how the bystanders at the crucifixion may have mistakenly thought Jesus dead while Joseph discovered otherwise. This scenario seems more realistic than the preceding ones, though surely Joseph or Nicodemus could have supplied the clothing.

Robert Graves & Joshua Podro, 1957. These two independent scholars pictured Jesus as having collapsed into a coma while on the cross, with the spear thrust having failed to pierce the lungs. The outflow of "blood

and water" (Jn 19:34; Mt 27:49b, according to manuscripts "B" and "Aleph") indicated to them that Jesus had not died, a point also made by the Ahmadiyyas. One of the guards at the tomb is supposed to have entered in order to steal the valuable ointment smeared on the shroud in which Jesus had been wrapped; finding him alive, he informed their sergeant, who let Jesus go. That evening Jesus showed himself to the disciples, but from then on became a wanderer, living in hiding. <http://www.proaxis.com/~deardorj/legends.htm> I find this guard scenario much less realistic than that of secret medical attention supplied within the tomb.

The Talmud of Jmmanuel (TJ), 1978. This is the document discovered in 1963, translated in substantial part from Aramaic into German by 1974, and destroyed in June of that year due to its heresies for Christianity and Judaism.¹⁰

<http://www.proaxis.com/~deardorj/legends.htm> Because of its heresies, lack of extant originals, and association with a UFO contactee case, scholars cannot deal with it seriously and it remains largely unknown to them. In it, Jmmanuel (Jesus) lapses into a very deep trance, probably samadhi,¹¹

<http://www.proaxis.com/~deardorj/legends.htm> on the cross and only Joseph of Arimathea notices he is not dead after the spear thrust. After enshrouding him and carrying him to his tomb, he quickly seeks out Jmmanuel's Hindu friends for help because of their skill in medicines and herbs. They utilize a second entrance to the tomb known only to Joseph so as not to arouse suspicions, especially after the guards are posted. After three days (not just two) Jmmanuel is helped out very early in the morning via the secret entrance and continues to recover rapidly. Just how he was able to recover so quickly is not explained, and one is left with the possibility that his miraculous healing powers could be applied not just to others but to a considerable extent to himself as well. During his subsequent meetings with his disciples, he warned them not to disclose his survival to others. This may well be history, not hypothesis, but for those who insist that the TJ must be a literary hoax, it is the hypothesis of an unknown hoaxer.

J.D.M. Derrett, 1982. Prof. Derrett allowed that Jesus had lapsed into unconsciousness or a self-induced trance during the crucifixion, being taken for dead by bystanders and by the Roman soldier who stabbed him in the side. He chose the likelihood that his heart and lungs had not been pierced, and assumed that Jesus subsequently self-revived within

the tomb. Basing other assumptions on the Gospel of Mark, he inferred that no Roman guard had been set, but rather that the young man of Mk 16:5 (and possibly of Mk 14:51) was a self-appointed guard. Some noise inside the tomb supposedly caused this guard to check inside, whence he found Jesus in poor shape but alive. Jesus is assumed to have muttered a few things to this guard to relay to the disciples, and died not long afterwards from his injuries. His disciples supposedly cremated his body because they considered him the Paschal Lamb, meant to be sacrificed.¹²

<http://www.proaxis.com/~deardorj/legends.htm> A half dozen objections to this hypothesis have been raised.¹³

<http://www.proaxis.com/~deardorj/legends.htm>

B. Thiering. This scholar pictured Jesus as having been given snake poison on the cross, which rendered him unconscious. He recovered from this and was helped to escape from the tomb by friends.

Ultimately he settled in Rome.¹⁴

<http://www.proaxis.com/~deardorj/legends.htm> I have been unable to see any merit in her arguments: she pictures the entire ministry of Jesus as presented in the Gospels as actually having occurred in the Dead Sea area rather than the Sea-of-Galilee area, including the fishing industry. She regards nearly everything in the Gospels as a coded version of what actually occurred, with the code to be deciphered by the "peshet" method. Her use of this method makes repeated use of the Dead Sea Scrolls in which she interprets the "Wicked Priest" as Jesus. I am disappointed to have had to dismiss her work as summarily as have the "mainstream" scholars.

ATTEMPTED DEBUNKINGS

The resuscitation hypotheses up until 1835 were roundly rejected by David Friedrich Strauss, and for nearly a century this put a damper on further such hypotheses. His criticism was largely in the form of ridicule over the idea of a "half-dead" being creeping out from the grave "weak and ill," yet managing to instill in his disciples "the impression that he was a Conqueror over death and the grave."¹⁵

<http://www.proaxis.com/~deardorj/legends.htm> He assumed Jesus had not received any medical attention while in the tomb. However, several of the survival hypotheses do postulate such medical assistance, and are therefore immune to Strauss's objection. Yet, his rejection is sometimes referred to by scholars even today, when necessary, as if it

were germane. Strauss was the first scholar to emphasize the possibility that after the crucifixion the disciples so longed for their Lord that they invented the appearances. Thus he simply dismissed all testimony that Jesus had risen from the grave and physically appeared to his disciples by pointing out inconsistencies in the various accounts, rather than exploring reasons why such inconsistencies would be expected.

A prominent medical-theological treatment of the crucifixion concluded that if Jesus did not die on the cross, he must surely have died from the spear thrust. [16 <http://www.proaxis.com/~deardorj/legends.htm>](http://www.proaxis.com/~deardorj/legends.htm)

However, this conclusion was based most noticeably on pre-1980 analyses of the Shroud of Turin and the assumption that this shroud is genuine. The Ahmadiyyas have also utilized the Shroud of Turin to support their opposing conclusion, but they could point to the outflow of "blood and water" from the spear thrust as indicating that Jesus had not died, as from asphyxiation, prior to that action. Although the authors of this attempted debunking were Christians, and must have believed in the reality of Jesus' miraculous cures of lepers, the lame, blind, deaf and other afflicted, they never questioned whether his spiritual healing power might not extend to his own body.

In summary, if the most logical components from the various resuscitation hypotheses are synthesized in a consistent manner, it is seen that one like the TJ's story could emerge that survives the objections of attempted debunkers. This is especially true if Jesus' healing powers could have applied also to himself. This may seem more plausible to many than that the Gospels' stories of Jesus' post-crucifixion appearances were totally made up and that resurrection is a viable concept. Hence it is reasonable to treat seriously the traditions indicating that in years following the crucifixion, Jesus and a small party traveled about Anatolia and western Asia.

Some of these Jesus-in-Asia traditions to be presented have been pseudo-debunked by the Swedish scholar, Per Beskow. [17](http://www.proaxis.com/~deardorj/legends.htm)

[Careful inspection of one topic, however, indicates that his tactic was to ignore the most pertinent pieces of evidence, distort much of the rest, emphasize irrelevancies, attempt to discredit persons who provide first- or second-hand information, and otherwise treat the evidence piece-meal rather than cumulatively.](http://www.proaxis.com/~deardorj/legends.htm) [18 <http://www.proaxis.com/~deardorj/legends.htm>](http://www.proaxis.com/~deardorj/legends.htm)

Beskow dismissed the Jesus-in-Asia traditions primarily by calling them legends whose Asian sources "do not carry any weight at all." [19](http://www.proaxis.com/~deardorj/legends.htm)

<http://www.proaxis.com/~deardorj/legends.htm> This appears to be a cultural put-down induced by theological commitment or fear that serious investigation of the topic would be loathsome in the eyes of Western colleagues.

TRADITIONS OF JESUS' TRAVELS AFTER THE CRUCIFIXION

Jesus within Islam. Certain Islamic historians felt no need to suppress these traditions, since to them Jesus was only a mortal prophet, albeit a very important one. Moreover, Islam in general doesn't even believe that Jesus underwent the crucifixion, but that someone substituted for him on the cross. The Persian historian Mir Kawand names a site close to Damascus called Maqam-Isa or Mayuam-i-isa, which means "the place where Jesus lived," according to independent scholar Holger Kersten.²⁰ <http://www.proaxis.com/~deardorj/legends.htm> Kersten traveled through western Asia in 1973-74 visiting various libraries and researching these traditions. The *Talmud of Immanuel* confirms this by indicating that Immanuel (alias Jesus) went to Damascus following his final meeting with his disciples, and lived there incognito for two years.²¹ <http://www.proaxis.com/~deardorj/legends.htm> This included the time when Saul (Paul) had his conversion experience on the road to Damascus southwest of the city.²²

<http://www.proaxis.com/~deardorj/paulconv.htm>

Three of these historians wrote of Jesus, Mary and Thomas (Judas-Thomas, presumably) having traveled to Nisibis (Nasibain) near Edessa, now Urfa in southeast Turkey just north of Syria, where Jesus preached to the king. Mir Muhammad bin Khawand Shah Ibn-i-Muhammad, also known as Mir Khawand bin Badshah, in 1417 wrote of the journey of Jesus away from the Jerusalem area to Nisibis. In the former, Jesus and Mary first go to Syria; in the latter, they and Thomas have some confrontations with the king of Nisibis.²³

<http://www.proaxis.com/~deardorj/legends.htm>

Faqir Muhammad, around 1830, wrote, among other things, that on these journeys Jesus and Mary traveled on foot, and that Jesus preached to the king of Nisibis. ²⁴

<http://www.proaxis.com/~deardorj/legends.htm> According to Holger Kersten, the story is prefixed by this king having been ill and having requested Jesus to come and cure him; Jesus sent Thomas on ahead, and Thomas cured the king by the time Jesus and the rest of his party arrived. ²⁵ <http://www.proaxis.com/~deardorj/legends.htm>

Iman Abu Jaffar Muhammad bin Jarir at-Tabri in 1880 wrote of the tradition that Jesus and party had to depart quickly from Nisibis because of hostility that had arisen against them there. 26

<http://www.proaxis.com/~deardorj/legends.htm>

In most of the Muslim writings Jesus is referred to as Yuz Asaf. The meaning and derivation of the name is uncertain. "Yuz" is thought by some to mean either "Jesus" or "leader," and "Asaf" to refer to those he cured of leprosy. Thus one interpretation is that Yuz Asaf means "leader of those he cured of leprosy." 27

<http://www.proaxis.com/~deardorj/legends.htm> An alternate interpretation will be supplied later. It is understandable that in his travels after the crucifixion Jesus would have remained incognito, especially for the first few years and in Anatolia, and when necessary have supplied a name for himself other than what he had been known by in Palestine. However, ample descriptions are supplied that leave no doubt that the man known as Yuz Asaf is to be identified with Jesus -- his close association with his mother Mary and with Thomas is one of these.

In Iranian traditions recounted by Agha Mustafai, it is said that Yuz Asaf came there from the west and preached, causing many to believe in him. 28 <http://www.proaxis.com/~deardorj/legends.htm> His teachings are said to have been similar to those of Jesus. However, if he had taught reincarnation, 29

<http://www.proaxis.com/~deardorj/legends.htm> one would not expect that his surmised teachings on that subject would have been carried along by Muslim writers any more than by Christian writers, since Islam also does not embrace the concept of reincarnation.

Within northwest Afghanistan, centered in the city of Herat, an explorer of Sufism, O. M. Burke, came across a sect of some 1000 people who are devotees of Yuz Asaf, whom they also knew as Isa, son of Maryam. 30 <http://www.proaxis.com/~deardorj/legends.htm> Their tradition includes Isa, the prophet from Israel, having escaped the cross, traveled to India and settled in Kashmir. He was (again) regarded as possessing the power to perform miracles. The sect's leader at that time (1976), Abba Yahiyya (Father John), could recite the names of the succession of their leaders and teachers back through nearly 60 generations to Yuz Asaf himself, when he had stopped off there along the Silk Road. Although Burke referred to this sect as Christians, since

they revere Isa as the Son of God, they cannot of course be considered Christian in any orthodox sense.

Within the Holy Quran there are many verses discussing Jesus, and often Mary also, but these either deal with the Nativity or his Palestinian ministry, or contain no definite geographical and temporal context. A possible exception, however, is Surah 23:50, a translation of which reads:

And We made the son of Marium [Mary] and his mother a sign,
and We gave them a shelter on a lofty ground having meadows
and springs.

Since Israel is not noted for having lofty ground with meadows and springs, this verse suggests a different location, and if shelter was needed, it indicates they were traveling.

In eastern Pakistan, next to Kashmir, there is further support for these traditions. There one may find the tomb of Mary on a hilltop just outside a small town called Murree or Mari. The grave is called *Mai Mari da Asthan*, which means "the final resting place of Mother Mary."³¹ <http://www.proaxis.com/~deardorj/legends.htm> Her tomb faces east-west, as in Jewish custom, rather than north-south as in Islamic custom. Thus some evidence does exist to indicate that Mary made it at least this far in their travels and had traversed with Jesus over much beautiful high country of Afghanistan and Pakistan, in support of the Quran verse that hints at this.

Farther east, in Kashmir near Srinagar, there is a monument in stone: the Throne of Solomon, bearing four inscriptions, the last two of which are most interesting though they were mutilated following the conquest of Kashmir by the Sikhs in 1819. However, they were described by the early Muslim historian of Kashmir, Mulla Nadiri, in 1413. An English translation of his Persian script is:

At this time Yuz Asaf proclaimed his prophethood. Year fifty and four [in the reign of King Gopadatta].

and

He is Jesus, prophet of the Children of Israel.³²
<http://www.proaxis.com/~deardorj/legends.htm>

The correct dating and significance of the year 54 is not clear. The year has been placed within the reign of King Gopadatta at 107 C.E. by Kersten, and at 78 C.E. by Professor Fida Hassnain, director of archives and antiquities in Kashmir.³³

<http://www.proaxis.com/~deardorj/legends.htm>

Some written and oral tradition assert that after death Yuz Asaf was entombed in the old section of Srinagar, in Anzimar in the Khanjar (or Khaniyar) quarter.³⁴

<http://www.proaxis.com/~deardorj/legends.htm> Tradition has it that the tomb, about which a small building was long ago constructed, has been under constant watch by a succession of guardians ever since Yuz Asaf's supposed burial there. On the floor next to his grave it was noted by Hassnain that much candle-wax had accumulated, and upon carefully scraping it away at one corner of the tombstone, he discovered a crucifix and a rosary that had long been embedded. In addition, he found two footprints carved into the stone underneath the candle wax and mud with the marking of a crucifixion scar etched into each print.³⁵ <http://www.proaxis.com/~deardorj/legends.htm> This is further indication that Yuz Asaf was known to have been Jesus Christ. Each year hundreds of Muslims, Christians, Hindus and Buddhists visit the tomb (known as Rozabal, or the "sacred tomb") to pay homage -- a nearly unique example of a unity within world religions.

There is a report, however, that Yuz Asaf was actually buried not at the noted tomb site in Srinagar's old town, but on a hillside not far away. This comes from the UFO contactee Eduard Meier, the co-discoverer and editor of the *Talmud of Immanuel*, who in turn received the information from one of his contacting extraterrestrials. Those who have studied this document and realize its genuineness may wish to treat this report seriously.

Within the ruins of the Indian city of Fatehpur Sikri, located some 15 miles west of Agra, there is an interesting inscription on a wall. It was emplaced on the portal of a mosque around 1601 by the emperor Akbar the Great, a Muslim convert of sorts, and reads,

So said Jesus on whom be peace! The world is a bridge; pass over it but build no house upon it.³⁶

<http://www.proaxis.com/~deardorj/legends.htm>

The meaning seems to be to keep in mind that the permanent home of the human spirit is not of this world, but with the Universal Consciousness, or God. Since the saying is not in the Gospels, it is consistent with having been uttered by Yuz Asaf. Its spiritual nature is fully consistent with the content of the previously mentioned *Talmud of Immanuel*. Possibly, verse 42 of the Gospel of Thomas is based upon this saying, for it reads, "Become passers-by" or "Become, as you pass by."

It may be speculated that one of those who accompanied Yuz Asaf alias Jesus on his travels was a disciple-writer who continued to document Jesus' experiences and ministry until his own death, after which the writings ceased or were taken over by another until Jesus' death. If so, Jesus may have made provision for someone to carry a copy of the writings back on the Silk Road to the Palestinian area soon after his death, where it eventually came into the custody of the compiler of the Gospel of Matthew.³⁷

<http://www.proaxis.com/~deardorj/legends.htm> This then would have been the source that Bishop Papias had learned about and referred to as the *Logia*, and the reason for the Gospels having come into existence relatively late.³⁸

<http://www.proaxis.com/~deardorj/legends.htm> A supportive legend behind this speculation comes from the mention by Eusebius that the well known Alexandrian, Pantaenus (late second century), reported that during his trip to India he had learned that one of the twelve apostles had earlier preached there to the Indians from a Hebraic writing identified as the Gospel of Matthew. ³⁹

<http://www.proaxis.com/~deardorj/legends.htm> Since the Gospels as they became known by mid-2nd century had not yet been created while any apostles were still alive, this suggests that the preaching Pantaenus reported had come from a pre-Matthean source written in India -- the *Logia*. The early parts of these *Logia* would have resembled the Gospel of Matthew. ⁴⁰ <http://www.proaxis.com/~deardorj/legends.htm>

The first Muslim writer known to have included the tradition of Jesus having traveled to India in his youth with the tradition that he, as Yuz Asaf, had traveled in southwest Asia in the latter half of the first century, was the 10th-century historian, Shaikh Al-Said. ⁴¹

<http://www.proaxis.com/~deardorj/legends.htm>

Jesus within Hinduism. The Hindu literature known as the *Bhavishya Maha Purana* contains some ten verses indicating that Jesus was in India/Kashmir during the reign of King Shalivahan, which has been placed within 39 to 50 C.E. The king is said to have encountered Jesus at a spot about 10 miles northeast of Srinagar where there is a sulfur spring.⁴² <http://www.proaxis.com/~deardorj/legends.htm> During the king's inquiries of who he was, Jesus is reported to have replied that he was Yusashaphat (interpreted as Yuz Asaf by K. N. Ahmad), and that he had become known as Isa Masih (Jesus the Messiah). K. N. Ahmad dates the writing of these verses to 115 C.E. Although details of the

verses may indicate that they received later editing, their basic theme -- that Christianity's Jesus had been there in Kashmir -- persists.

Much more recent is a statement by Jawarhar Nehru in a 1932 letter to his daughter, Indira, where he wrote, "All over Central Asia, in Kashmir and Ladakh and Tibet and even farther north, there is a strong belief that Jesus or Isa travelled about there. Some people believed that he visited India also."⁴³

<http://www.proaxis.com/~deardorj/legends.htm> This testifies to the persistence of the oral tradition.

Jesus within Buddhism. It has been suggested that within Mahayana Buddhism the legendary Bodhisattva Avalokitesvara developed out of Jesus having been in Tibet and India. ⁴⁴

<http://www.proaxis.com/~deardorj/legends.htm> For one reason, this bodhisattva is thought to have reached his earliest known (legendary) form around the second or third century C.E.,⁴⁵

<http://www.proaxis.com/~deardorj/legends.htm> which timing is appropriate for the hypothesis. For another reason, the book by Professor John Holt of Bowdoin College, Brunswick, Maine, suggests that the origins of the Avalokitesvara cult was in northwest India in the second century.⁴⁶ <http://www.proaxis.com/~deardorj/legends.htm>

Although Avalokitesvara is mentioned in the Buddhist writing called the *Heart Sutra*, that writing, according to Holt (personal communication), is a "prajnaparamita" text that probably dates to either the 1st or 2nd century CE and is therefore somewhat later than the more likely origins of Avalokitesvara. The name itself, however, may stem from "avalokana," an abstracted mythologization of the compassionate view of the world that the Buddha takes just after his enlightenment experience.

For still another reason, given the impact that Jesus made in just a couple years of ministry in Palestine, due in no small measure to his ability to work miracles and prophesy, it would not be surprising that his further ministry during many post-crucifixion years of traveling outside of Palestine under different names would also have received acclaim, at least within oral tradition. The Bodhisattva Avalokitesvara is a candidate for this because he became the top one or two of all the numerous bodhisattvas in importance and degree of respect and worship accorded. ⁴⁷

<http://www.proaxis.com/~deardorj/legends.htm> Within Buddhist

thought, the successive Dalai Lamas are believed to be reincarnations of Avalokitesvara.

However, the primary reason is that he is sometimes portrayed with a small circular marking on the hand, which could represent a crucifixion scar.⁴⁸ <http://www.proaxis.com/~deardorj/legends.htm> A similar marking, usually interpreted as the Buddhist wheel of life, is mentioned in a third-century writing to be imprinted upon the soles of his feet.⁴⁹ <http://www.proaxis.com/~deardorj/legends.htm>

The mythologization of Avalokitesvara became so extensive that he has even been considered the creator of the world. ⁵⁰

<http://www.proaxis.com/~deardorj/legends.htm> This is surprisingly similar to Jesus being professed as part of the Godhead who was with God the Creator from the beginning. If both creation stories are considered to be myths, however, it is not surprising that the same man could have inspired both.

If Avalokitesvara should indeed be another name for Jesus, it is an example of a legend as yet known to only a few. But if it was known to be more than just a legend to some Buddhists at the time the name Avalokitesvara was bestowed, it is understandable that they would not wish to antagonize Christians by insisting Buddhism call him by the same name that Christianity uses.

Kersten has advanced the idea that the name Yuz Asaf may actually have a Buddhist derivation. If Jesus had called himself a knower of truth, or others had recognized this, then in Sanskrit this phrase would be "bodhi sattva," or "budasaf" essentially, Kersten suggests.⁵¹ <http://www.proaxis.com/~deardorj/legends.htm> He pointed out that in Syrian, Arabic and Persian, "Budasaf" would read like "Judasaf" or "Yudasaf," since their letters J and B are nearly identical. The latter two words are sufficiently similar, then, that this could be the real etymology behind "Yuz Asaf."

The tradition that Jesus, under whatever name, had been to the Kashmir region in years after the crucifixion is known to some of the lamas. In 1922 Swami Abhedananda, a well known monk and disciple of Sri Ramakrishna of the Barahanagar Temple, near Calcutta, learned of this from a lama at Himis monastery, Ladakh.⁵² <http://www.proaxis.com/~deardorj/legends.htm>

Jesus within Roman paganism. It is only natural to inquire if a similar legend might not exist within Roman paganism that would point back to Jesus as having been its source. There is indeed such a legend -- the

man known as Apollonius of Tyana, but he was more than a legend. He is supposed to have been born around the commencement of the Christian era and to have died in 97 C.E. His life is described within a biography written in Rome by the Greek philosopher, Philostratus, around 220 C.E.⁵³ <http://www.proaxis.com/~deardorj/legends.htm> If the many other traditions that collectively indicate Jesus had spent years traveling after the crucifixion contain truth, it would not be surprising that he would sometimes have been confronted by a Roman official and, to be safe, would have needed to supply himself with an alias. A Greek name with pagan overtones -- Apollonius -- would no doubt have made it easier for him to travel within Anatolia and elsewhere within the Roman empire.

In his biography Philostratus credits Apollonius with the same kinds of powers that the Gospels depict for Jesus: healing, casting out of spirits, and foreknowledge. One of his healings was particularly suggestive, where he brought a girl back to life who had recently died, very much as with the daughter of Jairus in Matthew 9:23-25. And at one point Philostratus went so far as to allude that Apollonius would actually be alive when his followers would instead think he had risen from the dead.⁵⁴ <http://www.proaxis.com/~deardorj/legends.htm> The parallels <http://www.apollonius.net/bernard2e.html> between the life and character of Apollonius and those of Jesus are much too numerous to ignore

This connection between Apollonius and Jesus did not go unnoticed by influential Christians. Eusebius knew of it, and denounced those who wrote favorably about this Apollonius.⁵⁵ <http://www.proaxis.com/~deardorj/legends.htm> Fortunately, however, Philostratus's biography managed to survive, though an antecedent's books about Apollonius did not.⁵⁶ <http://www.proaxis.com/~deardorj/legends.htm> It would seem that Philostratus had taken care to ensure in his book that any connection between Apollonius and Jesus would be indirect and not too apparent. For example, he never mentioned Apollonius as residing in, or traveling to, the land of Israel.

On his journeys Apollonius is said to have been accompanied not only by his primary companion, Damis, but by "two servants he had inherited" -- one a shorthand writer and the other a secretary.⁵⁷ <http://www.proaxis.com/~deardorj/legends.htm> These two could easily correspond to Jesus' disciple-writer and to his mother,

respectively. Damis would then correspond to Judas-Thomas, and we may note a similarity between Thomas's Greek name "Didymus" and "Damis."

On one trip Apollonius and his party travel to Babylon, where the king had fallen ill. Apollonius attends him and brings about his recovery.⁵⁸ <http://www.proaxis.com/~deardorj/legends.htm> This story is somewhat reminiscent of Faqir Muhhamad's account of Thomas having cured the king of Nisibis, if allowance is made for Philostratus to have altered the geographical location.

On a longer trip eastward to Taxila (in Pakistan) Apollonius and his party are said to have visited King Gundaphorus for several days.⁵⁹ <http://www.proaxis.com/~deardorj/legends.htm> That visit is reminiscent of one to the same king reported in the *Acts of Thomas*.⁶⁰ <http://www.proaxis.com/~deardorj/legends.htm> However, Philostratus found much to say about Apollonius and Damis there while in the *Acts of Thomas* Jesus only puts in fleeting appearances at King Gundaphorus's court, as if its writer knew that were he to write anything further it would target his Gnostic document for oblivion by defenders of Christianity.

Analysts have had great difficulty with the biography of Apollonius in trying to determine which parts are historical and which are fiction.

However, Apollonius himself was definitely a historical figure:

- (a) four books by one Moeragnes that did not survive were written about him and mentioned by Origen;
- (b) Apollonius is mentioned by the Greek rhetorician Lucian; and
- (c) the historian Cassius Dio mentions him twice in contexts of having been a real figure.⁶¹ <http://www.proaxis.com/~deardorj/legends.htm>

Just how and where Apollonius of Tyana died is left vague by Philostratus. He has no known tomb or burial site, despite his historical importance, which is consistent with his name being a pseudonym and/or his burial place being outside of the Roman empire.

There is an [Apollonius website](http://www.apollonius.net/) <http://www.apollonius.net/> devoted entirely to this man and the problem he posed for early Christianity. The tradition relayed by Irenaeus. Besides the clues within the Gospels of the empty tomb and post-entombment appearances, which are consistent with Jesus later having had an extended ministry outside of Palestine, a tradition consistent with this was made known by a prominent church father. Irenaeus, who lived until about 180 C.E., and

who was a staunch quasher of heresies, nevertheless attested to a tradition that elders of the church who were conversant with the disciple John in Asia had affirmed that Jesus had reached old age -- beyond 50.⁶² <<http://www.proaxis.com/~deardorj/legends.htm>> The crux of it reads as follows:

On completing His thirtieth year He suffered, being in fact still a young man, and who had by no means attained to advanced age. Now, that the first stage of early life embraces thirty years, and that this extends onwards to the fortieth year, every one will admit; but from the fortieth and fiftieth year a man begins to decline towards old age, which our Lord possessed while He still fulfilled the office of a Teacher, even as the Gospel and all the elders testify; those who were conversant in Asia with John, the disciple of the Lord [affirming] that John conveyed to them that information. And he remained among them up to the time of Trajan. Some of them, moreover, saw not only John, but the other apostles also, and heard the very same account as to the [validity of] the statement.

"The statement" or "information" evidently is the assertion that Jesus had reached the stage of old age and was still teaching, and was no longer the young 30 he had been at the crucifixion (suffering). The clause "even as the Gospel and all the elders testify" reads like a scribal addition that attempts to explain this away in reference to Jn 8:56, which strangely implies that Jesus, during his Palestinian ministry, was nearing the age of 50. The preceding paragraph, not reproduced here, also reads like a scribal addition designed to ameliorate the impact of the above statement; it talks of Jesus, during his ministry, being of all ages, and taking on the age of each person who was listening to him. It is not known how Irenaeus assimilated this information into his belief in the resurrection. The editors of *Ante-Nicene Fathers* called it an "extraordinary assertion," but could only imply that Irenaeus had somehow been grossly in error. It should be clear that if the statement had merely involved the fact that Jesus had been a teacher for one, two or three years until the day he was crucified, this is not anything Irenaeus would have bothered to report, as Christians already knew that. The mention of Asia in the above report probably refers to Asia Minor, or Anatolia.

SUMMARY

Many of the foregoing legends and traditions may be unfamiliar to the reader because they *have* been systematically ignored and suppressed in the West. However, when they are viewed together as a whole, we see a very consistent picture that is trying to tell us that Christianity at a very early stage was directed onto the wrong path, first by Paul and then by the early churches which Paul so heavily influenced. The right path instead tells us much more of just how remarkable this man, known to us today as Jesus, actually was. This is not to say that some fraction of the strange tales one may read about Jesus are not fictions, but to say that a holistic perception is needed to separate probable fact from probable fiction. The practice of assuming that any tradition is false if it conflicts with one's own particular theological commitment, without having first carefully examined it with a truly open mind and in a comprehensive manner, cannot be condoned within true scholarship or true science.

ENDNOTES

1. See, e.g., Hugh J. Schonfield, *The Passover Plot* (London: Hutchinson, 1966); Donovan Joyce, *The Jesus Scroll* (Melbourne, Australia: Ferret Books, 1972); and Michael Baigent, Richard Leigh and Henry Lincoln, *Holy Blood, Holy Grail* (New York: Harper and Row, 1983) 357.
2. See Khwaja Nazir Ahmad, *Jesus in Heaven on Earth*, (Woking, England: Woking Muslim Mission & Literary Trust, 1952) 196-199. See also several relevant articles in *Truth about the Crucifixion* (London: The London Mosque, 1978).
3. See, for example, David Friedrich Strauss, *A New Life of Jesus*, vol. 1, 2nd Ed. (London: Williams and Norgate, 1879) 410-411.
4. See William Lane Craig, *The Historical Argument for the Resurrection of Jesus during the Deist Controversy* (Lewiston, NY: Edwin Mellen Press, 1985) 392-393.
5. James W. Deardorff, *Jesus in India* (Bethesda, MD, International Scholars Publications (University Press of America), 1994) 138-139.
6. *Ibid.*, 140-141.
7. Craig, *Historical Argument*, 400. See also Karl Barth, *The Theology of Schleiermacher*, ed. D. Ritschl, transl. G. Bromiley (Grand Rapids, MI: Eerdmans, 1982) 101-102.
8. E. B. Docker, *If Jesus Did Not Die on the Cross: A Study of the Evidence* (London: Robert Scott, 1920), 20-21, 32-33, 49.

9. R. Graves and J. Podro, *Jesus in Rome* (London: Cassell & Co., 1957) 12-13. Much of the book is devoted to the possibility that Jesus traveled to Rome after the crucifixion, which I find to be based on only one very shaky bit of evidence.

10. *Talmud Jmmanuel*, ed. Eduard A. Meier (Schmidrüti, Switzerland: 1978). See also the present web site: <http://www.tjresearch.info>.

11. Samadhi is a trance-state of meditation whose deepest form is the same as being "out-of-body." According to Janet Lee Mitchell, *Out of Body Experiences: A Handbook* (New York: Ballantine Books, 1981) either exhaustion, a life-threatening situation or the purposeful intent of an experienced practitioner can induce it. In this state, no pain inflicted upon the body is felt, not even from a spear thrust, and it is not surprising that both the soldiers involved in the crucifixion and the bystanders would have mistakenly thought Jmmanuel was dead. Even one of the Gospels indicates that this sort of thing can happen (Mk 9:26): the onlookers of Jesus' healing of the paroxysmic boy thought he was dead after he had become "like a corpse," until Jesus took his hand.

Samadhi is known within Hinduism and Buddhism, and Jesus would likely have learned how to access this state if the "lost years" of his youth had been spent in India. See Deardorff, *Jesus in India*, 101-134; and Elizabeth Clare Prophet, *The Lost Years of Jesus* (Livingston, MT: Summit University Press, 1984). The TJ briefly indicates that Jmmanuel (Jesus) had indeed been to India during his youth, had learned much from the Masters there, and had acquired Hindu friends during or after his return.

12. J.D.M. Derrett, *The Anastasis: The Resurrection of Jesus as an Historical Event* (Shipston-on-Stour, England: P. Drinkwater, 1982).

13. Deardorff, *Jesus in India*, 148.

14. Barbara Thiering, *Jesus and the Riddle of the Dead Sea Scrolls* (San Francisco: HarperSanFrancisco, 1992), 116.

15. Strauss, *New Life of Jesus*, vol. 1, 412.

16. W. D. Edwards, Wesley J. Gabel, and Floyd E. Hosmer, "On the physical death of Jesus," *J. American Medical Assn.* 255 (1986) 1455-1463.

17. Per Beskow, *Strange Tales about Jesus: A survey of Unfamiliar Gospels* (Philadelphia: Fortress Press, 1985).

18. Deardorff, *Jesus in India*, 112-134.

19. Beskow, *Strange Tales*, 8.

20. Holger Kersten, *Jesus Lived in India*, transl. T. Woods-Czisch (Longmead, Shaftesbury, Dorset, England: Element Book, 1986) 177-178.
21. *The Talmud of Immanuel*, Eduard Meier, ed. (Mill Spring, NC: Wild Flower Press, 2001) 237.
22. This links to <http://www.tjresearch.info/paulconv.htm>.
23. Mir Khawand bin Badshah, *Rauza-tus-Safa (The Gardens of Purity)* (Bombay: reprinted in 1852) vol. 1 of 7, 132-136. See also the secondary source: K. N. Ahmad, *Jesus in Heaven on Earth*, 358, 404.
24. *Jami-ut-Tawarikh*, vol. 2 (1836) p. 81.
25. Kersten, *Jesus Lived in India*, 179. This story may lie at the root of the legend of the letter from Jesus to Abgarus, king of Edessa, known to Eusebius in *EH* 1.13.
26. Abu Jaffar Muhammad bin Jarir at-Tabri, *Tafsir Ibn-i-Jarir at-Tabri (Jami al Bayan fi Tafsir-ul-Qur'an)* (Cairo: Kubr-ul-Mar'a Press, 1880) vol. 3, p. 197. See also K. N. Ahmad, *Jesus in Heaven on Earth*, 359, 392.
27. K. N. Ahmad, *Jesus in Heaven on Earth*, 359-360. See also Peter James, "Did Christ die in Kashmir?" *Islamic Rev.* 3 (Oct./Nov., 1983) 17.
28. Agha Mustafai, *Ahwali Ahalian-i-Paras* (Tehran:1868) 219. See K. N. Ahmad, *Jesus in Heaven on Earth*, 360, 404.
29. See Deardorff, *Jesus in India*, 22-35. There the evidence is presented indicating that Jesus had actually taught reincarnation, not resurrection.
30. Omar Michael Burke, *Among the Dervishes* (London: Octagon Press, 1976), 107.
31. Kersten, *Jesus Lived in India*, 186.
32. Mulla Nadiri, *Tarikh-i-Kashmir* (1413 manuscript in possession of Ghulam Mohy-ud-Din Wanchu, Srinagar) 69. See K. N. Ahmad, *Jesus in Heaven on Earth*, 369-370, 400. "Children of Israel" here refers to the Bani-Israel, those numerous residents of Kashmir, northern India and Afghanistan whose characteristics and culture appear to have derived from Semitic ancestry. Several researchers conclude that they represent parts of the ten lost tribes of ancient Israel; e.g., see George Moore, *The Lost Tribes* (London: Longman Green, 1861).
33. Kersten, *Jesus Lived in India*, 200; Fida Hassnain, *A Search for the Historical Jesus* (Bath, England: Gateway Books, 1994) 201-203.

34. Abu Muhammad Haji Mohyud-Din, *Tarikh-i-Kabir-i-Kashmir* (Amritsar, India: Suraj Parkash Press, 1903) 34-35. See also K. N. Ahmad, *Jesus in Heaven on Earth*, 373-374, 399.
35. Kersten, *Jesus Lived in India*, 208-209; Hassnain, *Search for the Historical Jesus* 173-181.
36. Vincent A. Smith, *Akbar the Great Mogul, 1542-1605* (Delhi: S. Chand, 1966) 200.
37. This is consistent with the TJ's story, where the courier of the documents or scrolls is reported to have been one of Jesus' sons. It is also consistent with the legend that Jesus finally married an Indian or Kashmiri woman who bore him several children as mentioned by James, "Did Christ Die in Kashmir?" 17, and Hassnain, *Search for the Historical Jesus*, 198.
38. See Deardorff, *The Problems of New Testament Gospel Origins* (New York: Mellen Press, 1992) 9-22.
39. Eusebius, *EH* 5.10.2-4.
40. The *Talmud of Immanuel*, or TJ, is evidently a candidate to have been these *Logia*.
41. Shaikh A-Said-us-Sadiq, *Kamal-ud-Din* (Iran: Syed-us-Sanad Press, 1782) 357-358. See K. N. Ahmad, *Jesus in Heaven on Earth*, 365-366.
42. Pandit Sutta, *Bhavishya Maha Puranan*, 3.3.17-31 (Bombay: Venkateshvaria Press, 1917) 282. See also Kersten, *Jesus Lived in India*, 195-196; and K. N. Ahmad, *Jesus in Heaven on Earth*, 369.
43. Jawarhar Lal Nehru, *Glimpses of World History* (New York: John Day Co., 1942), 84.
44. Kersten, *Jesus Lived in India*, 204.
45. John Blofield, *Compassion Yoga* (London: George Allen & Unwin, 1977) 22; Sir Monier Monier-Williams, *Buddhism* (London: John Murray, 1890) 195-196.
46. John Clifford Holt, *Buddha in the Crown* (New York: Oxford University Press, 1991) 53, 55.
47. Donald S. Lopez and Steven C. Rockefeller, eds., *The Christ and the Bodhisattva* (New York: State University of New York Press, 1987) 28-29.
48. Deardorff, *Jesus in India*, 260. Although modern scholars suppose that the Romans would have known to drive the crucifixion nails through the lower wrists rather than through the hands, to better support the body on the cross, we have no reason to believe that victims in that area had previously been crucified other than by having their

hands and wrists (and feet) strapped rather than nailed. Hence, if using nails for the first time there, the Romans soldiers may very well have targeted Jesus' hands, not wrists, not knowing any better. In any event, the executioners were not in the business of being humane.

49. Holt, *Buddha in the Crown*, 35. See also Kersten, *Jesus Lived in India*, 204.

50. Edward J. Thomas, *The History of Buddhist Thought*, 2nd Ed. (New York: Barnes & Noble, 1951) 190-191.

51. Kersten, *Jesus Lived in India*, 203-204.

52. Abhedananda, *Swami Abhedananda's Journey into Kashmir and Tibet* (Calcutta: Ramakrishna Vedanta Math, 1987; also available from Vedanta Press, Hollywood, CA), 121.

53. Philostratus, *Life of Apollonius*, G. W. Bowersock, ed., C. P. Jones, transl. (Baltimore: Penguin Books, 1970).

54. *Ibid.*, 197. In the passage in question, it appears certain to Damis, Apollonius' closest follower, that his master would soon be executed by Nero. But Apollonius instructs Damis to "'Walk by the sea where the isle of Calypso is, because I will appear before your eyes there.' 'Alive,' asked Damis, 'or how?' Apollonius laughed and said, 'To my way of thinking, alive, but to yours, risen from the dead.'"

55. Eusebius, "Against *Apollonius of Tyana* by Philostratus," in *The Life of Apollonius of Tyana, the Epistles of Apollonius and the Treatise of Eusebius*, F. C. Conybeare, ed. (Cambridge, MA: Harvard University Press, 1912) vol. 2, 485-605.

56. Philostratus, *Life of Apollonius*, 13. This earlier, late 2nd-century author was Moeragnes, who had written four books about Apollonius, none of which survived.

57. *Ibid.*, 44.

58. *Ibid.*, 51.

59. *Ibid.*, 57-67.

60. See *Ante-Nicene Fathers*, vol. 8, 541-542.

61. Philostratus, *Life of Apollonius*, 10-12.

62. Irenaeus, *Against Heresies*, book. 2, chap. 22, paragraph 5, in *Ante-Nicene Fathers*, vol. 1, 392.

Izzo, Daniel Robert February 3, 2005

Resurrection burial tomb

Abstract

A Resurrection Burial Tomb includes a means to preserve and revive Human Beings and provide power and power systems for the same, comprising of a container of preservation means, holding the suspended dead person's body and connected to electrical and energy apparatus systems contained in the Resurrection tomb and robotic machine workers that help maintain and work to revive the suspended Human Being; wherein the process provides power and security from death to living Human Beings being useful and novel, producing a less savage empowered child culture and machine parents.

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Claims

1) I the Reverend Daniel Robert Izzo, hereby claim the, "A Resurrection Burial Tomb" that is a novel means to revive a dead person's body from the grave; and providing a 1 little more security from an impending death; will preserve and prevent the human body from decay and will prolong the human life and tissue and return it into a conscious state, together with the means do do the same, and a means to produce energy, to do the same; comprising of: an artificial womb and a container with

fluid having a crystal radio crown and antenna that connects to a radio and energy devices; wherein the deceased person is prevented from decay within said container and where energy is obtained from the radio crown that oscillates into the deceased person's nerves and brain and the entire container is within a building and tomb that is weather tight, wherein a nuclear device is used to generate electric energy and heat energy; wherein part of the dead person's bone is converted into a microprocessor and computer; wherein the computer and energy sources, drive a heart lung machine that keeps the dead person's remaining cell tissue alive, together with an artificial heart assister pump; wherein the deceased person's bone will regain consciousness, using the material of their bone and artificial and organic means consisting of human bone material; that is convertible into a computer and microprocessor, organically grown body parts; artificially grown body parts; nerves a muscles; wherein the microprocessor will oscillate of the dead person, from the said bone material; being used will oscillated of the person's life frequency; together with artificially grown nerves and olfactory nerves that grow, reconstructed nerve patterns of the deceased

person; together and consisting of artificial and organically grown muscle; comprising of silicon and compounds to cause silicon and material mean to expand and contract with energy and force; and organic material; when a voltage of energy is applied; wherein the deceased person's skeleton remains, will be revived to consciousness, using collagen, a microprocessor, conversion to a computer consciousness, artificial muscle that expands and contracts with energy and force, artificial nerves that will allow the dead person's skeleton remains; to independently communicate new consciousness and thoughts; wherein the said microprocessor contains elements of human bone materials that will be able to convert itself into other electric circuit patterns, by inputting the desired pattern stored in its memory; such as imputing radio, for radio circuit, imputing oscilloscope for oscilloscope circuit; wherein said microprocessor will receive and transmit input data and electric pulses, and will contain information, record data and monitor the burial tomb, comprising of a means to receive and transmit data and electric pulses; and contain information, record data and monitor,

wherein said microprocessor comprises of: a sheet of flexible insulating plastic paper that contains an enlargement of specially painted and printed computer microchips; integrated electric circuits and having thousands of field effect transistors; capacitors and resistors; that was applied and formed with applied layers of paint, wherein the sheet of plastic paper is coated with a complete layer of positively doped silicon substrate that is printed and painted in an electric circuit pattern of an insulating coat of silicon dioxide paint; then an area contain the devices negatively charged electric areas, type-N, will be painted and printed; in a pattern for type-N areas, with a paint that contains silicon and germanium crystals and phosphorus with in the type-N semiconductor paint; wherein then the device's negatively charged electric areas will have extra free electrons and produces N-type, negatively charged electric current conduction; wherein then, another electric circuit pattern is then printed and painted that will conduct the P-type, positively charged electric semiconductor regions with a polysilicon paint that contains silicon, germanium, crystals and boron mixed in the paint; wherein the results of the paint leave gaps in the

germanium crystal structure because there is not enough electrons to fill all of the spaces in the crystal and produces a P-type semiconductor patterned region for the device's positive electric current conduction; wherein then another layer of silicon dioxide is printed and painted in an electric circuit insulating pattern and shall have some holes for electric conduction and shall have a printed and painted aluminum or other electric conducting metal paint; applied on it in a circuit pattern and shall provide electric contacts that will receive electric data pulses of either digital inputs or analog-to-digital converter inputs and the electric contacts will provide the device's digital output or the device's digital-to-analog data output, wherein the microprocessor's input of data will be able to store the data in the device's central processing unit; the device's random access memory; and the device's read only memory and are connected together within the device's address bus; data bus; and control bus and the device's bus system connects to the device's input and output connection; wherein the device can store the data for processing and the device turns data into processed results; into

actions and dip lays, wherein the enlarging of the pattern of the computer microchip electric circuit; integrated electric circuits, 100+thousands of field effect transistors; capacitors and resistors; and then applying the materials to create the same electric systems; painting and printing upon plastic paper, 100 +thousand transistors; capacitors and resistors; on an altered xerography process using the aforementioned materials of plastic, silicon, silicon dioxide, polysilicon, germanium; phosphorous; boron, crystals, metal, or painting the electric circuit patterns of the I/C; microprocessor-microchip; 100 +thousand transistors, capacitors, resistors, circuits in and enlarged pattern; also by lithographic printing or offset cylinders containing the material of paint and the circuit designs; or of the layer printing methods that print the materials without shorting the electric circuit, wherein the microprocessor can be altered and produce electric energy, and can be a photoelectric cell on top of the microprocessor and can be altered and have a parallel along the circuits with arsenic, wherein a photoelectric effect takes place, producing electricity; wherein processes in the Resurrection Burial Tomb, and Conscious Revival System;

having interactions therein wherein; prior domestic priorities of the inventor's; cosmic radio wave crown, a Portable Nuclear Powered Engine and Electric Generator; a Hydraulic Leverage Engine, a Microwave Hot Water Boiler Heating System; the Zinc-Carbon Pill and Transistorized Plastic Paper Computer, the Artificial Heart Assister Pump; the Artificial Muscle Robot; and the Thermionic Electron Electric Generator and Artificial Liver Ammonia Diffuser; interact in new and improved functions that preserve the deceased person's and offer a little more security from our deaths. and electric energy, and power systems; are used as a means to provide the process; wherein a small pump will circulate blood and fluid; that is attached to the person's arteries and veins; wherein when a person's heart fails to pump properly; the automatic device will sense this dysfunction; and will begin to pump and circulate oxygenated blood and fluid properly throughout the person's body tissues, if any, wherein the pumping system is powered electrically or nuclear energy; wherein the power source to circulate and pump blood fluid is connected to the device; wherein the device is connected to a

person's blood circulatory system and will maintain a fresh supply of oxygen to a deceased person's brain and body; wherein; medication and process of the Zinc-Carbon Pill electrophoresis compounds are used in the process for destroying microbes, fungi, bacteria and viral infection and clove leaf oil topical paste for herpes virus, and protect the deceased person's tissues infection; wherein an engine is used to provide the Resurrection Burial Tomb; with a power source; wherein the Hydraulic Leverage Engine is used comprising of; a gasoline combustion chamber having gas therein; a diesel compression chamber having diesel gas fuel therein; a hydraulic pneumatic engine having gas therein; and ION engine having gas therein; a heat source within said housings which interacts with gas or fuel, or an energy source to provide output, a piston connected to the output of the energy or heat source; wherein; the piston will act upon a hydraulic jack piston pump and is connected to a lever bar and the lever bar rests upon a fulcrum point and bar, wherein the lever bar rests upon a fulcrum point and bar, wherein the lever bar acts upon a set of weight load pistons that connect to a crankshaft and the crankshaft is connected to a load bearing

work wheel; and wherein the output of the energy or heat source shall cause and move the effort pistons to apply a small pressure upon the hydraulic jack piston pump that in turn will apply a larger force of pressure upon the lever bar, that in turn will apply an even larger force of pressure upon the weight load pistons that connects to the crankcase and crankshaft and work wheel; so that the crankshaft, under applied pressure of the effort pistons acting upon the hydraulic jack piston pump and lever bar acting upon the weight load pistons, turns a work wheel with much more force that was initially acted upon it from the energy source or heat source but at less distance, wherein the effort multiplied by the distance from the fulcrum, (effort pistons-lever bar) equal the weight multiplied by its distance from the fulcrum (weight load pistons), wherein the Resurrection Burial Tomb has a workable engine for the interaction process; wherein the Zinc-Carbon Pill will prevent decay of the human person, wherein the process will electrocute viruses and other microbes within a human host and will explode viruses, bacteria, fungi and other microbes, like an overloaded electric light bulb, without

destroying many human cells, with the ability to increase the natural electric current and voltage of a human being, with electro-chemical compounds and a process of electrophoresis; and electrocution and electrostatic activity; comprising of; elements of; zinc and its zinc oxides; zinc sulfides and zinc acetates and other zinc elements, carbon and carbon elements and can be in the form of carbonyl and its group, carboxyl and its group, carboxyl and its group and other carbon based elements, magnesium and its compounds and group, wherein the combining of these elements increases the electrical energy of a Human Being with chemical energy and can shatter and explode viruses, bacteria, fungus and other microbes and parasites that cause diseases and cell death of a Human Being, and can be applied also externally to a Human Host with the same effect together with these elements; Zinc; Carbon; Magnesium; Electrophoresis materials; adramycin; antineoplastic; antipan; arsenic; barium and its sulfides; benzyl; benzoic acid; benzoly peroxide; carbamazepine; carbolated campor, carbolic acid; cerumenolytic; daunomycin; hydrogen peroxide; hydrochloride; keratolic acid; magnesium; mithramycin; ozone; phenol red;

phenylactic acid carboxy; phenyl carbinol; pheny ethyl alcohol; phenylactic acid carboxy; phenyl carbinol; pheny ethyl alcohol; phenyl meruric nitrate; piperdine; permathrin; dimethylcyclopropanecarboxylate; pyrethrin; piperonyl butoxide; sodium; sodium hydrogen-carbonate; sodium perborate; suger; sulfa; sulfamide; penicillin; carben carbenicillin; radio chemicals; ultra-violet rays; electric jolts; negative ions; positive ions and water; wherein combining these elements increases and amplify the electrical energy of a host human inside the tomb chambers, to a safe level, but will explode with electric energy, viruses, bacteria, funguses and other microbes and parasites without damaging many Human cells and is obtained ny chemical energy and other energy forms and the process and treatment with chemicals can be in the form of liquids, solids, powders, pastes, pill gas and electric energy forms as light radiation energy and electro-static energy absorption means to prevent decay of the deceased person's Human cell life, and wherein the means for a communication device is used from the Citizen Band Free Public Radio wave Telephone System comprising an audio input,

microphone, a frequency programmer number pad to frequency crystal oscillator. a programmed radio frequency to signal number display, transmit and receive antennas. a keyboard to computer input. a speaker, a video monitor, TV monitor, a fax machine/printer, a data input and computer storage data unit, electric plug input/output, telephone line for wire service, cable input/output wire, video/audio camera that is removable, a source of communication antennas for a radio wave receiver and transmit or and propagated radio waves; wherein; the invention's Citizen Band Free Public Radio wave Telephone system's; audio input with cable wires; input amplifier, radio frequency amplifier, modulated amplifier or frequency amplifier, modulated amplifier or Frequency amplifier master oscillator, radio frequency amplifier, radio frequency amplifier; radio frequency amplifier, crystal oscillator that is programmable; antenna; pre-selection circuit; a frequency changer; intermediate frequency amplifier; frequency detector; low frequency amplifier speaker; antenna for receiver; local oscillator, will interact and function within the Resurrection Burial Tomb processes and radio crown; as a means for monitoring communication,

entertainment fun and data; wherein the invention uses artificial muscles and produces electric current that is stored in the electric storage unit being maintained/operated by the "Artificial Muscle Robot" and its artificial hands having, artificial muscle that is connected to a frame with movable joints and the artificial hand is covered and protected with a material that permits movement, wherein the artificial muscle will expand and contract with force, using electric current by way of spring wires that is within the artificial muscle that is weaved and patterned and layered like a real human hand having sensors for input/output signals through a central joint palm, that has a computer brain with optical sensors and an input/output communication and receives transmits radio communication and the robot has arms with artificial hands. wherein the robot is powered by a Portable Nuclear Powered Engine and Electric Generator other electric input means that move and perform work of Human hands tasks can perform to maintain and work for the Resurrection Burial Tomb work functions; wherein the Hydraulic Pneumatic Engine and the "Microwave Hot Water Boiler Heating System with a

thorium plated magnetron (2) energy systems, using steam from the microwave hot water boiler to drive and help turn the hydraulic pneumatic engine and electric generator wherein the Artificial Muscle Robot assists in the operation of the tomb's hydraulic pneumatic engine and microwave hot water boiler heating energy system. wherein the Lever Engine convert 1 ton of torque into 4 tons without gear/transmission for the invention's work functions and other electric systems comprising of the Thermionic Electron Electric Generator, having a power source, cathode, cesium, thorium, container with magnetic force inside, and a high voltage anode chamber with argon gas inside for output, wherein the input of 10 watts of electric power is amplified to about 100 watts of electric power output, for energy creation, and the invention's Hydraulic Pneumatic Engine used for work functions and comprising of the Portable Nuclear Powered Engine that emits less radiation than 3 TV sets and is used for work functions and electric power generation. wherein; the invention's rebuilding and preserving Human persons who are deceased or suspended or are being revived into normal function, uses the same means of cryogenic preservation, in the

U.S. South Pole, Antarctica territory and the invention comprises of an "Artificial Womb" converted from an oxygen petrofusion machine, wherein the Hyman's cells are preserved/protected and can grown into normal function, wherein a means of a Human bone being crystallized and converted into a computer microprocessor, for an "Artificial Muscle Robot" consciousness and for some normal function. and a means for a Human person inside a container that is filled with a preservative medium that prevents decay and who is wearing a Crystal radio crown to hear the living, awaiting the day of resurrection, wherein the invention comprises of the Thermionic Electron-Electric Generator that is used to generate the invention's electric power, that comprises of; containment inside a sealed tube contain a source of input power that heats a thorium tungsten nichrome wire that is inside another sealed tube that contains cesium gas that generate electrons, wherein a thoriated platinum cathode obtains emitted electrons and emits more electrons inside a magnetic field having cobalt magnets, wherein an anode collects the electrons and sends them to a argon gas ionizer chamber having argon gas

therein wherein high voltage electric is present that ionizes the radiation of the argon gas and causes electrons to rush to one electron and positively charged ions to the other electrode and positively charged ions to the other electrode; wherein the electrons join other electrons emitted from the anode at the negative electrode as the radiation and high voltage causes an electric current within the device and sends it to the increased electric output to the invention's electric current supply wherein the invention comprises of an electric generator having radioactive cobalt 60 magnets, and depicts radioactive cobalt 60 magnets that cause electrons to move faster than iron magnets and produces more electric output per calorie than iron magnets and its output is increased by high voltage argon gas ionization inside the electric generator, wherein radioactive cobalt field structure magnets create a magnetic field; wherein coils of wire are mounted so that they can be spun around in a magnetic field with mechanical energy input; wherein the entire device is inside a vacuum tube that is filled with a gas and charged to a very high voltage wherein the radioactive cobalt 60 ionizes the gas spading the electrically

neutral gas into positively charged ions and negatively charged electrons wherein; the positive ions rush to one electrode and the electrons rush to the other electrode wire, wherein this triggers an electric current from one electrode to the other, while the mechanical energy input turns the wire coil electrode and creates electrical output between the cobalt 60 magnetic field magnets wherein magnetic force and ionized gas of radioactive cobalt 60 magnets make electrons move in the wire coil generating an electric current output, and a means for the invention's electric systems connected to the invention's electric wiring that provides amplified electricity; wherein the Thermionic Electron Electric Generator are a source of amplified electric power to the invention's wiring wherein the invention comprises of devices that convert heat energy into electric current wherein the invention comprises of a Microwave Boiler, converting thorium/uranium electrons into microwave energy said magnetron microwave device, said microwave magnetron and a klystron that cathodes and anodes are plated with thorium and uranium and whose magnets are of radioactive cobalt., wherein

the invention's microwave emitting device shall be improved by plating the magnetron's electric cathode with thorium and uranium that is radioactive, the anode is of magnetizable metal, radioactive cobalt, nickel or iron and the anode is plated with radioactive metal; wherein the operation of the invention's magnetron, a high D-C potential is applied between cathode and anode, setting up a radial electric field, wherein the combined forces cause electrons to take a spiral path and when the magnetron, the electric oscillations of the magnetron resonators set up an A-C electric field across the resonator gaps, wherein the thorium and uranium metal cathode, magnetic metal anode of cobalt and plated with radioactive metal, in the magnetron sets up an increase in spiraling reactions when an electric current is applied and causes the magnetron output current to be many times the electric input of the invention's magnetron, and the invention, comprises of electric devices converting thorium uranium, cesium tungsten, nichrome, and argon gas atoms interacting and generating electron emissions into electric energy, and using mechanical energy input and obtain a greater energy output of electric energy, the invention's, Thermionic

Electron-Electric Generator, that converts a smaller energy power input into a larger electric energy output wherein; the invention's devices converting heat energy and electro magnetic energy into a larger electric energy output, wherein the invention's devices converting a smaller electric energy input into a larger heating calorie output for room tomb air radiant heat, wherein the invention's devices converting thermionic emissions into a larger radiant energy output, wherein; the invention's devices using cobalt magnets and mechanical energy together with high voltage ionized argon gas to provide an output of electric energy. wherein; the invention's devices using cobalt 60 magnets, wherein the invention's devices using rare earth elements to increase the power output, wherein the invention's devices converting electric input into mechanical output, wherein the invention's "Artificial Liver and Ammonia Diffuser" for cirrhosis treatments with blood clotting restorability; comprising of a container having an input tube containing Human Blood with toxins that is filtered with a calcium filter (2) that circulates and moves the blood/fluid with an electric pump and mixes plasma

fluid input and connects into and restores blood clotting; a settling tank that connects into another calcium filter tank that then sends the filtered blood that has its clottability restored; into another tank wherein the blood is again filtered (2) and slightly heated in the unit tank where the blood is again filtered and slightly heated in the unit tank; wherein the slight heating and calcium mixes with the Human blood and causes ammonia toxins to diffuse into a vent and the blood is sent through a connecting pipe into a cooling unit and filters down to remove any extra calcium and cools the blood and fluid and sends the cleaned of toxins blood/fluid into a storage tank and a output tube for use if a Human Being and final testing to insure toxin material removal, before being used to the person in need, and said processes interact within the invention for an outcome; wherein the invention comprises of a "Portable Nuclear Powered and Electric Generator" that comprises of a Stirling type engine; wherein the invention's engine having a doubled walled capsule cylinder that is filled with helium gas and contains a floating piston at the top of the floating piston is a pellet of radioactive material that heats the helium to about 1,200 degrees F., where

this very hot helium expands rapidly, then forcefully drives down the piston to the bottom of the cylinder where the temperature is almost 1,100 degrees F., lower and as the piston moves down it forces some of the gas out through a valve in the cylinder floor near the spring bellow and the floating piston acts and pushes against the upper hydraulic jack piston and the upper hydraulic jack piston will push against the helium reservoir and will compress the helium gas and pushes against the helium reservoir and will compress the hydraulic fluid reservoir tat will force the hydraulic jack plumps lower hydraulic pistons that will force and act upon a larger load than was or b acted upon it, and will push this force against the crankcase that will turn and urn the load bearing work wheel and the invention's oil pan is filled with oil and the work wheel will turn an electric generator and the entire device is contained inside of a magnetic bottle that has a coil of a magnetic field metal and the magnetic bottle is contained in a ceramic box that is covered with lead plates an a battery is used to hold the electric current in storage for use of the electric systems of the invention, to provide an electric source for the

invention; wherein; wherein the invention's "Portable Nuclear Powered Engine and Electric Generator" shall also comprise of and consisting of a Tidal regenerate engine that has a double walled capsule cylinder, contain a signal computer that is an electromagnet (29) that is activated to attract another magnet and the movement expands a bellows (22a) that forces a little water up a tube into a water boiler where heat from a radioactive source and a thorium plated magnetron maser protected by a window of quartz will vaporize water into steam and the steam is heated further inside of a super heater tube and the steam then pushes another bellows that, in turn, sends a pulse of hydraulic fluid through the hydraulic jack piston pump and will compress the hydraulic piston that will force and act upon a larger load than was originally acted upon it, and also force a lever and together will push this force ageist the crankshaft that will turn and turn the load bearing work wheel and the engine's oil pan is filled with oil and the work wheel will turn an electric generator and the entire engine is contained in a ceramic box that is covered with lead plates and barium plates and the ceramic box is located within a cement molded building and shall

contain barium radiation absorbers and powder extinguishers that shall discharge and absorb radiation when the extinguishers sense radiation leakage, wherein electric and power is produced for the invention; wherein; the invention's, comprises of a :cylinder housing operating inside of a magnetic bottle that is contained in a ceramic box that is covered with lead plates and barium plated and is located within a cement premolded building that contains the barium radiation absorbers and powder extinguishers, wherein the invention's "Portable Nuclear Powered Engine and Electric Generator" cylindrically shaped housing having water and a source of electric power to be amplified and converted into microwave energy and a source of generating microwave energy having its magnetron cathode tubes plated with radioactive nuclear materials as a source of amplifying the cathode rays that will be converted into microwave energy to provide an output and a computer that uses either cable wire and or transmits data by radio waves and television KHZ-MHZ-GHZ waves to a radio and television receiver that is connected to a computer that is connected to a magnetic video/audio tape recorder for recording

computer data inexpensively, wherein 1 VHS magnetic tape can hold 1.5 gigabytes of computer data, wherein the invention's "Portable Nuclear Powered Engine and Electric Generator", cylindrically shaped housing and thorium plated magnetron that emits microwave energy and a magnet receiving cosmic radio waves and converting the energy into usable electric current by using a crystal radio set with an antenna sensitive at collecting radio wave energy and using and storing it inside of a battery and the cosmic radio waves shall also be received and recorded on magnetic tape and stored for analysis of fluctuations and data pulses inside of the unit's audio-video recorder and accessed by the computer key code

2) A Thermionic Electron Electric Generator and Artificial Ammonia Diffuser as defined in claim 1 and in the specification, in which very low energy input creates a higher energy output.

3) Microwave Hot Water Boiler Heating System as defined in claim 1 and in the specification, in which low energy input creates a higher energy output.

4) A Portable Nuclear Powered Engine and Electric Generator as defined in claim 1 and in the specification, in which low level nuclear energy input creates a steady means of power, for charging batteries and providing electric current.

5) A Hydraulic Leverage Engine as defined in claim 1 and the specification; wherein 1 unit of input work is converted into 4 units of output work using a lever and hydraulic jacks.

6) The Zinc-Carbon Pill and Transistorized Plastic Paper Computer as defined in claim 1 and the specification, wherein microbes, viruses, bacteria and fungi are electrocuted without much human cell destruction, and information data is stored.

7) The Artificial Muscle Robot as defined in claim 1 and the specification wherein, the transistorized plastic paper computer is used as the CPU and the power source is a portable nuclear powered engine and electric generator.

8) The Artificial Heart Assister Pump as defined in claim 1 and the specification wherein a energy source is used to provide an output.

9) The Citizen's Band Free Public Radio wave Telephone as defined in claim 1 and the specification, wherein the transistorized plastic paper computer is used for radio propagation.

10) A Resurrection Machine and Consciousness Revival System as defined in claim 1 and the specification is incorporated with the Resurrection Burial Tomb, to provide output.

Description

[0001] Application Ser. No. 10/161,974

[0002] A RESURRECTION BURIAL TOMB in this application is a CIP of application Ser. No. 09/619,698 filed Jul. 19, 2000, which is a CIP of "A Resurrection Machine and Consciousness Revival System" application No. 60/144,245 filed Jul. 19, 1999 and a CIP of "The Thermionic Electron Electric Generator and Artificial Liver Ammonia Diffuser" application No. 60/295,356; filed on Jun. 04, 2001 and "The Microwave Hot Water Boiler Heating System" application Ser. No. 08/766,130 filed Dec. 16,

1996 U.S. Pat. No. 6,064,047 with Discloser Document #412019
priority, filed Jan. 10, 1997 and "The Portable Nuclear Powered
Engine and Electric Generator" application Ser. No. 09/205,415
filed Dec. 02, 1998 (being a CIP of application Ser. No.
08/798,316 filed on Feb. 10, 1997) and "The Hydraulic Leverage
Engine" application Ser. No. 09/177,760 filed on Oct. 24, 1998
(being a CIP of application Ser. No. 08/813,825 filed on Aug. 21,
1997 and application No. 60/063,068 filed on Oct. 27, 1997 and
application No. 60/072,624 filed on Jan. 26, 1998 and "The Zinc-
Carbon Pill and Transistorized Plastic Paper Computer"
application Ser. No. 09/239,269 filed on Jan. 26, 1999 (being a
CIP of application No. 60/072,579 filed on Jan. 26, 1998) and
"The Artificial Muscle Robot" application No. 60/148,654 filed
on Aug. 13, 1999 Pat. App No. 60/128,747 filed on Apr. 12, 1999
"Free Citizen's Band Public Radio wave Telephone System and
Computer" Together with priority "conception of invention
claims " of "The Artificial Heart Assister Pump" application No.
60/122,189 filed on Mar. 01, 1999 and Disclosure Document #
452294 filed on Mar. 03, 1999 Together with priority
"conception of invention claims" of: Disclosure Document #

**412019 filed on Jan. 10, 1997; Discloser Document #452294;
Discloser Document #494846; Discloser Document #486705;
Discloser Document #494219 filed May 21, 2001; Discloser
Document #493,675 filed May 17, 2001; Discloser Document #
493701;**

**[0003] The above references are held the priority and inventions,
of the applicant, the Reverend Daniel Robert Izzo of 512
Onondaga Ave., Syracuse New Your 13207 citizen of the United
States of America, who has not abandoned any of his science
inventions, obviously, but views them as a form of his children.**

BACKGROUND OF THE INVENTION

[0004] 1. Field of the Invention

**[0005] This invention pertains to processes and devices that
provide power and security from death, and more particularly, a
noble branch or field thereof; known in psychoanalysis as an
empowerment means that relieves some fears of eternal death
and the anxiety about the same, together with devices to**

empower people who lack independent power sources.

[0006] 2. Background Information

[0007] In order to provide background information so that the invention maybe completely understood and appreciated in its proper context, reference may be made to a number of prior art patent and applications of the inventor as follows.

SUMMARY OF THE INVENTION

[0008] It is another principle object of the invention; to provide the present Human Community, being sadomasocistic by nature; (re; cruel world, death and taxes; master-slave; cop-robber; landlord-tenant; schoolmaster-pupil; boss-worker etc.); with a more fun and better, self supporting prolonged Child Culture having Robot Parents and energy sources to empower the same; (re; man and machine), the inventor believes that this is the next progression in Human development, wherein government makes its own tax es from gold coins trans mutated from neutron bombarded lead and engineers a sort of made-made heaven; wherein the work is play and fun, inapt. Psychoanalysis shows

that the 3 main issues that human beings deal with are issues of 1) Power, (food, heat, etc.) 2) Sex Gratification, (creation of children) 3) Security from Death. (religion tales anxiety relief, peace etc.) because they have survival value. This invention attempt provide human beings with issues; (1) Power; and a little more of issue (3) Security from Death.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1

[0010] 1) Is a drawing of the Resurrection Tomb holding the container of preservative; holding the dead person's body and connected to electrical and energy apparatus contained in the Resurrection Tomb consisting of concrete/cement molded manhole building/tomb with power source for the dead/dying human beings.

[0011] 2) Sealed entrance to building/tomb.

[0012] 3) Double walled, vacuum sealed container with preservative medium that prevents decay of human tissue and a

means for tissue nutrition and oxygen.

[0013] 4) Depicts a power source, of a portable nuclear powered engine and electric generator and batteries for storage of electric power.

[0014] 5) Depicts a radio and communication system with antenna connected to power source.

[0015] 6) Turbine system that converts water and or wind power into electric/energy for the burial tomb.

[0016] 7) Depicts intelligent robot maintenance worker.

[0017] 8) Depicts a heating source.

[0018] 9) Depicts an engine/pumping system

[0019] 10) Depicts a means and apparatus that provides oxygen/nutrition t the surviving/growing human tissue.

[0020] 11) Depicts electrical apparatuses for monitoring communication and entertainment of the burial/chambers.

[0021] FIG. 2

[0022] 1) Depicts a dead human being inside of a container containing tissue preservative fluid; that has a radio wave crown.

[0023] 2) Connected to the head of the person; with an antenna that connects to a radio.

[0024] 3) That is either electric powered or a crystal radio; that can collect and store radio wave energy that all 1-4 fits inside of a piece molded man hole/building burial tomb.

[0025] 4) Radio waves

[0026] 5) Building/tomb.

[0027] 6) A human being's bone containing silicon, phosphorus and boron that is ground up.

[0028] 7) Grounded up elements and are used to produce a computer electric circuit that is placed inside of a computer.

[0029] 8) (Harry Quartz and Silicon crystals that oscillate at the frequency of the dead person's life/energy force.)

[0030] 9) With a human skeleton frame

[0031] 10) With a few bones missing waiting to have artificial muscles and intelligence restored to it's material. To become conscious again with it's old stored thoughts, mannerism and memories.

[0032] FIG. 3

[0033] Depicts two human beings (in fetal form) being kept alive in a jar of fluid.

[0034] 1) Awaiting the day that new nerves regenerate in their bodies to regain consciousness once again. Please note: When we die, " not all of our body is "dead" mainly our nerves and brain has "burned out" and "died", when we die. The rest of our body is OK for several days.

[0035] FIG. 4

[0036] Depicts a human skeleton that will be filtered with new artificial nerves; muscle and conscious together with organic

compounds and nutrition.

[0037] FIG. 5

[0038] Depicts a human skeleton being filled with artificial nerves; muscle and eyes, preparing for a conscious resurrection.

[0039] FIG. 6

[0040] Depicts the preserved brain and nerves 1 that was from FIG (1). The preserved brain and nerves have been treated with nerve growth hormone that was cultured from olfactory nerves and other nerve hormones.

[0041] FIG. 7

[0042] Depicts arteries and veins far carries blood 1 or energy far artificial muscles.

[0043] FIG. 8

[0044] Depicts a human skeletal being fitted with artificial muscle that expands and contracts with data inputs. The artificial

muscle used is silicon with elements and minerals used to expand and contract silicon and artificially grown organic muscles.

[0045] FIGS. 9 & 10

[0046] Depicts the Portable Nuclear Powered Engine and Electric Generator that produces energy for the unconscious human being's home and the dead human being's tomb, see CIP for specifications.

[0047] FIGS. 11 & 12

[0048] Depicts the Portable Nuclear Powered Engine and Electric Generator obtaining cosmic radio wave energy and is connected to the human material computer (30E; 30F;37) See the CIP specification for Ser. No. 09/205,415 and CIP application Ser. No. 09/177,760.

[0049] FIG. 13

[0050] Depicts the Cement Molded Building and Tomb (19B) being powered by the Portable Nuclear Powered Engine and Electric Generator, see CIP Application Ser. No. 09/177,760, and

CIP specification for Ser. No. 09/205415.

[0051] FIGS. 14 & 15

[0052] Depicts the Microwave Hot water (40) Powered Heating System with Thorium plated Magnetron maser that provides heat for the building and tomb. See U.S. Pat. No. 6,064,047.

[0053] Ser. No. 10/181,974

[0054] FIG. 19) Depicts the invention's Citizen Band Free Public Radio wave Telephone System's unit A and B

[0055] 1) Audio input, microphone.

[0056] 2) Frequency programmer number pad to frequency crystal oscillator.

[0057] 3) Programmed radio frequency to signal number display showing 4.725088 MHz, 47.25088 MHz and 472.5088 kHz, usable in the U.S. when the government (FCC) allows common carrier use of radio frequency numbers similar to a person's telephone number, from 200 kHz Thur 999 kHz, 0.000010 MHz Thur 9.999999 MHz, 0.0000010 MHz Thur 99.999999 MHz.

(with public radio stations frequencies reserved).

[0058] 4) Transmit and receive antennas.

[0059] 5) Keyboard to computer input.

0060] 6) Speaker.

[0061] 7) Video Monitor/TV monitor.

[0062] 8) Fax machine/printer.

[0063] 9) Data input and computer storage data unit.

[0064] 10) Electric plug input/output.

[0065] 11) Telephone line for wire service.

[0066] 12) Cable input/output wire.

[0067] 13) Video/Audio camera that is removable.

[0068] 14) Source of communication antenna for (a) and (b)

Radio wave receiver and transmit or

[0069] 15) Propagated Radio wave from devices A and B.

[0070] 16) Radio receiver speaker.

[0071] FIG. 19B) Depicts the invention's;

[0072] (1) audio input with cable wires

[0073] (2) input amplifier;

[0074] (3) radio frequency amplifier;

[0075] (4) modulated amplifier or a frequency modulator;

[0076] (5) modulated amplifier or a frequency modulator-master oscillator

[0077] (6) Radio frequency amplifier;

[0078] (7) Radio Frequency amplifier;

[0079] (8) Radio Frequency amplifier;

[0080] (9) Crystal oscillator that is programmable;

[0081] (10) Antenna;

[0082] (11) Pre-selected circuit;

[0083] (12) Frequency changer;

[0084] (13) Intermediate Frequency amplifier;

[0085] (14) Frequency detector,

[0086] (15) Low Frequency amplifier,

[0087] (17) Antenna

[0088] (18) local oscillate,

[0089] FIG. 20) Describes the invention's stream paddle wheel and electric generator, wherein the wind/river water flow (2) causes multiple paddle wheels (3) to turn a shaft (4) that turns

and drives an electric generator (5) and the unit (1) produces electric current that is stored in the electric storage unit (6) being maintained/operated by the "Artificial Muscle Robot" of figure (2) part (10).

[0090] FIG. 21) Describes the invention's "Artificial Muscle Robots" artificial hand and the invention's artificial muscle hand having (1) one with artificial muscle (2) that is connected to a (bone) frame (8) with movable joints (4) and the artificial hand (1) is covered and protected with a material (3) that permits movement. The invention's artificial muscle (2) will expand and contract with force, using electric current by way of spring wires (6) that is within the artificial muscle (2) that is weaved and patterned and layered like a real human hand having sensors (7) for input/output signals through a central joint palm (5).

[0091] FIG. 22) Describes the invention's, "Artificial Muscle Robot" (10) that has a computer brain (9) with optical sensors (11) and an input/output communication device (12) and receives

transmits radio communication (17) and the device (10) has arms (13) with artificial hands (1). wherein the robot (10) is powered by one of the invention's, "Portable Nuclear Powered Engine (15) and (16) and other electric inputs (18) and can move and perform handwork (1) (7) (6) of many tasks Human hands can perform to make Human life easier.

[0092] FIG. 39) Describes the invention's "Artificial Heart Assister Pump" and the "Zinc-Clove Leaf Oil Paste" 1) A Human Person 2) An Artificial Heart Assister Pump that is electric or nuclear powered. 3) A Human Heart. 4) The Zinc-Clove leaf oil paste on a

[0093] FIGS. (23) (24) (25) Describe the invention's, "Portable Nuclear Powered and Electric Generator" that comprises of a Stirling type engine having a doubled walled capsule cylinder (1) that is filled with helium gas (2) and contains a floating piston (3). At the top of the floating piston (3) is a pellet of radioactive material (4) that heats the helium (2) to about 1,200 degrees F., This very hot helium (2) expands rapidly, then forcefully drives

down the piston (3) to the bottom of the cylinder (1) where the temperature is almost 1,100 degrees F., lower. As the piston (3) moves down it forces some of the gas out through a valve (5) in the cylinder floor near the spring bellow (6). The floating piston (3) acts and pushes against the upper hydraulic jack (8) piston (7). The upper hydraulic jack (8) piston (7) will push against the helium reservoir (9) and will compress the helium gas and pushes against the helium reservoir (9) and will compress the hydraulic fluid reservoir (11) that will force the hydraulic jack pumps (8) lower hydraulic pistons(12) that will force and act upon a larger load than was originated upon it, and will push this force against the crankcase (13) that will turn and turn the load bearing work wheel (14). The invention's oil pan (15) is filed with oil. The work wheel (14) will turn an electric generator (16). The entire device is contained inside of a magnetic bottle (17) that has a coil of a magnetic field metal (18). The magnetic bottle (17) is contained in a ceramic box (19) that is covered with lead plates (20). A battery (21) is used to hold the electric current in storage for use of the electric systems of the invention.

[0094] FIGS. (27) (28) (29) Describe the invention's "Portable Nuclear Powered Engine and Electric Generator" consisting of a Tidal regenerator engine that has a double walled capsule cylinder (1) contain a signal computer (30) that signals an electromagnet (29) that is activated to attract another magnet (29b). The movement expands a bellows (22a) that forces a little water (26) up a tube (31) into a water boiler (24) where heat from a radioactive source (23) and or a thorium plated magnetron maser (33) protected by a window of quartz (34) will vaporize water (26) into steam (32). The steam (32) is heated further inside of a super heater tube (21). The steam (32) then pushes another bellows (22b) that, in turn, sends a pulse of hydraulic fluid (28b) through the hydraulic jack piston pump (28) and will compress the hydraulic piston (28c) that will force and act upon a larger load than was originally acted upon it, and also force a lever (35) and together will push this force ageist the crankshaft (13) that will turn and turn the load bearing work wheel (14). The engine's oil pan (15) is filled with oil. The work wheel (14) will turn an electric generator (16). The entire engine

is contained in a ceramic box (19) that is covered with lead plates (20) and barium plates (20b) and the ceramic box (19) is located within a cement molded building (19b) and shall contain barium radiation absorbers and power extinguishers (20c) that shall discharge and absorb radiation when the extinguishers (20c) sense radiation leakage.

[0095] FIG. 30) Describes the invention's "Portable Nuclear Powered Engine and Electric Generator", cylinder housing (1) operating inside of a magnetic bottle (17) that is contained in a ceramic box (19) that is covered with lead plates (20) and barium plated (20b) and is located within a cement premolded building (19b) that contains the barium radiation absorbers and powder extinguishers (20c).

[0096] FIG. 31) Describes the invention's "Portable Nuclear Powered Engine and Electric Generator" cylindrically shaped housing (1) having water (26) and a source of electric power to be amplified and converted into microwave energy (36) and a source of generating microwave energy (33) having its

magnetron cathode (33a) tubes plated with radioactive nuclear materials as a source of amplifying the cathode rays that will be converted into microwave energy to provide an output (33b). A computer (30) that uses either cable wire (30b) and or transmits data by radio waves and television KHZ-MHZ-GHZ waves (30b) to a radio and television receiver (30c) that is connected to a computer (30e) that is connected to a magnetic video/audio tape recorder (30f) for recording computer data inexpensively, wherein 1 VHS magnetic tube (30f) can hold 1.5 gigabytes of computer data.

[0097] FIG. 32 Describes the invention's "Portable Nuclear Powered Engine and Electric Generator", cylindrically shaped housing (1) and thorium plated magnetron that emits microwave energy (33) and a magnet (29) receiving zzzzz930c) (39) cosmic radio waves (38) and converting the energy into usable electric current (40) by using a crystal radio set (39) with an antenna (40) sensitive at collecting radio wave energy (38) and using and storing it (41) inside of a battery. The cosmic radio waves (38)

shall also be received (30c) and recorded on magnetic tape (30f) and stored for analysis of fluctuations and data pulses inside of the unit's (1-15) audio-video recorder (30f) and accessed by the computer key code (37)

[0098] FIG. 33) Describes the invention's Portable Nuclear Powered Engine and Electric Generator usage of lever bars (35) that will convert 1 ton of torque force into 4 tons of force, but a less distance.

[0099] FIG. 23) Details the invention's "Portable Nuclear Powered Engine and Electric Generator" that emits less radiation than 3 television sets.

[0100] Human Person's mouth that destroys microbes, such as Herpes virus.

[0101] FIG. 40) Describes the invention's "Hydraulic Pneumatic Engine" (1) and the "Microwave Hot Water Boiler Heating System" with a thorium plated magnetron (2) energy systems, using steam (3) from the microwave hot water boiler (2) to drive

and help turn the hydraulic pneumatic engine (1) and electric generator (4) wherein the Artificial Muscle Robot of FIG. (10) assists in the operation of the invention's hydraulic pneumatic engine and microwave hot water boiler heating (5) energy system.

[0102] FIG. 41) Describes the invention's energy devices; 1) depicts the "Lever Engine" that can convert 1 ton of torque into 4 tons without gears/transmission. 2) depicts the "Thermionic Electron Electric Generator" having a power source, cathode, cesium, thorium, container with magnetic force inside, and a high voltage anode chamber with argon gas inside for output, wherein the input of 10 watts of electric power is amplified to about 100 watts of electric power output, for energy creation. 3) depicts the invention's "Hydraulic Pneumatic Engine" used for work functions. 4) depicts the invention's, "Portable Nuclear Powered Engine" that emits less radiation than 3 TV sets and is used for work functions and electric power generation

[0103] FIG. 42) Describes the invention's rebuilding and

preserving Human persons who are deceased or suspended or are being revived into normal function, 10) depicts a means of cryogenic preservation, in the U. S. South Pole, Antarctica territory 11) depicts a Human person in an "Artificial Womb" covered from an oxygen petrofusion machine, wherein the Human cells are preserved/protected and can grow into normal function. 9,8,7,6,) depicts a Human bone being crystallized and covered into a computer microprocessor, for an "Artificial Muscle Robot" consciousness and for some normal function. 4,3,2,1) depicts a Human person inside a container that is filled with a preservative medium that prevents decay and who is wearing a Crystal radio crown to hear the living, awaiting the day of resurrection. (when we die, we can still hear, if there is ear drum function.).

[0104] FIG. 43) Describes the invention's "Thermionic Electron-Electric Generator" (30) that is used to generate the invention's electric power, that is contained inside a sealed tube (10)5 contain a source of input power (4)d that heats a thorium

tungsten nichrome wire (3)c that is inside another sealed tube (20) that contains cesium gas (5)e that generate electrons, wherein a thoriated platinum cathode (6)f obtains emitted electrons (1)a and emits more electrons inside a magnetic field (7)g having cobalt magnets (12)l; wherein an anode (11)k collects the electrons and sends them to a argon gas ionizer chamber (25) having argon gas therein(8)h wherein high voltage electric is present (26) that ionizes the radiation of the argon gas (8)h and causes electrons to rush to one electrode (27) and positively charged ions to the other electrode (27) and positively charged ions to the other electrode (28); wherein the electrons join other electrons emitted from the anode (11)k at the negative electrode (27); as the radiation and high voltage causes an electric current within the device (30) and sends it to the increased electric output to the invention's electric current supply (13)m

[0105] FIG. 44) Depicts the invention's electric generator having radioactive cobalt 60 magnets. and depicts radioactive cobalt60 magnets that cause electrons to move faster than iron magnets

and produces more electric output per calorie than iron magnets and its output is increased by high voltage argon gas ionization inside the electric generator, wherein (1) radioactive cobalt fuel structure magnets create a magnetic field; wherein (2) coils of wire are mounted so that they can be spun around in a magnetic field with mechanical energy (10) input; wherein the entire device is inside a vacuum tube (6) that is filled with a gas (4) and charged to a very high voltage (4a) wherein the radioactive cobalt 60(1) ionizes the gas (4) splitting the electrically neutral gas (4) into positively charged ions (13) and negatively charged electrons (3) wherein the positive ions (13) rush to one electrode (6a) and the electrons (3) rush to the other electrode wire (2) wherein this triggers an electric current from one electrode (2) to the other, (6a) while the mechanical energy input (10) turns the wire coil electrode (2) and creates electrical output (11) between the cobalt60 magnetic field magnets (1) wherein magnetic force and ionized gas of radioactive cobalt60 (1) magnets make electrons move in the wire coil (2) generating an electric current output, (11).

[0106] FIG. 45) Describes the invention's electric systems (1) connected to the invention's electric wiring (2) that provides amplified electricity; wherein the "Thermionic Electron Electric Generator" (3) (4) are a source of amplified electric power to the invention's wiring (2).

[0107] FIG. 46) Describes the invention's devices that convert heat energy into electric current (1) (2) (3) (4) (5).

[0108] FIG. 47) Describes the invention's Microwave Boiler, converting thorium/uranium electrons into microwave energy (1) (2) (3).

[0109] (1) depicts said magnetron microwave device, (2) (3) depicts said microwave magnetron and a klystron that's cathodes and anodes are plated with thorium and uranium and whose magnets are of radioactive cobalt., wherein the invention's microwave emitting device shall be improved by plating the magnetron's electric cathode with thorium and uranium that is radioactive, the anode is of magnetizable metal, radioactive

cobalt, nickel or iron and the anode is plated with radioactive metal; wherein the operation of the invention's magnetron, a high D-C potent is applied between cathode and anode, setting up a radial electric field, wherein the combined forces cause electrons to take a spiral path and when the magnetron oscillates, the electric oscillations of the magnetron resonators set up an A-C electric fuel across the resonator gaps, wherein the thorium and uranium metal cathode, magnetic metal anode of cobalt and plated with radioactive metal in the magnetron sets up an increase in spiraling reactions when an electric current is applied and causes the magnetron output current to be many times the electric input of the invention's magnetron.

[0110] FIG. 48) Describes the invention's electric devices converting thorium, uranium, cesium tungsten, nichrome and argon gas atoms interacting and generating electron emissions into electric energy.

[0111] FIG. 49) Describes the invention's devices using mechanical energy input and obtain a greater energy output of electric energy.

[0112] FIG. 50) Describes the invention's Thermionic Electron-Electric Generator, that converts a smaller energy power input into a larger electric energy output.

[0113] FIG. 51) Describes the invention's devices converting heat energy and electro magnetic energy into a larger electric energy output.

[0114] FIG. 52) Describes the invention's devices converting a smaller electric energy input into a larger heating calorie output for room tomb air radiant heat.

[0115] FIG. 53) Describes the invention's devices converting thermionic emissions into a larger radiant energy output.

[0116] FIG. 54) Describes the invention's devices using cobalt magnets and mechanical energy together with high voltage ionized argon gas to provide an output of electric energy.

[0117] FIG. 55) Describes the inventions devices using cobalt 60 magnets.

[0118] FIG. 56) Describes the invention's devices using rare earth elements to increase the power output.

[0119] FIG. 57) Describes the invention's devices converting electrical input into mechanical output.

[0120] FIG. 58) Describes the invention's "Artificial Liver and Ammonia Diffuser" for cirrhosis treatments with blood clotting restorability; comprising of a (1) container having an input tube (14) containing Human (14) Blood with toxins that is filtered with a calcium filter (2) that circulates and moves the blood/fluid with an electric pump (13) and mixes plasma fluid input (3) and connects (13) into and restores blood clotting, a settling tank (5) that connects (13) into another calcium filter (2) tank (6) that then send the filtered blood (13) that has its clottability restored; into another tank (8) wherein the blood is again filtered (2) and slightly heated (7) in the unit (8) tank where the blood is again filtered (2) and slightly heated (7) in the unit (8) tank; wherein the slight heating and calcium mixes with the Human blood and causes ammonia toxins (9) to diffuse into a vent (9) and the blood

is sent through a connecting pipe (13) into a cooling unit (10) and filters (10a) down to remove any extra calcium and cools the blood and fluid and sends (13) the cleaned of toxins blood/fluid into a storage tank (11) and a output tube (12) for use if a Human Being and final testing to insure toxin material removal, before being used to the person in need.

*** * * * ***

-

Are you a baby god with a baby universe ?

(draft thoughts)

Hi:

I just wanted to let you know that I think your a baby god and that you have a baby universe and I think I can prove it.

How ?

1) The Redshift of Universal incoming light and

2) the start of MOTION

THE CfA REDSHIFT SURVEY

"

**-----IT COULD MEAN THAT MOTION STARTED HERE ON
EARTH, AND THE ONLY THING I CAN THINK OF THAT COULD
START MOTION IN A STATIC UNIVERSE IS SOME PHOTON
THAT CAN GO BACK IN SPACE TIME TO A STATIC GRAVITY
VACUUM FIELD**

**EVEN AN IMAGINARY PHOTON , AND ON EARTH IMAGINARY
PHOTONS ARE CREATED BY PEOPLE'S IMAGINATIONS "**

and the red shift of light might actually prove theory three

**the odds that the earth is at the center of the universe is a 1000 zillion to
one**

**unless motion started here....and the only thing that could start motion
on earth**

would most likely be people's imaginary photons

**1st) I want to let you know that you are not deserving of death so please
don't be scared of me.**

and I am glad your my friend.

I posted the gravitational instability cosmological theory on the formation of the universe (draft notes)

and the Red Shift of universal incoming light

as a new topic , because something is in error with both the Big Bang Theory and also the Steady State Theory

there is no evidence that a Big Bang occurred , if one did happen then ask where in the universe did it happen ?

the alternative is Einstein's and others

Steady State Theory (that there are more protons than electrons that then form cosmic dust and then clumps into galaxy)

the more I read Einstein the more impressed I am of the man.

I wasn't the first person to ask " When did motion first start in the universe ? "

Einstein was , I believe when he stated that at some point in time the universe had to be static (motionless)

that statement alone over turns big bang , as that theory needs a compact ball of matter that explodes.

(a ball of compact matter is in motion always)

the Steady State Theory also doesn't prove when motion started either

but is you add the three theories together

1) The Big Bang Theory

2) The Steady State Theory

and

3) The Gravitational Instability Cosmological Theory on the Formation of the Universe

all three theories added together actually works

theory 3 is mine and alleges that a particle either resists universal motion and goes back in space time into a static motionless gravity vacuum field , and causes a BIG BANG of a static field realitive to another and the interaction of the two static gravity fields forms dust (protons and electrons) and the matter of the universe

the problem with theory three is WHAT PARTICLE CAN GO BACK IN SPACE TIME ?

AND THE ONLY THING THAT I can think of is Imaginary Photons (virtual photons)

"

-----IT COULD MEAN THAT MOTION STARTED HERE ON EARTH, AND THE ONLY THING I CAN THINK OF THAT COULD START MOTION IN A STATIC UNIVERSE IS SOME PHOTON THAT CAN GO BACK IN SPACE TIME TO A STATIC GRAVITY VACUUM FIELD

EVEN AN IMAGINARY PHOTON , AND ON EARTH IMAGINARY PHOTONS ARE CREATED BY PEOPLE'S IMAGINATIONS "

and the red shift of light might actually prove theory three

the odds that the earth is at the center of the universe is a 1000 zillion to one

unless motion started here....and the only thing that could start motion on earth

would most likely be people's imaginary photons

(personally I think people are baby gods and create baby universes like yourself

IS THE EARTH THE CENTER OF THE UNIVERSE? (Dept. of Physics

Based on the Reshift of light , as it is unifom in all directions from the Earth in the Universe, those measurements mean that the Earth is at the center of the universe

something is wrong here

(maybe the Earth is at the center of the universe ?)

IF THE RED SHIFT OF UNIVERSAL INCOMING LIGHT CAN'T BE ACCOUNTED FOR BY OUR MASSIVE LIGHT BENDING SUN

OR ANYOTHER RESONABLE PHYSICS

AND THE RED SHIFT SHOWS THE EARTH IS AT THE CENTER OF THE UNIVERSE

IT COULD MEAN THAT MOTION STARTED HERE ON EARTH, AND THE ONLY THING I CAN THINK OF THAT COULD START MOTION IN A STATIC UNIVERSE IS SOME PHOTON THAT CAN GO BACK IN SPACE TIME TO A STATIC GRAVITY VACUUM FIELD

EVEN AN IMAGINARY PHOTON , AND ON EARTH IMAGINARY PHOTONS ARE CREATED BY PEOPLE'S IMAGINATIONS ,

I DO THINK HUMAN BEINGS STARTED MOTION , WITH IMAGINARY PHOTONS

AND THE REDSHIFT OF LIGHT COULD PROVE IT

wanted to share this page I just found on google

as you can see there is a problem in the known cosmological theories

the major problem is explaining when Motion first started

I don't believe there are any theories that give a good explanation how motion of anything first started

even my theory as close as it is , is almost sci fi as it uses a particle that either resists universal motion or even worse imaginary photons from people's imagination

remember in the last email I sent, there is a part about the redshift and the earth could be at the center of the universe ?

crazy but if people's imaginary photons really did start motion that could explain how and why the earth is at the center of the universe

because people live on the earth and if motion started with imaginary photons , then the earth would be at the center of the universe

but this doesn't prove God and I am certainly not claiming religion in my theories.....but I don't believe other people are deserving of death, that is my mind..most men do think others are deserving of death it is the oedpus or cain and able complex..its another story but the male sex drive seems to have screwed up some science

anyways I hope your happy to know your a baby god and that you have a baby universe (smiles)

Dan

below is a good outline of the cosmological problems

BIG BANG OR STEADY STATE ?

:

Astro 103 - Lecture 26
Lectures Lecture page Astro103 page

BIG BANG OR STEADY STATE?

1. Historical Backdrop

Early 20th century

Einstein and almost all scientists believed . . .

. . . Universe is static

. . . unchanging, not expanding

But then ...

Einstein's field equations

(General Relativistic version of Newton's Equations of Motion)

Universe is expanding!
... oops ... add 'cosmological constant!'

Hubble (1930's):

Discovers galaxies are receding from us
Measures the expansion

Einstein claims cosmological constant was the biggest blunder of his life. But recent evidence (1990's) indicates he might have been right after all!

2. Two Competing Theories of the Universe

Big Bang vs. Steady State

Both assume a homogeneous, isotropic Universe

no edge
no center

every part looks the same (on average, i.e. over a large enough volume)

Big Bang -

initial 'singularity' (beginning)

expansion

evolution:

**cooling, transformation of energy into matter, formation of structure,
all through normal physical processes.**

Steady State -

expansion (in current theory; original theory did not!)

no evolution

no beginning

no end

matter (Hydrogen) spontaneously created ``in between'' Galaxies

**NB: Both theories call for space to be spontaneously created ``in
between'' Galaxies.**

3. Which Theory is Right?

Ask:

Which theory has better predictive power?

and is the simplest

and invokes the fewest ``tooth fairies.''

Examples:

The microwave background

The remnant of a primordial explosion or what?

Elemental Abundances

Major triumph of the Big Bang is nucleosynthesis.

A ``primordial'' composition of elements, formed in the early, hot phase of the Universe, before further processing via fusion in stellar cores and supernova explosions.

Formation and evolution of structure (galaxies, clusters)

A natural part of the Big Bang.

Questions and Problems:

**- Are redshifts real? i.e., are they cosmological ``recession'' velocities?
If not, one could call into question the evidence for evolution.**

(no longer an issue)

**- What about the ``Horizon Problem'' and the ``Flatness Problem'' ?
(still an issue)**

Needed: One more ingredient to Big Bang model

Inflation!

4. The Cosmic Microwave Background Radiation (CMBR)

Predicted:

early 1940's (in Big Bang scenario)

Discovered:

**Penzias and Wilson (1964)
Bell Labs (ATT), New Jersey**

Today:

**COBE satellite measurements
T = 2.7 degrees (K)**

isotropic to 1 part in 105 (0.00001)

Two ways to think about what this radiation is:

(i) Primordial fireball was hot

(think: black body radiation)

- Universe cooled during expansion.

- What we see today is this ``cooled'' radiation left over from the Bang.

(ii) Or, we are looking back to just before the epoch when the Universe cooled enough to become 'transparent' to radiation.

We are seeing the `wall' which represents Universe when it was still opaque, but redshifted.

Historical Relevance

**Today almost all astronomers believe the Big Bang is the correct theory
...**

... to the point of being `gospel.'

**That's ok, since the theory works pretty well.
But there are still some very substantial problems and questions not answered by the theory.**

What isn't particularly healthy is the lack of a competing theory to question and challenge the status quo.

Analogy:

The debate between the Sun-centered and Earth-centered view of the Universe (or, at least the solar system).

The Sun-centered theory was better than the Earth-centered one, but still left a few observations left unexplained.

(e.g. Mercury's orbit General Relativity)

The point is: Keep questioning until the theory is simple, elegant, and continues to correctly predict new observations.

Q26.1 Which theory predicts that Hydrogen atoms are spontaneously generated in between galaxies as the galaxies expand away from each other? Do we think this is correct or incorrect?

- (a) The Big Bang Theory, erroneously.**
- (b) The Steady State Theory, erroneously.**
- (c) The Inflation Theory, correctly.**
- (d) The Earth-centered Theory, erroneously.**
- (e) The Theory of General Relativity, correctly.**

Q26.2 Why is it important to keep questioning the current paradigm of the Big Bang theory?

- (a) What else would we have to do? (It wouldn't be much fun if there weren't some controversy.)**
- (b) The theory of a static Universe could again gain wide-spread acceptance.**
- (c) There are still some observations and questions left unexplained and unanswered by the Big Bang theory.**
- (d) If we can't question the theory, it can't be right.**
- (e) The Big Bang must be questioned because the Steady State theory appears to better fit our observations.**

Lectures Lecture page Astro103 page

Last updated: Mar 20, 2001 Matthew A. Bershad

**below is a theory that could explain in part how MATTER FIRST
STARTED IN THE UNIVERSE**

**The Gravitational Instability Cosmological Theory
on the Formation of the Universe.**

When the Universe started to fall

**(1) The expansion of the universe is a result of the "heat"
contained therein;**

**(2) The source of the "heat" is the cosmic microwave radiation
background at 3 kelvin,
wherein;**

**(3) The microwave electro magnetic-nuclear energy was formed as a
result of the
interaction of two different static gravitational vacuum fields,
causing gravitational
instability and the motion, void of matter, at this time,**

wherein; static gravitational field (1) began to go into "motion".

**Therefore; only (2) static gravitational vacuum fields alone, being
void of $E=MC^2$**

could create $E=MC^2$; and the matter of the Universe.

When did motion first start ?

Science knows the formation of matter in our universe was caused by the forces of the universe.

These forces are:

- (1) The Force of Gravity**
- (2) The Force of Electro Magnetism**
- (3) The Strong Nuclear Force**
- (4) The Weak Nuclear Force**

At some point in time, motion within the universe, had to begin. The paradox would be, what force could cause motion to begin, without moving in its present space-time ?

The Gravitational Cosmological Theory was developed from an is rooted in the Einstein Steady State Theory and the Bondi-Gold-Hoyle Steady State Theory,

Wherein the Steady State Theory the universe, contains more protons than electrons that create dust particles and galaxies formed in their current locations and the cosmic matter is recycled therein at the center of the galaxy furnace.

When the Universe started to fall:

The Gravitational Instability Cosmological Theory on the Formation of the Universe.

The Theory:

- (1) The expansion of the universe is a result of the " heat ' contained therein;**
- (2) The source of the " heat " is the cosmic microwave radiation backround at 3 kelvin, wherein;**

(3) The microwave electro magnetic-nuclear energy was formed as a result of the interaction of two different static gravitational vacuum fields, causing gravitational instability and the motion, void of matter, at this time, wherein; static gravitational field (1) began to go into "motion".

Therefore; only (2) static gravitational vacuum fields alone, being void of $E=MC^2$

could create $E=MC^2$; and the matter of the Universe.

Q: When did this motion start?

A: If a neutral particle is able to resist the universal motion, in theory, that particle would go back in time. Going back in time the neutral particle would then enter into (1) of the (2) motionless-static gravity vacuum fields void of motion, and cause an unbalance and gravitational instability and this interaction would create motion and energy particles.

Q: What causes a gravitational static vacuum field in the first place ?

A: Pressure force is used to create a vacuum on Earth, perhaps an exotic something 100,000 times weaker than the force of gravity decays, causing a static-motionless gravity vacuum field.

Theory by

Rev Daniel Izzo July 2002

512 Onondaga Ave

Syracuse, NY 13207

Page 1

THE RED-SHIFT HYPOTHESIS FOR QUASARS:

IS THE EARTH THE CENTER OF THE UNIVERSE?

**I I Y. P. VARSHNI Dept. of Physics, University of Ottawa, Ottawa,
Canada (Received 14 February, 1977)**

Abstract. It is pointed out that Stephenson (1977) has used incorrect A_z , and has also made an arithmetical error, which invalidate his claims. Tests for randomness of quasar red-shifts clusters, using correct A_z , have been carried out and it is shown that at least for clusters having three red shifts or more, the distribution is highly non-random. The model of the Universe proposed by Stephenson does not in any way explain these red-shift clusters; it merely substitutes one paradox by another. In a recent paper (Varshni, 1976 ; hereafter to be referred to as Paper I) the author has presented evidence for 57 coincidences in the apparent red shifts of quasars. Stephenson (1977) has raised the valid question whether some such clustering could arise due to random processes. He proposes two tests, both of which are reasonable, to check this point. However, his results and conclusions are erroneous because he has used incorrect A_z in his calculations ; and has also made an arithmetical error. We show in this note that, when the correct A_z is used, the essential conclusions of Paper I are substantiated. All the necessary data required for calculations in the present paper are taken from Paper I. Test 1 We start from the binomial distribution formula $P_r = \frac{n!}{k!(n-k)!} p^k q^{n-k}$ In the present context, P_r is the probability of the chance coincidence of k red shifts, where the total number of possible intervals is $n=(\text{total range in red shift measured})/(\text{size of box, } A_z)$ and the total number of red shifts is r . Then the number of random coincidences having k or more red shifts (represented here by T_k) is given by $T_k = \sum_{i=k}^r P_i$ The first test of Stephenson (1977) compares the calculated values of T_k with the reported ones (Table I of Varshni, 1976). Care must be exercised in the determination of A_z to be used in Equation (2). In Figure 1, we show the case of two red shifts, z_1 and z_2 . Let 0.001 be the uncertainty in their values. We distinguish three cases: Astrophysics and Space Science 51 (1977) 121-124. AN Rights Reserved Copyright 0 1977 by D. Reidel Publishing Company, Dordrecht-Holland O Kluwer Academic Publishers Provided by the NASA Astrophysics Data System

Fig. 1. Determination of the size of box, Az , when there are two red shifts in a cluster. when the errors are additive. when the errors are subtractive. $(Az)_{,,}=O$, if the right-hand side of Equation (5) is negative. A reference to Figure 1 shows that case (b) is as probable as case (c), and the correct Az to use in the present situation is that given by case (a). When there are several red shifts, $Az = z(\text{highest}) - l \text{ lo west}$. Stephenson (1977) has used $(Az)_{,,}$, which invalidates his results. We may also point out that Stephenson is inconsistent in the value of $(Az)_{,,}$, that he uses. For $k=3$ he uses the correct value of $(Az)_{,,}$, but for $k=2$ he uses a value 0.004, while the correct value is 0.0053. In Table I we show, for $k=2,3$ and 4, the observed and calculated values of T , for the three cases, (a), (b) and (c). A comparison of columns 2 and 4 shows that for $k=3$ the clustering is highly non-random. Observed and calculated values of the number of clusters of red shifts k

Observed Az	Calculated $(Az)_{,,}$	Calculated $(Az)_{,,}$	Calculated $T_k(\text{average})$	T , for Az	(average) T , for $(A=)_{,,}$	$(A=)_{,,}$
2.257	0.0033	56.8	0.0053	78.8	0.0016	31.3
2.325	0.0046	12.1	0.0066	21.1	0.0026	4.6
2.49	0.0051	2.0	0.0071	4.6	0.0032	0.6

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Page 3

THE RED-SHIFT HYPOTHESIS FOR QUASARS, I1 123 Test 2 A
 comparison of the percentage of quasars which are in clusters with the percentage of the z space that these quasars occupy can be used as some sort of a measure of clustering. Stephenson (1977) claims that the sum of $(Az)_{,,}$ values is 16 % of the whole range of z for the 384 quasars. The number of quasars in Table I of Paper I is 40 % of the total. Actual calculations using the data given in Table I of Paper I give the following results for the three cases enumerated above. (a) $C(Az)=0.188$, i.e., 5.6% of the total z space. (b) $C(Az)_{,,} = 0.302$, i.e., 9 % of the total z space. (c) $C(Az)_{,,} = 0.089$, i.e., 2.7 % of the total z space. It is obvious that Stephenson has made some arithmetical error. The results given above show that 40% of the quasars occupy 5.6% of the whole range of z . Test 3. Chi-square test It is also of interest to apply the chi-square test to the present problem. In Table 11, for an average $Az = 0.0033$, we show the observed and calculated number of clusters for various values of k . We must note here that for $k = 5$ and 6, there is just one cluster for each, and the calculated value in each case is very small ; thus it is not very meaningful to include such cases in a X -square type of test. If we

exclude $k = 5$ and 6 , we find that $X^2 = 90.2$ and the significance level, $\alpha = 10^{-10}$. Clearly, the clustering is highly non-random. (Purely as an academic curiosity we may note here that α - if $k = 5$ and 6 are included - this is merely to indicate the direction of change in the value of α in the latter case.)

TABLE I1 Observed and calculated values of the number of clusters of red shifts for different k

k	Observed number of clusters	Calculated number of clusters
2	3	3
3	2	2

The foregoing tests clearly show that at least for $k = 2, 3$ the clustering of quasar red shifts (if there be one!) is highly non-random, thereby fully substantiating the paradox presented in Paper I. It is obvious that for the purpose of the arguments leading to the paradox, the exact number of clusters is not important.

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Page 4

In the last paragraph of his paper, Stephenson (1977) proposes an interesting but contrived model of the Universe to accommodate non-random clustering of quasar red shifts within the framework of the cosmological interpretation. However, this model merely replaces one unaesthetic possibility by another. Instead of having Earth at the center, now we have to assume that the Universe evolved in fits and starts of quasar production. The concept of preferred epochs for quasar production is hardly any more aesthetic than that of a preferred position for the Earth. There is no 'logical simplicity' or 'naturalness' about the proposed suggestion. Merely attributing the non-random clusters to a certain capricious property of the evolution of the Universe at certain arbitrary values of epochs does not explain anything. We are reminded of a well-known quotation due to Newton: 'To tell us that every species of things is endowed with an occult specific quality by which it acts and produces manifest effects, is to tell us nothing.'

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-----Does the
Redshift of light prove the Earth is at the center

of the universe ?

CRAZY BUT ALL INCOMING RED LIGHT IS UNIFORM IN ALL DIRECTIONS FROM EARTH.....

that could mean that the Earth is at the center of the universe ?

HOW AND WHY ?

(I think a uniform redshift of light happens because our massive Sun has dented space time and bends light..and red is bent more so ?)

Einstein's cosmological constant and the Redshift

Body: The cosmological constant (usually denoted by the Greek capital letter lambda: Λ) was proposed by Albert Einstein as part of his theory of general relativity to achieve a stationary universe.

After the discovery of Hubble redshift and the introduction of the expanding space paradigm Einstein abandoned the concept. New discoveries in the 1990s have, however, renewed interest in a cosmological constant.

The units of Λ are $1/\text{metre}^2$. The constant is proportional to the energy density of the vacuum ρ_{vac} :

where:

G is the gravitational constant

c is the speed of light in vacuum

The term can be positive, negative, or zero. It is the energy density of empty space: it can be thought of as the "cost" of having space. Because the cosmological constant has negative pressure, according to general relativity a positive cosmological constant Λ which means empty space has positive energy ρ_{vac} causes the expansion of empty space to accelerate (see dark energy for details).

Cosmologists generally describe the cosmological constant in units where unity would correspond to the value of the cosmological constant which would give a closed universe in the absence of matter. This normalised cosmological constant is usually called Ω_{Λ} . In a flat universe Ω_{Λ} corresponds to the fraction of the energy density of the Universe which is associated with the cosmological constant.

Contents [hide]

1 General relativity

2 Cosmological constant problem

3 See also

4 References

4.1 Further information

[edit]

General relativity

Einstein included the term in the equations for general relativity because he was dissatisfied that his equations apparently did not allow for a static universe. Gravity would cause a universe which was initially at dynamical equilibrium to contract. To counteract this possibility, Einstein added the cosmological constant. However, soon after Einstein developed his theory, observations by Edwin Hubble indicated that the universe appears to be expanding; this was consistent with a cosmological solution to the original general-relativity equations that had been found by the mathematician Friedman.

It is now thought that adding the cosmological constant to Einstein's equations does not lead to a universe at equilibrium because the equilibrium is unstable: if the universe expands slightly, then the expansion releases vacuum energy, which causes yet more expansion. Likewise, a universe which contracts slightly will continue contracting. These sorts of small contractions are inevitable, due to the uneven distribution of matter throughout the universe.

Since it no longer seemed to be needed, Einstein abandoned the cosmological constant and called it the "biggest blunder" of his life. It is likely that he was referring more to his methodology than to the constant itself. Ironically, the cosmological constant is still of interest, as observations made in the late 1990s of distance-redshift relations indicate that the expansion of the universe is accelerating. When combined with measurements of the cosmic microwave background radiation these implied a value of [1], a result which has been supported and refined by more recent measurements. There are other possible causes of an accelerating universe, such as quintessence, but the

cosmological constant is in most respects the most economical solution. Thus, the current standard model of cosmology, the Lambda-CDM model, includes the cosmological constant, which is measured to be on the order of 10^{-35}s^{-2} , or 10^{-47}GeV^4 , or 10^{-29}g/cm^3 , or about 10^{-120} in reduced Planck units.

[edit]

Cosmological constant problem

Unsolved problems in physics: Why doesn't the zero-point energy of vacuum cause a large cosmological constant? What cancels it out? A major outstanding problem is that most quantum field theories predict a huge cosmological constant from the energy of the quantum vacuum. This would need to be cancelled almost, but not exactly, by an equally large term of the opposite sign. Some supersymmetric theories require a cosmological constant that is exactly zero, which further complicates things. This is the cosmological constant problem, the worst problem of fine-tuning in physics: there is no known natural way to derive the infinitesimal cosmological constant observed in cosmology from particle physics.

One possible explanation for the small but non-zero value was noted by Steven Weinberg in 1987[2]. Weinberg demonstrated that if the vacuum energy took different values in different domains of the universe, then observers would necessarily measure values similar to that which is observed: the formation of life-supporting structures would be suppressed in domains where the vacuum energy is much larger, and domains where the vacuum energy is much smaller would be comparatively rare. This argument depends crucially on the reality of a spatial distribution in the vacuum energy density. There is no evidence that the vacuum energy does vary, but it may be the case if, for example, the vacuum energy is (even in part) the potential of a scalar field such as the residual inflaton (also see quintessence). It should be noted that there are good reasons to be wary of excessive use of the anthropic principle and much current research is aimed at understanding the observed vacuum energy density by non-anthropoc means.

As was only recently seen, by works of 't Hooft, Susskind[3] and others, a positive cosmological constant has surprising consequences, such as a

finite maximum entropy of the observable universe. (See the holographic principle.)

More recent work has suggested the problem may be indirect evidence of a cyclic universe predicted by string theory. With every cycle of the universe (Big Bang then eventually a Big Crunch) taking about a trillion (10¹²) years, "the amount of matter and radiation in the universe is reset, but the cosmological constant is not. Instead, the cosmological constant gradually diminishes over many cycles to the small value observed today." [1]

[edit]

See also

Einstein's universe

Vacuum energy

Lambdavacuum solution

Quantum electrodynamics

Zero-point energy

Friedmann equations

Fudge factor

[edit]

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[edit]

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Redshift of spectral lines in the optical spectrum of a supercluster of distant galaxies (right), as compared to that of the Sun (left).

Wavelength increases up towards the red and beyond, (frequency decreases)In physics and astronomy, redshift is a phenomenon in which the visible light from an object is shifted towards the red end of the spectrum. It is an observed increase in the wavelength, which corresponds to a decrease in the frequency of electromagnetic radiation, received by a detector compared to that emitted by the source. The corresponding shift to shorter wavelengths is called blueshift.

The phenomenon goes by the same name even if it occurs at non-optical wavelengths (e.g. gamma rays, x-rays and ultraviolet). At wavelengths longer than red (e.g. infrared, microwaves, and radio waves) redshifts shift the radiation away from the red.

Redshift typically occurs when a light source moves away from an observer, analogous to the Doppler shift which changes the frequency of sound waves. While observing this redshift has a number of terrestrial uses (e.g. Doppler radar and Radar guns), it is famously employed in astronomy where it is used as a diagnostic in spectroscopic astrophysics to determine information about the dynamics and kinematics (i.e. movement) of distant objects. This redshift phenomenon was first

predicted and observed in the nineteenth century as scientists began to consider the dynamical implications of the wave-nature of light. There is also a gravitational redshift which happens due to the time dilation that occurs in general relativity near massive objects. Most famously, redshifts are observed in the spectra from distant galaxies, quasars, and intergalactic gas clouds to increase proportionally with the distance to the object. This is generally considered to be one of the major forms of evidence that the universe is expanding, as predicted by the Big Bang model.

Contents [hide]

1 History

2 Measurement, characterization, and interpretation

3 Mechanisms

3.1 Doppler effect

3.2 Relativistic Doppler effect

3.3 Expansion of space

3.4 Gravitational redshift

4 Observations in astronomy

4.1 Local observations

4.2 Extragalactic observations

4.3 Redshift surveys

5 Effects due to physical optics or radiative transfer

6 References

6.1 Notes

6.2 Articles

6.3 Book references

7 External links

[edit]

History

Hippolyte Fizeau who first described the Doppler redshiftThe Doppler effect as applied to all kinds of waves, is named after Christian Andreas Doppler who proposed the effect in 1842.[1] The hypothesis was tested and confirmed for sound waves by the Dutch scientist Christoph Hendrik Diederik Buys Ballot in 1845.[2] Doppler correctly predicted

that the phenomenon should apply to all wave-phenomena, and in particular suggested that the varying colors of stars could be attributed to their motion with respect to the Earth.[3] While this idea turned out to be incorrect (stellar colors are indicators of a star's temperature, not motion), Doppler would later be vindicated by verified redshift observations.

The first Doppler redshift was described by French physicist Armand-Hippolyte-Louis Fizeau in 1848 who pointed to the shift in spectral lines seen in stars as being due to the Doppler effect. The effect is sometimes called the "Doppler-Fizeau effect". In 1868, British astronomer William Huggins was the first to determine the velocity of a star moving away from the Earth by this method [4].

The earliest occurrence of the term "red-shift" in print (in this hyphenated form), appears to be by American astronomer Walter S. Adams in 1908, where he mentions "Two methods of investigating that nature of the nebular red-shift"[5]. The word doesn't appear unhyphenated, perhaps indicating a more common usage or its German equivalent, Rotverschiebung, until about 1934 by Willem de Sitter[6].

Beginning with observations in 1912, Vesto Slipher discovered that most spiral nebulae had considerable redshifts[7]. Subsequently, Edwin Hubble discovered an approximate relationship between the redshift of such "nebulae" (now known to be galaxies in their own right) and the distance to them with the formulation of his eponymous Hubble's law[8]. These observations were eventually considered strong evidence for an expanding universe, and subsequently the Big Bang theory.[9]

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Measurement, characterization, and interpretation

A redshift can be measured by looking at the spectrum of light that comes from a single source (see idealized spectrum illustration top-right). If there are features in this spectrum such as absorption lines, emission lines, or other variations in light intensity, then a redshift can in principle be calculated. This requires comparing the observed spectrum to a known spectrum with similar features. For example, the atomic element hydrogen, when exposed to light, has a definite signature spectrum that shows features at regular intervals. If the same

pattern of intervals is seen in an observed spectrum occurring at shifted wavelengths, then a redshift can be measured for the object.

Determining the redshift of an object therefore requires a frequency- or wavelength-range. Redshifts cannot be calculated by looking at isolated features or with a spectrum that is featureless or white noise (random fluctuations in a spectrum).[10]

Redshift (and blueshift) may be characterized by the relative difference between the observed and emitted wavelengths (or frequency) of an object. In astronomy it is customary to refer to this change using a dimensionless quantity called z . If λ represents wavelength and f represents frequency (note, $\lambda f = c$ where c is the speed of light), then z is defined by the equations:

Measurement of redshift, z Based on wavelength Based on frequency

[citation needed]

After z is measured, the distinction between redshift and blueshift is simply a matter of whether z is positive or negative. According to the mechanisms section below, there are some basic interpretations that follow when either a redshift or blueshift is observed. For example, Doppler effect blueshifts ($z < 0$) are associated with objects approaching (moving closer) to the observer with the light shifting to greater energies. Conversely, Doppler effect redshifts ($z > 0$) are associated with objects receding (moving away) from the observer with the light shifting to lower energies. Likewise, Einstein effect blueshifts are associated with light entering a strong gravitational field while Einstein effect redshifts imply light is leaving the field.[citation needed]

[edit]

Mechanisms

A single photon propagated through a vacuum can redshift in several distinct ways. Each of these mechanisms produces a Doppler-like redshift, meaning that z is independent of wavelength. These mechanisms are described with Galilean, Lorentz, or general

relativistic transformations between one frame of reference and another.[citation needed]

Redshift Summary Redshift type Transformation frame Metric Definition[11]

Doppler redshift Galilean transformation Euclidean metric

Relativistic Doppler Lorentz transformation Minkowski metric

Cosmological redshift General relativistic tr. FRW metric

Gravitational redshift General relativistic tr. Schwarzschild metric

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Doppler effect

If a source of the light is moving away from an observer, then redshift ($z > 0$) occurs; if the source moves towards the observer, then blueshift ($z < 0$) occurs. This is true for all electromagnetic waves and is explained by the Doppler effect. Consequently, this type of redshift is also called the Doppler redshift. If the source moves away from the observer with velocity v , then, ignoring relativistic effects, the redshift is given by

(Since , see below)

where c is the speed of light. In the classical Doppler effect, the frequency of the source is not modified, but the recessional motion causes the illusion of a lower frequency.[citation needed]

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Relativistic Doppler effect

A more complete treatment of the Doppler redshift requires considering relativistic effects associated with motion of sources close to the speed of light. A complete derivation of the effect can be found in the article on the relativistic Doppler effect. In brief, objects moving close to the speed of light will experience deviations from the above formula due to the time dilation of special relativity by introducing the Lorentz factor .. into the classical Doppler formula as follows:

This phenomenon was first observed in a 1938 experiment performed by Herbert E. Ives and G.R. Stilwell, called the Ives-Stilwell experiment [12].

Since the Lorentz factor is dependent only on the magnitude of the velocity, this causes the redshift associated with the relativistic correction to be independent of the orientation of the source movement. In contrast, the classical part of the formula is dependent on the projection of the movement of the source into the line of sight which yields different results for different orientations. Consequently, for an object moving at an angle θ to the observer (zero angle is directly away from the observer), the full form for the relativistic Doppler effect becomes:

For the special case that the source is moving at right angles ($\theta = 90^\circ$) to the detector, the relativistic redshift is known as the transverse redshift, and a redshift is measured, even though the object is not moving away from the observer. Even if the source is moving towards the observer, if there is a transverse component to the motion then there is some speed at which the dilation just cancels the expected blueshift and at higher speed the approaching source will be redshifted.[13]

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Expansion of space

The current models of cosmology derived from general relativity show that space is (currently) expanding[9]. As a result, objects within the universe are moving relative to one another, creating the cosmological redshift. For $z < 0.1$ the effects of spacetime expansion are minimal and dominated by the peculiar motions which cause Doppler redshift.[14] This led to initial interpretation of the cosmological redshift by Slipher, Hubble and others as a Doppler effect, as their sources were nearby in astronomical terms. In reality, the properties of the source are not modified, but the photons will be stretched as the space through which they are traveling expands, increasing their wavelengths.[15] This effect is prescribed by the current cosmological model as an observable manifestation of the time-dependent cosmic scale factor (a) in the following way:[citation needed]

This type of redshift is also called the cosmological redshift or Hubble redshift. If the universe were contracting instead of expanding, we

would see distant galaxies blueshifted by an amount proportional to their distance instead of redshifted.[16]

These galaxies are not believed to be receding; instead, the intervening space is believed to be stretching, which is entirely different.[citation needed] The difference between the two is clearly illustrated by the Expanding Rubber Sheet Universe, a common cosmological analogy used to describe the expansion of space.[citation needed] If two objects are represented by ball bearings and spacetime by a stretching rubber sheet, the Doppler effect is caused by rolling the balls across the sheet to create peculiar motion. The cosmological redshift occurs when the ball bearings are stuck to the sheet and the sheet is stretched. (Obviously there are dimensional problems with the model, as the ball bearings should be in the sheet and cosmological redshift produces higher velocities than Doppler if the distance between 2 objects is far enough.)

Despite there being a distinction between redshifts caused by the velocity of the objects and the redshifts associated with the expanding universe, astronomers (especially professional ones) sometimes refer to "recession velocity" in the context of the redshifting of distant galaxies from the expansion of the Universe, even though it is only an apparent recession.[17] As a consequence, popular literature often uses the expression "Doppler redshift" instead of "cosmological redshift" to describe the motion of galaxies dominated by the expansion of spacetime, despite the fact that a "cosmological recession speed" when calculated will not equal the velocity in the relativistic Doppler equation.[18]. In particular, Doppler redshift is bound by special relativity so $v > c$ is impossible while, in contrast, $v > c$ is possible for cosmological redshift because the space which separates the objects (e.g., a quasar from the Earth) can expand faster than the speed of light.[19] More mathematically, the viewpoint that "distant galaxies are receding" and the viewpoint that "the space between galaxies is expanding" are related by changing coordinate systems. Expressing this precisely requires working with the mathematics of the Robertson-Walker metric. [20]

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Gravitational redshift

A graphical representation of the gravitational redshift due to a neutron star. In the theory of general relativity, there is also time dilation within a gravitational well. This is known as the gravitational redshift or Einstein Shift.[21] The theoretical derivation of this effect follows from the Schwarzschild solution of the Einstein equations which yields the following formula for redshift associated with a photon traveling in the gravitational field of an uncharged, nonrotating, spherically symmetric mass:

,
where

**G is the gravitational constant,
M is the mass of the object creating the gravitational field,
r is the radial coordinate of the observer (which is analogous to the classical distance from the center of the object, but is actually a Schwarzschild coordinate), and
c is the speed of light.**

The effect is very small but measurable on Earth using the Mossbauer effect and was first observed in the Pound-Rebka experiment [22]. However, it is significant near a black hole, and as an object approaches the event horizon, the red shift becomes infinite. It is also the dominant cause of large angular-scale temperature fluctuations in the cosmic microwave background radiation (see Sachs-Wolfe effect)[23].

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Observations in astronomy

The redshift observed in astronomy can be measured because the emission and absorption spectra for atoms are distinctive and well known, calibrated from spectroscopic experiments in laboratories on Earth. When the redshift of various absorption and emission lines from a single astronomical object is measured, z is found to be remarkably constant. (See Is the fine structure constant really constant?) Although distant objects may be slightly blurred and lines broadened, it is by no more than can be explained by thermal or mechanical motion of the source. For these reasons and others, the consensus among astronomers is that the redshifts they observe are due to some combination of the three established forms of Doppler-like redshifts. Alternative hypotheses are not generally considered plausible.[24]

Spectroscopy, as a measurement, is considerably more difficult than simple photometry which measures the brightness of astronomical objects through certain filters.[citation needed] When photometric data is all that is available (for example, the Hubble Deep Field and the Hubble Ultra Deep Field), astronomers rely on a technique for measuring photometric redshifts.[citation needed] Due to the filter being sensitive to a range of wavelengths and the technique relying on making many assumptions about the nature of the spectrum at the light-source, errors for these sorts of measurements can range up to $z = 0.5$, and are much less reliable than spectroscopic determinations. However, photometry does allow at least for a qualitative characterization of a redshift. For example, if a sun-like spectrum had a redshift of $z = 1$, it would be brightest in the infrared rather than at the yellow-green color associated with the peak of its blackbody spectrum, and the light intensity will also be reduced in the filter by a factor of $1+z$ (see K correction for more details on the photometric consequences of redshift).[citation needed]

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Local observations

In nearby objects (within our Milky Way galaxy) observed redshifts are almost always related to the line of sight velocities associated with the objects being observed.[citation needed] Observations of such redshifts and blueshifts have enabled astronomers to measure velocities and parametrize the masses of the orbiting stars in spectroscopic binaries, a method first employed in 1868 by British astronomer William Huggins[4]. Similarly, small redshifts and blueshifts detected in the spectroscopic measurements of individual stars are one way astronomers have been able to diagnose and measure the presence and characteristics of planetary systems around other stars.[25]

Measurements of redshifts to fine detail are also used in helioseismology to determine the precise movements of the photosphere of the Sun.[26] Redshifts have also been used to make the first measurements of the rotation rates of planets, velocities of gas of interstellar clouds[citation needed], the rotation of galaxies[citation needed], and the dynamics of accretion onto neutron stars and black holes[citation needed] which exhibit both Doppler and gravitational redshifts. Additionally, the temperatures of various emitting and absorbing objects can be obtained

by measuring Doppler broadening .. effectively redshifts and blueshifts over a single emission or absorption line.[citation needed] By measuring the broadening and shifts of the 21-centimeter hydrogen line in different directions, astronomers have been able to measure the recessional velocities of interstellar gas, which in turn reveals the rotation curve of our Milky Way.[citation needed] Similar measurements have also been performed on other galaxies, such as Andromeda.[citation needed] As a diagnostic tool, measuring redshifts is one of the most important spectroscopic measurements made in astronomy.[citation needed]

[edit]

Extragalactic observations

Physical cosmology

Age of the universe

Big Bang

Comoving distance

Cosmic microwave background

Dark energy

Dark matter

FLRW metric

Friedmann equations

Galaxy formation

Hubble's law

Inflation

Large-scale structure

Lambda-CDM model

Metric expansion of space

Nucleosynthesis

Observable universe

Redshift

Shape of the universe

Structure formation

Timeline of the Big Bang

Timeline of cosmology

Ultimate fate of the universe

Universe

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This box: view .. talk .. edit

The most distant objects exhibit larger redshifts corresponding to the Hubble flow of the universe. The largest observed redshift, corresponding to the greatest distance and furthest back in time, is that of the cosmic microwave background radiation; the numerical value of its redshift is about $z = 1089$ ($z = 0$ corresponds to present time), and it shows the state of the Universe about 13.7 billion years ago, and 379,000 years after the initial moments of the Big Bang[27].

The luminous point-like cores of active galactic nuclei (quasars) were the first "high-redshift" ($z > 0.1$) objects discovered before the improvement of telescopes allowed for the discovery of extended-source high-redshift galaxies. Currently, the highest measured quasar redshift is $z = 6.4$ [28], with the highest confirmed galaxy redshift being $z = 7.0$ [29] while as-yet unconfirmed reports from a gravitational lens observed in a distant galaxy cluster may indicate a galaxy with a redshift of $z = 10$ [30].

For galaxies more distant than the Local Group and the nearby Virgo Cluster, but within a thousand megaparsecs or so, the redshift is approximately proportional to the galaxy's distance. This correlation was first observed by Edwin Hubble and has come to be known as Hubble's law. Vesto Slipher was the first to discover galactic redshifts, in about the year 1912, while Hubble correlated Slipher's measurements with distances he measured by other means to formulate his Law. In the widely accepted cosmological model based on general relativity, redshift is mainly a result of the expansion of space: this means that the farther away a galaxy is from us, the more the space has expanded in the time since the light left that galaxy, so the more the light has been stretched, the more redshifted the light is, and so the faster it appears to be moving away from us. Hubble's law follows in part from the Copernican principle.[citation needed] Measuring the redshift is often easier than more direct distance measurements, so

redshift is sometimes in practice converted to a crude distance measurement using Hubble's law.[citation needed] Gravitational interactions of galaxies with each other and clusters cause a significant scatter in the normal plot of the Hubble diagram.[citation needed] The peculiar velocities associated with galaxies superimpose a rough trace of the mass of virialized objects in the universe.[citation needed] This effect leads to such phenomena as nearby galaxies (such as the Andromeda Galaxy) exhibiting blueshifts as we fall towards a common barycenter[citation needed], and redshift maps of clusters showing a Finger of God effect due to the spread of peculiar velocities in a roughly spherical distribution.[citation needed] This added component gives cosmologists a chance to measure the masses of objects independent of the mass to light ratio (the ratio of a galaxy's mass in solar masses to its brightness in solar luminosities), an important tool for measuring dark matter.[citation needed]

For more distant galaxies, the relationship between current distance and observed redshift becomes more complex. When one sees a distant galaxy, one is seeing the galaxy as it was sometime in the past, when the expansion rate of the Universe was different from what it is now. At these early times, we expect differences in the expansion rate for at least two reasons:

The gravitational attraction between galaxies has been acting to slow down the expansion of the Universe since then.

The possible existence of a cosmological constant may be changing the expansion rate of the Universe.[citation needed]

Recent observations[citation needed] have suggested the expansion of the Universe is not slowing down, as expected from the first point, but accelerating (see accelerating universe). It is widely, though not quite universally, believed that this is because there is a form of the cosmological constant due to a scalar field dubbed dark energy[citation needed]. Such a cosmological constant also implies that the ultimate fate of the Universe is not a Big Crunch, but instead will continue to exist foreseeably (though most physical processes within the Universe will still come to an eventual end).[citation needed]

The expanding Universe is a central prediction of the Big Bang theory. If extrapolated back in time, the theory predicts a "singularity", a point

in time when the Universe had infinite density. The theory of general relativity, on which the Big Bang theory is based, breaks down at this point.[citation needed] It is believed that a yet unknown theory of quantum gravity would take over before the density becomes infinite.[citation needed]

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Redshift surveys

Main article: Redshift survey

Rendering of the 2dFGRS dataWith the advent of automated telescopes and improvements in spectroscopes, a number of collaborations have been made to map the universe in redshift space. By combining redshift with angular position data, a redshift survey maps the 3D distribution of matter within a field of the sky. These observations are used to measure properties of the large-scale structure of the universe. The Great Wall, a vast supercluster of galaxies over 500 million light-years wide, provides a dramatic example of a large-scale structure that redshift surveys can detect[31].

The first redshift survey was the CfA Redshift Survey, started in 1977 with the initial data collection completed in 1982.[32] More recently, the 2dF Galaxy Redshift Survey determined the large-scale structure of one section of the Universe, measuring z-values for over 220,000 galaxies; data collection was completed in 2002, and the final data set was released 30 June 2003.[citation needed] (In addition to mapping large-scale patterns of galaxies, 2dF also established an upper limit on neutrino mass.) Another notable investigation, the Sloan Digital Sky Survey (SDSS), is ongoing as of 2005 and aims to obtain measurements on around 100 million objects.[citation needed] SDSS has recorded redshifts for galaxies as high as 0.4, and has been involved in the detection of quasars beyond $z = 6$. The DEEP2 Redshift Survey uses the Keck telescopes with the new "DEIMOS" spectrograph; a follow-up to the pilot program DEEP1, DEEP2 is designed to measure faint galaxies with redshifts 0.7 and above, and it is therefore planned to provide a complement to SDSS and 2dF.[citation needed]

THE CfA REDSHIFT SURVEY

The CfA Redshift Survey was started in 1977 by Marc Davis, John Huchra, Dave Latham and John Tonry. The First CfA Survey, completed in 1982, (Huchra, Davis, Latham and Tonry, 1983, ApJS 52, 89) had as its goal the measurement of radial velocities for all galaxies brighter than 14.5 and at high galactic latitude in the merged catalogs of Zwicky and Nilson (the UGC). This survey produced the first large area and moderately deep maps of large scale structure in the nearby universe, as well as the first crude but truly quantitative measurements of the 3-D clustering properties of galaxies. Redshifts are the simplest link to determine galaxy distances. A description of the redshift is given here [THE REDSHIFT](#) . Basically, since in most places outside the cores of galaxy clusters or in the very, very local Universe (the Local Group of Galaxies), the expansion of the universe, commonly called the Hubble Flow, is smooth, redshift is a surrogate for distance:

$$\text{Distance} = \text{velocity}/(\text{Hubble's Constant}) = V/H_0$$

So the measurement of a galaxy's redshift gives you an estimate of that galaxy's distance --- thus allowing astronomers to map the nearby Universe.

The second CfA survey (CfA2) was started by John Huchra and Margaret Geller in the winter of 1984/5. Between 1985 and 1995, we and our students and co-workers measured relative distances via redshifts for about 18,000 bright galaxies in the northern sky.

The CfA Survey Data.

Here's a plot of the sky distribution of the galaxies in the CfA Redshift Survey (J. Huchra and M. Geller 1998). Each point represents a galaxy in the northern celestial hemisphere that is brighter than an apparent blue magnitude of 15.5 and with a measured redshift inside 15,000 km/s. The nearest galaxies are shown in red, followed by blue, magenta, cyan and green.

Red $V < 3000$ km/s

Blue $3000 < V < 6000$ km/s

Magenta $6000 < V < 9000$ km/s

Cyan $9000 < V < 12000$ km/s

Green $12000 < V$ km/s

The large red area at the center of the map (12 hours, +10 degrees) is the dense central region of the Virgo Cluster of galaxies which is the core of the Local Supercluster (see below). The dark blue points which dominate the RHS of the map (0-4 hours +30 to +40 degrees) show the location of the Pisces-Perseus Supercluster, which has been well studied by Giovanelli & Haynes. The cyan points at 15 hours running almost from the equator to +40 degrees declination are the Hercules Supercluster studied by Pauline Barmby and myself. The blank areas running more or less north-south and looping over the north celestial pole are the regions of the sky inaccessible to optical surveys due to dust extinction when looking through the Milky Way, aka the "Zone of Avoidance." (see 2MASS for how to fix this!)

The first slice of the CfA Survey.

Redshift surveys are ways of mapping the distribution of galaxies around us. We use redshift as the measure of the radial coordinate in a spherical coordinate system centered on the Milky Way. Below is the "slice of the Universe" that represents the first set of observations done for the CfA Redshift Survey in 1985 by Valerie de Lapparent, Margaret Geller and myself. These are spectroscopic observations of about 1100 galaxies in a strip on the sky 6 degrees wide and about 130 degrees long. We are at the apex of the wedge. The radial coordinate is redshift, measured in kilometers per second, with the current best conversion (see "Hubble Constant" below) of about 20 kilometers per second per million light years. That means the outer arc of the plot is at a distance

of about 700 million light years. The angular coordinate is the right ascension, or the celestial equivalent of longitude.

This initial map was quite surprising, showing that the distribution of galaxies in space was anything but random, with galaxies actually appearing to be distributed on surfaces, almost bubble like, surrounding large empty regions, or "voids." You can get a clean postscript version of this figure here . If you use this or any other image from this site, please credit the Smithsonian Astrophysical Observatory and the appropriate authors.

Here's the map with six contiguous 6 degree slices in the northern galactic cap. The structure running all the way across between 8 hours and 17 hours RA and 5,000 and 10,000 km/s is called the "Great Wall," perhaps the largest single structure yet detected in any redshift survey. Its dimensions are about 600x250x30 million light years, sort of like a giant quilt of galaxies across the sky. (see Geller and Huchra 1989, Science 246, 897.)

The Great Wall itself can be viewed in this simple planar projection of all galaxies in the CfA Survey with velocities between 6,500 and 11,500 km/s in the north galactic cap. Galaxies with velocities between 6,500 and 8,500 km/s are plotted as red points and those between 8,500 and 11,500 are blue. Because the Great Wall is slightly tilted in velocity space (see the previous figure), the higher velocity end dominates the eastern portion of the figure. The Great Wall is a surface that has, as expected, considerable two-dimensional structure --- embedded clusters and groups of galaxies as well as some filaments and other, more amorphous structures - basically both low and high density regions (see, for example, Ramella, Geller and Huchra ApJ 384, 404, 1992). The Coma Cluster is the dense region right near the center of the plot (13h and +29d).

The redshift distribution of the CfA2 survey can also be seen in this polar projection of the redshifts for all the galaxies in the CfA2 survey out to 12,000 km/s. This is a section of a cylinder in equatorial coordinates looking down from the north pole to the equator with a height of 12,000 km/s and a radius of 12,000 km/s. The major structures seen are again the Local Supercluster just above the middle of the plot, the Great Wall cutting from 9 hours and 5,500 km/s to 15 hours and 9,000 km/s and the Pisces-Perseus supercluster centered around 1 hour and 4,000 km/s. The geometry of this projection is similar to that of a hockey puck.

The combination of several new surveys also provides a new view of the Local Supercluster. The above plot shows the all-sky distribution of all the galaxies in ZCAT with heliocentric velocities less than 3000 km/s. This set is essentially made up of objects from the CfA Survey in the north, the SSRS2 survey in the south, the ORS survey in regions not covered by the others plus the IRAS 1.2-Jy survey all over, especially at low galactic latitudes (the small points sprinkled throughout the map). Despite the poor coverage at low galactic latitudes, the LSC and the central regions around its core, the Virgo Cluster, stand out quite dramatically.

To give you some idea of the statistical characteristics of the CfA2 catalog, these two plots show the count statistics ($\log N - \log S$) and the V/V_m statistics for the CfA2 catalog above $|b| = 30$ degrees $\log(n) - \log(s)$, V/V_m . For a uniform distribution in Euclidean space, V/V_m should be 0.50. These plots show first, an excess of brighter galaxies relative to a normalization at $m_{pg} = 13.5$, which has long been associated with the presence of the local supercluster, and second, an apparent slight excess below 15th magnitude that may be associated with the Great Wall. Note that the plots are both integral statistics (it's difficult to define V/V_m for differential counts!) Part of the excess at faint magnitudes may also be due to nonlinearities in the Zwicky-Nilson magnitude scale (e.g. Huchra 1976, AJ 81, 952 and many following references). The luminosity function for the catalog (a measure of the selection function), calculated using the simple V/V_m method (Schmidt 1968; Huchra & Sargent

1973), is given in $\log \phi$, where ϕ is the number density of galaxies per luminosity interval, i.e. the number of galaxies per magnitude interval per cubic Megaparsec. This is computed for a an area of the sky given by the boundaries (0-90d, 8h-17h, -2.5-90d, 20h-4h), which covers 36.15% of the sky, and assumes a Virgo infall of 250 km/s, $H_0=75$ km/s/Mpc, and an extinction correction of 0.15csc(b). There are 13,977 galaxies in this subset catalog.

Here is a link to the CfA Redshift Catalog description: ZCAT. Currently you can access the CfA Redshift Survey data data at this website and the main ZCAT2000 catalog via anonymous ftp in the directory pub/catalogs on:

fang-ftp.cfa.harvard.edu

It is necessary to download the file via ftp because of its size. There is a README file describing the data stored there available for public use, sources for redshifts etc. and information about how to reference these if you do use them. The compressed public version of the CfA Redshift Catalogue is in "velocity.dat.gz". There are also files for the CfA1 survey data (cfa1.dat), the published CfA2 slices, and subdirectories for the IRAS 1.2 Jy sample, the UZC, the ORS and many other available redshift surveys.

Some of the small catalogs can be downloaded directly from the web. These are:

CfA1

CfA1 -- Version of June 2000

CfA2 +30 Slice

CfA2 +36 Slice

CfA2

ZBIG

CfA AGN List

CfA1 Seyfert Galaxies

In addition, here are a few of the parent catalogs like the Uppsala General Catalogue (UGC) of Nilson, and a machine readable version of the merged Zwicky-Nilson Catalogue:

**Uppsala General Catalogue
Merged Zwicky-Nilson Catalogue
JPH's AGN lists can also be obtained from his home page**

JPH Homepage

The sources for the CfA surveys and for ZCAT and the ancillary catalog redshifts can be found in a downloadable TeX file:

ZSOURCE

or as a postscript file:

ZSOURCE.PS

The last update of this file is from April 20 of 2005. Questions about sources should be addressed to J. Huchra. If you have published a paper or database that is **not in our list, please let me know wo we can include it!**

Finally, here is a partial list of the template stars and galaxies we use for velocity checks and studies:

TEMPLATES

and a useful, short list of standard stars for spectrophotometry:

SPECTROPHOTOMETRIC STANDARDS

Nowadays, most of the actual templates used are synthetic and can be obtained from Doug Mink or Mike Kurtz of the SAO Telescope Data Center.

If you have questions about the use of the Catalogue or anything else here please contact me at the e-mail address below. I won't promise a prompt response but I will promise a curteous one! Nathalie Martimbeu (nmartimb@cfa.harvard.edu) is also responsible for corrections and information, and, if you don't get me try her.

Take Care!

John Huchra

John P. Huchra <huchra@cfa.harvard.edu>

Red Shift of a Distant Super Cluster of Galaxies

BAS 11 is a super cluster of more than twenty dense galaxy clusters. In all, it contains over 10,000 galaxies. It is located just below (to the south) the handle of the big dipper. It is about one billion light years away.

The core of a star emits a continuous spectrum of light. As this light passes through the cooler outer atmosphere of the star, the atoms there absorb some of it. This light is absorbed by electrons which are excited to higher energy levels in the atoms. Since the energy levels are quantized, only photons with the corresponding amount of energy will be absorbed. Thus, the light is absorbed only at certain wavelengths. These appear as dark lines on top of a continuous spectrum of light emitted by the star and is called the absorption spectrum.

The image in the file, REDSHIFT.JPG shows a simulation of the absorption spectrum of the sun and of BAS 11. (Actual data is not taken with color photography.) The dark lines in the red and in the blue is from absorption by hydrogen atoms. The dark line in the yellow is from sodium atoms. The dark lines in the green are from magnesium and iron atoms. The dark lines in the violet are from hydrogen, iron, calcium, and potassium atoms.

The shift in the spectrum of BAS 11 from the spectrum of the sun is clearly seen. The lines from BAS 11 are all shifted towards the red end of the spectrum. This shift (called the "red shift") is toward longer

wavelengths (smaller frequencies) and is caused by the Doppler effect. The shift in frequency is about 7%. This means that BAS 11 is traveling away from us at about 7% of the speed of light.

Sep 24, 2004

What is the Electric Universe?

The "Electric Universe" is a hypothesis, a new way of interpreting scientific data in the light of new knowledge about plasma and electricity. In this interpretation, gravity plays a secondary role behind the far more powerful electric force, and electrified plasma in the laboratory provides a model for comprehending newly-discovered phenomena in space.

As laboratory plasma "pinches" into filaments, sheets, and cells, or isolates charged bodies from their electrical environment, it provides vital clues. In plasma, electric currents will sort material into shells of like elements, or generate discharge configurations--ranging from

radial streamers and spiraling filaments to exotic symmetrical configurations--all appearing to mimic what we now see in faraway corners of the cosmos.

The top image above is a Hubble Telescope image of the planetary nebula NGC 6751. The experimental counterpart is provided by a plasma focus device (below left), which concentrates electrical energy in an explosive discharge (below right), mimicking the structure of NGC 6751.

In the electric universe the systems of planets and moons, stars, and galaxies have their origin in this proven ability of electricity to generate structure and rotation in plasma. Within particular regions of aggregating mass, gravity can take over only as the electric forces approach equilibrium. The electric universe hypothesis is rooted in direct observation. The extraordinary configurations now seen in space are the result of charge differential, where gravity cannot compete with the electric forces.

Such structures as NGC 6751 are telling us it is no longer tenable to build a cosmology on the idea that neutral matter is the "starting point". All variations on that theme will require gravitationally-driven generators to "separate charge". But it is not logical to ask the weak force of gravity to produce the strong force of electricity from which galactic-scale gravity defying motions arise. Direct observation implies that electrified--not neutral--matter, is the fundamental or original state of the universe.

To be sure, the human perspective is limited, and the origin of the universal electric potential will likely remain as elusive to the cosmic electricians as the origin of matter is to orthodox cosmologists. In both cases, for now at least, the theorists must be satisfied with the proclamation, "It just is!"

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**Electric universe (concept)
From Wikipedia, the free encyclopedia**

A sunspot. Juergens' Electric Sun compares solar granules to the electrical breakdown in an anode glow in a gas discharge tubeThe Electric Universe is an interdisciplinary non-mainstream approach to astronomy, [1] in which proponents claim that:

Electricity plays a more significant role in the shaping of the universe than generally acknowledged, and the Sun and stars are powered by an external electric current.

Electrical discharges in the form of megalightning and caused by electrical discharge machining, is responsible for many planetary features including arachnoids, chaos terrain, craters, Martian spiders, and rilles.

Standard physical cosmology should be rejected in favoring of nonstandard plasma cosmology.

The big bang, solar nebula hypothesis, black holes, dark energy, dark matter and standard models of planetary formation are not based in reality [2].

Historically, cosmic electrical activity has been much greater than we see today. As an example, proponents cite rock art and various megaliths with the claim that they represent an intense ancient auroral-like phenomenon [3]. Incorporating aspects of Velikovskian catastrophism and comparative mythology gives rise to various ancient histories, mythologies and iconography [4].

Critics such as skeptics and members of the mainstream scientific community have labeled the Electric Universe a pseudoscience [5], notably that there is neither sufficient evidence, mathematical models, nor peer review, to treat it as a scientific theory. The concept is ignored or rejected by mainstream scientists, though proponents consider it a protoscience [6]. Proponents feel that dogmatic lock-in to a single theory (relativity and/or big-bang cosmology) has effectively locked out alternate theories both from receiving mainstream attention (in the media or via peer review) and from securing adequate sources of funding for further research and development of the theory [7].

Contents [hide]

1 Claimed significance of electricity

1.1 Ralph Juergens' "Electric Sun"

1.2 Electric Weather

1.3 Charge Separation and Double-Layering in Space

1.4 Z-Pinch in the Electric Universe model

1.4.1 Z-pinch Defined

1.4.2 Z-Pinch Formative Processes in the Cosmos

1.5 Cosmic Electrical Discharge Machining (EDM)

2 Rejection of Big Bang cosmology

3 Electric Universe proponents' predictions regarding Deep Impact

4 History

5 Notes

6 References

7 See Also

8 External links

8.1 Electric Universe support

8.2 Electric Universe opposition

8.3 Other Related Resources

[edit]

Claimed significance of electricity

Electric Universe adherents claim that electricity plays a more significant role in shaping the Universe than is generally acknowledged, basing their views on the work of a number of earlier researchers (see below). For example:

Electric Universe researcher, Wal Thornhill, noted that "The far-sighted Kristian Birkeland (1867-1917) wrote, 'According to our manner of looking at the matter, every star in the universe would be the seat and field of activity of electric forces of a strength that no one could imagine'" [8]

Earl Milton wrote: "In August 1972 Ralph Juergens introduced the concept of the electrically powered Sun.(1a) He was inspired by Immanuel Velikovsky's contention that electromagnetic forces played a crucial role in sculpting the surfaces and shaping the orbits of the bodies of the solar system; (1b) by Melvin Cook's attempts to unify the electromagnetic and gravitational fields; (1c) and by the voluminous literature of Charles Bruce intimating that the phenomena observed in stellar atmospheres could be described adequately by an electrical discharge model .(1d)" [9]

[edit]

Ralph Juergens' "Electric Sun"

Glow discharge tubes and their characteristics: 1. Cylindrical 2. "funnel-shaped" 3. Spherical (click to enlarge)An electrical engineer with no astronomy background, Ralph Juergens wondered what might happen to a cosmic plasma if an electric current flowed through it, and it behaved like a plasma in a glow discharge tube, as described by earlier scientists such as Irving Langmuir. He declared his idea for the energy source of the sun to be the "Electric Sun".

Juergens felt that a glow discharge tube, in particular the anode and anode glow, shared characteristics with the Sun (the anode) and its atmosphere (the anode glow), in particular that the Sun's "granules might not be akin to certain highly luminous tufts of discharge plasma variously described in the literature as anode glows, anode tufts, and anode arcs".[10]

The Electric Sun has been used by many groups which oppose the mainstream astrophysical explanations of stellar interiors and stellar atmospheres. These have included creationists who have used the idea to demand a younger age for the sun which corresponds to their views of a 6000 year old universe[11]. In general, the idea hasn't been able to even elicit a response from the scientific community because of its

perceived inadequacies as an explanation for understood phenomena in stellar physics. One skeptic who has commented on the idea has said, "Suffice to say for now that if science is what you are looking for, you will find none where the electric sun is concerned, save that which shows it to be an untenable hypothesis." [12]

Skeptics contend that, among other things, there are serious physical and observational difficulties associated with electricity as the proposed power source of stars, and that it is not consistent with the observed distribution of stars on the Hertzsprung-Russell Diagram. Proponents believe that abundant evidence of electricity in space can be observed, and that the Hertzsprung-Russell diagram is not useful as an observational tool for understanding stars, or at the least, requires revision if the underlying tenets are incorrect [13].

[edit]

Electric Weather

A pair of waterspouts off the BahamasThe Electric Universe model posits that the Sun and the Earth are involved in a cosmic scale electrical exchange via the Birkeland currents [14]. See also Geomagnetic storm, Coronal mass ejection, and Solar Flare.

EU theorists posit that this electrical exchange may in fact charge and/or drive many of the weather systems on Earth. Specifically, it is posited that hurricanes [15], water spouts [16], landspouts, dust devils [17], tornados [18] and lightning are all in fact electrical discharge phenomena. The latter is viewed as a catastrophic electrical field breakdown and a direct current exchange between the atmosphere and the "ground." The former are viewed as similar but much much slower (non-catastrophic) tube-like discharges that subsequently create a turbulence vortex around the central charge sheath.

[edit]

Charge Separation and Double-Layering in Space

The Electric Universe model, unlike classical physics, posits that charge naturally separates in space [19]. This effectively leads to double-layering in space, as well as cosmic charge sheath formation, and possibly also a z-pinch effect along Birkeland current filaments [20].

[edit]

Z-Pinch in the Electric Universe model

[edit]

Z-pinch Defined

In fusion power research, the Z-pinch, or zeta pinch, is a type of plasma confinement system that uses an electrical current in the plasma to generate a magnetic field that compresses it. ... Specifically, Z-pinch relies on Lenz's Law, that a magnetic field will induce a current in a conductor that itself creates a magnetic field in the opposite direction.

[edit]

Z-Pinch Formative Processes in the Cosmos

In the Electric Universe model, the Pinch or Z-pinch phenomenon is thought to drive solar, stellar and cosmic formations [21] including black holes, pulsars, rotation-powered pulsars, x-ray bursters, active galaxies, radio galaxies, blazars. Rings, disks and jets are claimed to be evidence for the electric universe.

The Electric Universe proponents believe that cosmic, stellar and solar formation is caused by Pinch phenomena in the plasma that permeates the cosmos. They state that excessive electrical load on the electrical structure of the cosmos (cosmic scale circuits of filamentary Birkeland currents [22]) causes instabilities, leading to deformation of the current, and a vortex or spiral shape around a pinched middle. This process has been modeled via computer simulation by engineers using simple formulas [23].

[edit]

Cosmic Electrical Discharge Machining (EDM)

Mamers Vallis rille on Mars. Conventionally explained as the result of stretching of the Martian crust in the distant past, in the Electric Universe model, it is explained as the result of large EDM discharges that vaporized and/or dispersed material. photo: NASA Proponents of the model believe many "anomalous" features on planetary bodies in our solar system are due to electrical causes (specifically, EDM - vaporization and catastrophic erosion by strong electrical discharge).

Many of these features have more conventional geological/planetological explanations as well. Such features include:

"Channels" or rilles displayed prominently on many rocky bodies in the solar system. Often these channels even flow "against gravity." Sometimes these channels are carved perpendicular to other channels. These types of landform are not readily explained by simple fluid carving, however ground motion (e.g. from plate tectonics has produced similar anomalies on Earth, for example in the auriferous gravel beds of eastern California or the New River of West Virginia, which flows in the reverse direction from its original course [citation needed]). Some anomalous channels, such as Valles Marineris and Mamers Vallis of Mars, are explained conventionally via stretching of the planetary crust. Electric Universe advocates believe these features were carved via electrical discharge machining.

Martian "spider" formations that proponents claim appear to very closely resemble Lichtenberg figures produced via electrical discharges in the lab [24] [25].

Large multi-rille systems so overlapping as to appear jumbled and "chaotic" such as Chaos terrain and Venus' arachnoids.

Clean debris-free cratering and crater-chaining [26] (Such chained craters are conventionally explained via high-energy impact of material objects, where the impactor is buried or vaporized in the impact.)

Overlapping cratering, possibly with strong electrical features (arcing, etc.) [27]

Cratering with raised mounds, buttes, and/or layering in the middle, where no volcanic activity or history is indicated [28]

Spherules (small to medium sized nearly perfectly round beads of metal, glass or rock) found in or near electrical craters, arcs, rilles, etc.

On Mars, these are called "blueberries," for lack of a better term. They are believed to be related to similar structures found on Earth (Moqui balls or Moqui Marbles, sometimes referred to as Thunderballs [29]).

Both structures are difficult to explain classically. They are often hollow, sometimes contain a loose internal "ball," in some rare cases, they even contain pressurized oil! It is believed by proponents of the Electric Universe model that these are created by a large-scale electrical discharge (Lightning) in a process similar to Fulgurite formation [30].

Similar structures have been created in the lab using electrical discharge processes [31].

Small-scale structures similar to many "anomalous" features found on Mars have already been created via electrical processes in labs on Earth [32]; within the EU framework these analogues are thought to explain the very much larger structures found on Mars.

[edit]

Rejection of Big Bang cosmology

Electric Universe proponents generally support plasma cosmology as an alternative to the Big Bang [33].

[edit]

Electric Universe proponents' predictions regarding Deep Impact

Image of the comet Temple-1 taken by Deep Impact. photo: NASA On 2005-07-04, the Deep Impact mission collided with Comet Tempel-1. The day before, advocates of the Electric Universe concept made several specific predictions based on their ideas that comets are electrically charged. Of these, 5 predictions containing 9 points are notable (itemised for ease of reading):

- (1) "The discharge and/or impact may initiate a new jet on the nucleus**
- (2) (which will be collimated - filamentary - not sprayed out) and (3) could even abruptly change the positions and intensities of other jets due to the sudden change in charge distribution on the comet nucleus."**
- (4) "The impact/electrical discharge will be into rock, (5) not loosely consolidated ice and dust. (6) The impact crater will be smaller than expected."**
- (7) "Tempel 1 has a low-eccentricity orbit. Therefore its charge imbalance with respect to its environment at perihelion is low. (It is a "low-voltage" comet.) Electrical interactions with Deep Impact may be slight, but they should be measurable if NASA will look for them. They would likely be similar to those of Comet Shoemaker-Levy 9 prior to striking Jupiter's atmosphere: The most obvious would be a flash (lightning-like discharge) shortly before impact."**
- (8) "An abundance of water on or below the surface of the nucleus (the underlying assumption of the "dirty snowball" hypothesis) is unlikely."**
- (9) "The (electric comet) model predicts a sculpted surface, distinguished by sharply defined craters, valleys, mesas, and ridges-the**

opposite of the softened relief expected of a sublimating “dirty snowball”.

Reports following Deep Impact have noted the following in relation to the predictions:

1. "A change in the coma morphology was observed after impact; the nuclear jet structures changed as a result of the impact, and new jet structures were produced" [34] While EU proponents attribute this to an electrical effect, it could also be explained by a shift in the loosely consolidated structure.

2. "...an ejecta curtain of hot gas and dust emerged from the crater [..] Several bright rays are seen emanating from the somewhat asymmetric cone." [35]; Electric Universe proponents maintain that "rays" indicate filamentary characteristics, rather than jets of material directed by crevices or voids in the comet.

5. "They also report that Tempel 1 consists largely of extremely fine particles that seem to be very loosely bound together: in other words, the comet is more like a pile of powder than a solid rock." [36]

5. "There was much more material in the curtain than expected indicating that the strength of the material lying within tens of meters of the comet's surface is very weak and powdery." [37] A powdery surface would be inconsistent with the EU suggestion that the comet is highly electrically charged, as electrostatic repulsion would have driven off any loosely consolidated powder or dust in the distant past. EU proponents posit that the fine powder is a product of a process akin to electrical discharge machining of the comet's rocky surface [38].

5. However, it should be noted there is other evidence which indicates a harder surface; "Swift scientists have seen a quick and dramatic rise in ultraviolet light, evidence that the Deep Impact probe struck a hard surface, as opposed to a softer, snowy surface"[39].

6. .. the Deep Impact impact could create a crater 50m to 150m in diameter"[40], but no post-impact crater sizes appear to have been published, although some estimates have suggested that it may have been "large"[41], others that the size remains "unresolved"[42].

7. "As the impactor entered the nucleus, or shortly thereafter, a brilliant flash, lasting less than two tenths of a second, appeared probably as the impactor and part of Tempel 1 vaporized. The first flash was followed by a second presumably originating deeper within the comet. The second flash was brighter still and it momentarily

saturated some pixels in the instruments on the flyby spacecraft"[43]. Deep Impact co-investigator Pete Schultz said "First you see a small flash, and then there's a delay. Then there's a big flash, and then the whole thing breaks loose," Schultz notes. This explosion pattern does not precisely match any of the simulations that attempted to model how the comet would react when hit with the spacecraft. Schultz says they will use the data collected today to figure out how the structure of the comet led to the impact pattern they witnessed.[44]" Proponents of EU assert that the double-flash was due to electrical discharge to the spacecraft, but other more conventional explanations (such as vaporization of the impactor followed by spallation of a hot dust cloud) are at least as plausible.

8. "SWAS operators were puzzled by the lack of increased water vapor from Tempel 1. Post-impact measurements showed the comet was releasing only about 550 pounds of water per second-an emission rate very similar to pre-impact values, and less than seen by SWAS during natural outbursts in the weeks before the impact.[45]" Also, "Since the visible images have a higher spatial resolution, we use those images to calculate the extent of ice on Tempel 1's surface. That turns out to be a small fraction of the surface, only 0.5%. ... What is significant is that the extent of this ice on Tempel 1's surface is not sufficient to produce the observed abundance of water and its by-products in the comet's coma. The team thus concludes that there are sources of water from beneath the comet's surface that supply the cometary coma as well.[46]"

9. "The scarp edge marked by arrows is about 10-20 m above the lower and older terrain. It appears bright since it is catching direct sunlight." http://deepimpact.jpl.nasa.gov/gallery/PT_8e.html (click link for picture)

The controversy was featured on Wired.com, and Electric Universe proponents have made their own comments [47].

[edit]

History

Proponents of the Electric Universe claim its origins lie in the work of several researchers who featured electricity in their own theories. Some of them, for example Alfvén, might not have endorsed it. These people include:

Kristian Birkeland (1867-1917), generally credited with discovering the mechanism by which the Aurora borealis was formed[48]. He also demonstrated the concept field-aligned electric currents, and predicted that these structures would be found in space at or near the Earth's pole(s) [49]. These field-aligned currents have subsequently been verified by satellites, and have subsequently been named Birkeland currents. Birkeland currents underly much of plasma cosmology and the Electric Universe model.

Immanuel Velikovsky (1895-1979), a psychoanalyst by training, whose research into ancient history, comparative mythology, and geology, led him to conclude that the Earth had been subjected to interplanetary catastrophes in the past. To facilitate these cosmic upheavals, Velikovsky proposed that electromagnetic forces played a greater role in the universe than mainstream theories suggest. Velikovsky relates a discussion he had with Albert Einstein: "All the sciences-neurology, physiology, physics, and chemistry-recognize the overwhelming role of electromagnetic forces; only astronomy lives in an age before kerosene, in the age of candles. Einstein agreed with the thought I had expressed in my letter to him that it is my introduction of electromagnetic forces into celestial mechanics that caused the vehement opposition of the scientists." (Before the Day Breaks, Unpublished, 1954-07-21)

Charles E.R. Bruce (1902-1979), a Scottish astrophysicist, whose work led him to conclude that "most astrophysical phenomena could be interpreted as the results of electrical discharges on the cosmic scale."

Hannes Alfvén (1908-1995), recipient of the 1970 Nobel Prize in physics for his development of magnetohydrodynamics (MHD). He also highlighted a number of features that he felt were understated in cosmic plasmas, including the scalability of plasma, double layers, electric circuits, cellular structure of space. He noted that "as soon as an electric current is passed through a quiescent plasma, a number of complicated phenomena are produced which require an extensive development of classical theory, sometimes even a new approach. Alfvén's cosmological proposals are considered the basis of plasma cosmology. (Cosmic Plasma, p.5, 1981)

Ralph Juergens (1924-1979), an electrical engineer, who felt that the works of Irving Langmuir, Charles Bruce, and Hannes Alfvén might be able to reconcile Velikovsky's views of celestial mechanics. He went on to describe the Sun based on its similarities with a gas discharge tube. For example, he wrote: "The structure of the solar atmosphere strongly

suggests that the Sun is fuelled not from within but from without, and that the energy-delivery mechanism is an electric discharge" (Kronos Vol. IV No. 4 (Summer 1979), "The Photosphere: Is It the Top or the Bottom of the Phenomenon We Call the Sun?").

Anthony Peratt, an electrical engineer with a Ph.D. from the University of Southern California. He was a graduate student of Hannes Alfvén. Peratt developed computer simulations of galaxy formation, based on research concerning Birkeland currents using (at the time) the fastest supercomputer available. Peratt was investigating laboratory scale Birkeland currents and used experimentally justified scaling laws to see what would happen at galactic scales. Peratt discovered the dynamic effects that occur in intense Birkeland currents, named Peratt Instabilities. These arc discharges occur in plasma torches, z-pinch plasma filaments, and high energy density electrical discharges. Peratt claims that evidence exists that the instability can also be found on astrophysical scales.

Wallace Thornhill, a physicist by training, has further developed the Electric Universe, in particular, aspects of the Electric Sun, and planetary cratering as the result of electric discharge machining. A leading contributor to [150] and [151].

Don Scott, a now-retired professor of electrical engineering at the University of Massachusetts, who has investigated the Electric Universe for many years, in particular, aspects of the Electric Sun and cosmic plasma.

To proponents of the electric universe, electricity's role in astrophysics has been marginalized: Complex electrical phenomena are claimed to be the most important. The mainstream understanding of electric and magnetic phenomena involve plasma physics and the study of astrophysical plasmas.

Concerning the Jesus Family Tomb. I am willing to pay \$1,000,000.00 United States Dollars (US Legal Tender 31 USC 5103)to save and preserve the skulls and bones of the people in the Jesus Family Tomb

that where allegedly re buried. The Money is in United States gold clause securities exchangeable by the Sect of the Treasury under 31 USC 5118. I am praying for you people very much , I pray that the skulls and bones of the people in the Jesus Family Tomb , THAT THE SKULLS AND BONES IN THE JESUS FAMILY TOMB ARE SAVED AND PRESERVED FROM DECAY WITH THE POSSIBLE HOPE OF A REAL MEDICAL RESURRECTION OF THEM INCLUDING JESUS THROUGH SCIENCE , STEM CELLS AND THE BELOW INVENTION TITLED A RESURRECTION BURIAL TOMB US PAT PENDING SINCE 1999...PLEASE SAVE THOSE BONES FROM THE GRAVE..asap...JUST IN CASE... I believe you have in fact found the tomb of Jesus and the Apostles , Jesus's son (adopted son ?) and Mary. As a 41 year old celibate virgin , I understand the Bible didn't state Jesus was a virgin , and I thought for decades Jesus was in love with Mary M. ..of St John chapter 8...that woman caught in adultery ...was his wife ?...makes sense...this re discovery I find is an " as is " 2nd arrival of the BODY of Jesus as promised in the Bible and St Barnabas epistle (re the year 2000 A.D. is alleged to have been 6000 years from Adam. If we can have a photo of the skull and bones of Jesus of the Family Tomb , we can compare them with the Shroud of Turin...

Dear Don of the Garden Tomb Jerusalem:

Even if the bones are recovered and preserved , they alone can not prove 100% that they were of the Jesus the Christ Spirit.

But if those bones match the image found on the Shroud of Turin then one can safely say this most likely is Jesus the Christ Spirit

For me the finding of this alleged Tomb is the second arrival of Jesus' (body) on Earth again as promised but in an , as is sense.

I will do what I can to help the Churches in Jerusalem with funds for goods and services...for resurrection science purposes including the Garden Tomb

I can send you the 1988 IAM Million Dollar note on real bank note paper and they maybe useful as simple US paper coins for the payment of US taxes under the coin act of 1965 31 USC 392 ..I am not exactly sure on this but I can mail you one anyways

In one of the emails I sent , there is this amazing engima of Jesus over my house in 1999 I do believe , almost know the Christ Spirit is in motion and active in the SUN and Earth.

This could be a very exciting time of the Church , as promised the dead can and have been " resurrected " through organ donations , coma revivals , even re growing new tissues via stem cells

I don't know if you think people fly into outerspace (heaven) after death or are resting and waiting for the resurrection of the body , it doesn't matter...both are true inpart

photons might equal spirit and adding science / a medical resurrection is possible.

I am doing what I can here in the United States to help all of you good people in Jerusalem , Jewish , Muslim and Christian help Jesus' plan to make a heaven on earth and allow people to live as children for 1000 years as promised

God has a different plan for me , I have saved enough money to buy a ticket into outerspace after my death...outerdarkness the place where the worthless servant / foolish virgins go

but before I do , I hope to make that trip affordable for many as I developed a new heat to electric ion truster powered spaceship via balloon launch

in the future by the year 2361 that process will have been used by Venus gold mining robots..you could say they are devils as they work on

the hellish Venus , venus gold bank , but they are not motivated by food or love as people are

what concerns me is if deceased person's bodies are resurrected into those robots

it isn't up to me to ressurect people and cast them into hell, that I why finding the Jesus Family Tomb is important because Jesus was holy and good and promised everyone a fair and second chance

**For the Cryonic Life Insurance Company
Dept of General Resurrection**

Br Dan

Dear Garden Tomb;

Concerning the Bones of Jesus

can you please help secure and preserve the alleged bones of Jesus and others found at the Jesus Family Tomb ?

I contacted the Jeruselum Post but I don't think they can help.

After reading the Wikipedia article about the church of the Holy Seplucher and the ongoing fighting within the Church , I do not think preserving the alleged Bones found in the Jesus Family Tomb is a good or safe idea at that location.

I will do what I can here in the United States to secure and transfer funding to preserve the alleged Bones found in the Jesus Family Tomb anyways where ever City Hall Jeruselum thinks is the safest place for them.

Respectfully

Dr Izzo

PS I will try to make contact with the Israeli embassy in New York or Washington D.C. to help work with the US Treasury Dept. for funding

part of the other email notes

re: Can your office help preserve those alleged skulls and bones found at the Jesus family tomb in 1980 just in case they are in fact the real skulls and bones of Jesus and the Holy Family and Friends as I think they are.

re Medical Resurrection of the Body & The Bones of Jesus as a Defense Shield ? With \$1,000,000.00 U.S. Dollars Can Jerusalem secure and preserve the BONES found in the Jesus Family Tomb ?

PS I currently have \$950,000.00 U.S. Dollars in United States gold clause securities made a legal tender under the Act of Congress of June 5th 1933 and apparently exchangeable for other United States coins and currencies under 31 USC 5118 (gold clauses and US currency exchanges) already on deposit at the BEP .

That money can be used to secure and preserve the " alleged bones of Jesus and the Holy Family and Friends found in the Jesus family tomb.

I AM WORRIED THIEVES OR TERRORISTS WILL TRY TO DESTROY THE BONES FOUND IN THE JESUS FAMILY TOMB

Respectfully

**Br Dan Izzo D.D.
512 Onondaga Ave
Syracuse, NY 13207**

PS In Sept 1999 a few months after I filed my first US Pat application for the resurrection burial tomb , I took a picture of my house as I was trying to flee terror , and a ghost image of Jesus appeared on the photo, almost like the image on the shroud of Turin but its finger was over its mouth and if Jesus was telling me to keep quite.

COULD JESUS HAVE SURVIVED CRUXIFIXION

DID JESUS RESURRECT FROM A COMA ?

WHY DID JESUS EAT BREAKFAST AFTER HE WAS RESURRECTED , WAS HE HUNGRY ?

Coma

Classifications and external resources ICD-10 R40.2

ICD-9 780.01

In medicine, a coma (from the Greek $\kappa\omicron\mu\alpha$ koma, meaning deep sleep) is a profound state of unconsciousness. A comatose patient cannot be awakened, fails to respond normally to pain or light, does not have sleep-wake cycles, and does not take voluntary actions. Coma may result from a variety of conditions, including intoxication, metabolic abnormalities, central nervous system diseases, acute neurologic injuries such as stroke, and hypoxia. It may also be deliberately induced by pharmaceutical agents in order to preserve higher brain function following another form of brain trauma.

Contents [hide]

1 Derivation

2 Distinctive phases of coma

3 Outcome

4 Records

5 Diagnosis and treatment

6 See also

7 References

8 External links

[edit] Derivation

The word coma comes from the Greek God Comas, who was in charge of a sector of the world. Comas was one day walking about the earth when he tripped and fell on a scepter. He fell into a deep sleep and was woken up five hundred years later by a commoner. The commoner was surprised by the longevity of this "man's" sleep and named the coma after Comas.

[edit] Distinctive phases of coma

Within coma itself, there are several categories that describe the severity of impairment. Contrary to popular belief, a patient in a comatose state does not always lay still and quiet. They may talk, walk, and perform other functions that may sometimes appear to be conscious acts, yet are not.

Two scales of measurement frequently used in TBI diagnosis to determine the phase of coma are the Glasgow Coma Scale and the Ranchos Los Amigos Scale. The GCS is a simple 15-point scale used by medical professionals to assess severity of neurologic trauma, and establish a prognosis. The RLAS is a more complex scale that describes up to eight separate levels of coma, and is often used in the first few weeks or months of coma while the patient is under closer observation, and when shifts between levels are more frequent.

[edit] Outcome

There are several levels of coma, through which patients may or may not progress. During the first level of coma, the responsiveness of the brain lessens, normal reflexes are lost, and the patient no longer responds to pain. The patient also can't hear in the normal stage of coma. The chances of recovery depend on the severity of the underlying cause. A deeper coma alone does not necessarily mean a slimmer chance of recovery, because some people in deep coma recover well while others in a so-called milder coma sometimes fail to improve.

The outcome for coma and vegetative state depends on the cause, location, severity and extent of neurological damage: outcomes range from recovery to death. People may emerge from a coma with a combination of physical, intellectual and psychological difficulties that need special attention. Recovery usually occurs gradually, with patients acquiring more and more ability to respond. Some patients never progress beyond very basic responses, but many recover full awareness. Gaining consciousness again is not instant: in the first days, patients are only awake for a few minutes, and duration of time awake gradually increases.

**Comas generally last a few days to a few weeks, and rarely last more than 2 to 5 weeks. After this time, some patients gradually come out of the coma, some progress to a vegetative state, and others die. Many patients who have gone into a vegetative state go on to regain a degree of awareness. Others may remain in a vegetative state for years or even decades. Predicted chances of recovery are variable due to different techniques used to measure the extent of neurological damage. All the predictions are based on statistical rates with some level of chance for recovery present: a person with a low chance of recovery may still awaken. Time is the best general predictor of a chance for recovery, with the chances for recovery after 4 months of brain damage induced coma being low (less than 15%), and full recovery being very low. [1]
[2]**

The most common cause of death for a person in a vegetative state is secondary infection such as pneumonia which can occur in patients who lie still for extended periods.

Occasionally people come out of their comas after long periods of time. One man after nineteen years in a coma spontaneously began speaking and regained awareness of his surroundings. [3]

[edit] Records

According to the Guinness Book of Records, the longest period of time spent in a coma was by Elaine Esposito. She did not wake up after being anaesthetized for an appendectomy on August 6, 1941, at age 6. She

died on November 25, 1978 at age 43 years 357 days, having been in a coma for 37 years 111 days.

[edit] Diagnosis and treatment

Diagnosis has the following steps: Medical History, Physical Exam & Neurological Evaluation, Eye Examination, Laboratory Tests, Imaging Studies (CT,MRI), EEG.

The Glasgow Coma Scale is used to quantify the severity of a coma. There are three components to the score: Eye opening response, Verbal response, and Motor response.

[edit] See also

Minimally conscious state

Traumatic brain injury

[edit] References

Brain Injury Association of America (BIAUSA). Types of Brain Injury. This article contains text from the NINDS public domain pages on TBI at:

http://www.ninds.nih.gov/health_and_medical/disorders/tbi_doc.htm

Some of the information in this section is from the public domain resource provided by the National Institute of Neurological Diseases and Stroke.

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What Bones of Jesus?

By Brent Bozell III

Wednesday, February 28, 2007

The press releases of the Discovery Channel boast that its parent company, Discovery Communications, is the "number one nonfiction media company." That identifier is now in shambles, and the paper it's

printed on fit only to be crumpled and thrown away. The folks at Discovery have rendered themselves carnival barkers peddling sensationalistic garbage, trashy moneymaking gimmicks dressed up as real journalism.

The Discovery Channel is hyping to the heavens its new documentary on "The Lost Tomb of Jesus." James Cameron, the Oscar-winning director of "Titanic," has joined filmmaker Simcha Jacobovici in publicizing claims that a 2,000-year-old tomb containing 10 boxes of bones belonged to the family of Jesus of Nazareth. It also echoes the dopey "DaVinci Code" novel by asserting that Jesus was married to Mary Magdalene, that the couple had a son. They claim the son was named Judah and that all three were buried together.

So much for the Resurrection. So much for the Bible. So much for the divinity of Christ. So much for Christianity. It's all a fraud -- if one is to believe the nonfiction of the Discovery Channel.

Other than a syrupy boost -- an embarrassingly syrupy boost -- from an "exclusive" appearance on NBC's "Today" show, the national media for once aren't buying into this cheap publicity stunt and have found a load of skeptics to denounce the film, maybe because the list of experts, both scientific and religious, is endless.

Perhaps the most important debunker is professor Amos Kloner, who oversaw the original archaeological dig of this tomb in 1980. "It makes a great story for a TV film," Kloner told the Jerusalem Post. "But it's completely impossible. It's nonsense."

Joe Zias, who was the curator for anthropology and archeology at the Rockefeller Museum in Jerusalem from 1972 to 1997 and personally numbered the ossuaries at the center of the film, was even harsher: "Simcha has no credibility whatsoever. ... He's pimping off the Bible. ... Projects like these make a mockery of the archeological profession."

Hebrew University archeologist and epigraphist Leah DiSegni said that the names found in the tomb, Mary, Joseph and Jesus, were among the most common names of the day. It would be like finding a tomb with the name George on it in the future and asserting that it must have been

the tomb of President George Bush, DiSegni told the Cybercast News Service. In addition, biblical scholar Stephen Pfann has questioned even the actual inscription on the tomb, claiming it's "scratchy" and hard to read. For all we know, it's Johnny, Mabel and Jerry.

How do the producers defend themselves against the avalanche of criticism? It's so, so typical. On the "Today" show, Jacobovici and Cameron -- the "Titanic" director -- finally were pressed to respond to critics like Zias. They quickly fell back on the laughable concept that they weren't -- surprise! -- experts. Both said they weren't archaeologists. One insisted he was filmmaker, the other a journalist. Cameron found it "compelling" as a layman.

In other words, neither has credibility -- and neither does the nonfiction Discovery Channel.

When it comes to ancient Christian sites, the Discovery Channel already had a huge credibility problem on its hands. Discovery aired a 2002 special on the alleged "Ossuary of James," which was declared a forgery in 2003 by the Israel Antiquities Authority. Its promoter, Oded Golan, is currently on trial for forging part of the inscription. Jacobovici produced that badly flawed documentary, too.

The Discovery Channel, like most of the national TV elite, displays a dramatic bias in target selection when it comes to religion. There are no controversies over the historical claims of Islam, Judaism or any other religious faith. But Christianity is another story. It is routinely the subject of sensationalistic TV exposes, complete with breathless claims about how Jesus "might be" the son of a Roman soldier, or he might have survived the Crucifixion. And now he's a dad, with kids.

What's worse is that these shoddy alleged exposes always air in the most sacred Christian seasons, like Lent. Last year during Lent, on April 2, 2006, "Dateline NBC" offered part of its show to alleged Jesus-debunker Michael Baigent, even as reporter Sara James declared: "Baigent acknowledges there's no proof of his theory, but points out that it was possible to survive crucifixion."

If the Discovery Channel fails to cancel this slanderous 'documentary,' it will have to explain why it is intentionally misleading the public. This network should be embarrassed by this plunge into sensational speculation masquerading as 'science.' To slander Christianity at the start of the Lenten season is unconscionable. This isn't news. It's sensationalism on a stick. Or in this case, on a cross.

Lecturer, syndicated columnist, television commentator, debater, marketer, businessman, author, publisher and activist, L. Brent Bozell III, 51, is one of the most outspoken and effective national leaders in the conservative movement today.

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The “James son of Joseph” Ossuary

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Articles and
Reports**

Archaeological Excavations

Links

Bookstore

Purpose

Contributions & Support

**By Prof. Amos Kloner and Ronny Reich
The “James son of Joseph” Ossuary**

Discussion of the ossuary will focus on details of its sides:

- 1. Decorated long side.**
- 2. Left narrow side with slot for lid.**
- 3. Right narrow side.**
- 4. Back side with inscription.**

This ossuary closes by means of a flat lid, a method known as a pencil-box closure. A narrow groove to receive the lid was carved along the upper part of the inside rim along both long sides, and, less visibly along one narrow side, resulting in a straight, narrow ledge in the shape of the Hebrew letter het (?).

Straight lines, parallel to the outer edge, were carved on all four sides with a fine scribe. On the left narrow side (2) such lines appear along

three sides: on the right, left and bottom. On the front of this side (2) and to a lesser degree on the other narrow side (3) are thin etched lines which are not identifiable as a specific pattern.

It appears that the box was painted red on the outside, possibly with organic based color.

On the long decorated side (1) are remains of 2 thinly engraved circles. Each was drawn of two concentric circles. Their circumference can still be discerned today although parts have suffered natural erosion. The artisans used a compass with a sharp pointed edge, similar to a nail. The lines of the circles are thinner than the straight lines at the box's edges. The decoration on this long side (1) is similar to designs found on other decorated ossuaries from the Second Temple period; remains of compass-drawn leaves are discernable and each circle probably had six leaves. The leaves, superficially carved, using a method known as "rafter" cut or a technique using a nail or similar object. This technique, known as zigzag, was used for filling areas. It appears that this ossuary was to be decorated using this technique. The "thin' line" technique is also lacking in the filling of the band between the circle lines or the frame along the length of the sides. The technique known as rafter cut was common in ossuary decoration mainly until the year 70 CE. The thin line technique and zigzag were also common ossuary decorations and date the ornamented ossuaries to the mid first century CE and later. It has also been claimed that the majority are from the period after the year 70. They are very common in the periphery of Jerusalem and beyond such as the Judean Hills and Plain.

The back side (4) was originally without ornamentation and on it was carved the inscription "James son of Joseph brother of Jesus". The inscription consists of five words composed of twenty letters. It was inscribed on the right section at mid-height. The ossuary with its ornamentation lay in a burial cave or some space for a long period.

The sides of the box, including its markings and decorations, but excepting the inscription, suffered a long and considerable process of gentle erosion, probably resulting from moist and dry seasonal cycles. The results of erosion can be seen on specific sections of the sides and is not uniform. Another result of its long stay in a burial cave is a thin

layer of patina that formed on the surface, on the ornamentation, and on all four outer sides. The patina is partly correlated to the erosive processes: it is less well preserved where erosion is greater. On the interior surfaces the patina is less discernible.

When compared to other ossuaries uncovered in excavations, it appears that this ossuary stood undisturbed in its burial cave until its discovery.

The Inscription

The inscription appears on the long rear side (4), on the right side, at approximately mid-height, and its two parts differ somewhat: clearly, each of the letters of the two words “brother of Jesus” are carved less deeply than those on the right side of the inscription. It would appear that the writer was less certain or determined while writing these last two words. It doesn’t seem likely to me that there were two writers, two different handwritings, or that they were written in two separate times. Similarly, it is not likely that it is a later addition with the purpose of explaining whose bones were contained in this ossuary. Only the letter ayin (‘) in the word YSW‘(????) on the left is deeply carved, similarly to the letters of the three words on the right. It can be assumed that the writer intended to render the final ayin similarly to that in the word Y‘QWB (????). The lack of skill of the writer can be seen in the differing styles of the two adjacent letters bet in the words ???? ??.

Clearly, the words were inscribed at a time other than the ossuary’s original manufacture with its linear decoration along the sides and rosettes on side 1.

Inside the relatively deep letters the patina is not the same as on the ossuary’s four sides, lid and decorative lines. It can be surmised that the writer tried to impart to the letters a look of authenticity, similar to the markings on the other sides of the box by filling in or spreading a liquid or other material of a brown or reddish color.

The inscription looks new. Its carving is clearly deep and lacks patina when compared to the sides, as described above. The writer tried to impart an ancient form to the letters by using contemporary examples.

It is easy to see how the writer wanted to attract the attention of modern day viewers by using forms that are as similar as possible to current script. Their placement and design are “monumental” and stand out. The vast majority of such ossuary inscriptions were carelessly written and schematic. Here, the writer was aware of his deed and purpose and wanted this inscription to make an impression at first glance and be relatively easy to read.

Remarks concerning content and Historic Context:

Ossuaries with detailed inscriptions naming three generations, emphasis on the deceased’s brother, his origin etc., derive from archaeological context of family burial caves and come in groups. Single ossuaries with detailed inscriptions and unknown provenance were apparently separated from others in the cave by illicit diggers, antiquities dealers and other go-betweens, close to the time of their discovery or at the time of their sale. No ossuaries with relatively detailed inscriptions were found singly or in pairs, nor were single ossuaries with inscriptions reported from excavations. All large groups of ossuaries come from burial caves, and all inscribed ossuaries come from such groups.

The family of Jesus and James had no burial cave in first century Jerusalem and it is known that about a generation elapsed between the death of Jesus and that of James. It is not known from the details of their lives that the family moved from Nazareth to Jerusalem. It is thus not likely that in the space of thirty years the burial of a large family related to Jesus and his brother James developed in Jerusalem, that made it necessary to write the deceased’s name on the ossuary in order to distinguish him from others. According to the above proposal, that such an ossuary would derive from a large group, it is unlikely that the present ossuary of Ya‘acov son of Yosef originates in the burial cave of the above family. The rationalization that early Christians were buried in Jerusalem according to their own rites still lacks proof or evidence. The possibility of a sectarian burial exists, but it doesn’t seem likely that an ossuary would be inscribed in this special way, that normally would belong to a family burial.

Statistical analysis of onomastica on ossuaries yields five persons with the name James (Yaacov). It should be noted that two of them originated in a site found at a distance of 100 km from Jerusalem, thus reducing the sample group even further. The statistics of this subject should be further studied.

**Respectfully,
Prof. Amos Kloner**

The Yehoash Inscription

A few short comments:

Letters

Dr. Yoel Fixler studied the letters and found the following data:

There are 202 complete and legible letters.

Each letter is identical to the others nearly every time it appears in the inscription

- 1. 47.6% of the 202 complete letters match ancient Hebrew/Moabite ninth century writing.**
- 2. 42.8% of the letters do not match ancient Hebrew/Moabite ninth century writing.**
- 3. 9.5% of the letters can be dated to the ninth century since they match Phoenician letter forms in inscriptions.**

General Conclusion: There is great difficulty in determining that the inscription was written in Jerusalem in the 9th century.

Type of stone:

A Hebrew inscription from Jerusalem would be written or engraved on limestone. I am convinced that this specific stone was chosen by the engravers because they wanted to have the inscription resemble that of the Mesha' inscription.

27 April 2003

To:

**Dr. Gideon Avni
Head of Excavations and Surveys
Israel Antiquities Authority**

**Subject: Ossuary Bearing the Inscription: "James son of Joseph
brother of Jesus**

Gideon shalom,

In accord with your request, I was given the opportunity on March 16, 2003, accompanied by Ms. Hava Katz, Chief Curator of the Israel Antiquities Authority to examine the inscribed ossuary in the IAA storerooms at the Rockefeller Museum. I examined the inscription only by naked eye. I present my findings, to the best of my knowledge on the subject. I examined the inscription according to the following characteristics:

Condition of the Inscription

All the letters, with one exception are easily legible. The only unclear letter is the dalet located before the name Yeshua'. It should be noted that this letter was legible before the ossuary broke exactly at that point. I could examine the broken letter on photographs published in the media and taken before the ossuary broke. Therefore, all the letters are clear and easily legible.

The Writing Instrument:

The inscription was written with a sharp instrument (awl, nail) into the soft chalk of which the ossuary was made. This is the most common writing method found on ossuaries of the period. I did not see a difference in engraving between parts of the inscription. From my examination of the inscription with my naked eye, it appeared to me that the inscription was written in one continuum.

Still, such an inscription is better examined through a microscope to clarify whether all its parts were indeed inscribed with the same sharp tool. It seems to me that the forensic laboratory at the police headquarters is the most appropriate place for an examination of this type.

Location of the Inscription on the Ossuary:

The inscription is centered, more or less, on one of the long sides. Since the ossuary is not decorated on any side, the writer did not have to take decoration into account. Location of the inscription is reasonable.

Position of the Letters on the Ossuary:

A review of L.Y. Rahmani's catalog of ossuaries reveals that this is one of the longest ossuary inscriptions known. Letter height is uniform throughout, a relatively rare occurrence in an ossuary inscription. It is worth noting that all the letters (20 in all) are etched in a fairly straight line. It appears to me that the upper part of most of the letters, and perhaps all, are in a straight line (on a slight incline from right to left). Can a long inscription be written in a straight line freehand? I would say no. It seems to me that the writer used a wooden ruler and carved in the letters from the ruler downward. If so, he used the same method as Second Temple period scribes who hung their letters from the line drawn on the parchment downward.

The Paleography:

Each of the letters of the inscription, singly and all together, match in form and layout (direction of each letter in relation to horizontal reading direction) first century CE "Jewish Script" and especially those of ossuary inscriptions.

The shape of all letters is very clear. It appears to me that the inscription was written by someone who not only had command of Hebrew and Aramaic, but it was his expertise, someone whose usual activity consisted of writing Hebrew and Aramaic (on more mundane media, as papyrus and parchment).

The writing appears very meticulous, like that of a scribe, who cared about the shape of each letter. The letters are of uniform height, written along a straight line (perhaps helped by a ruler). The addition of serifs to several letters (qof, bet, resh) is also characteristic. All these attributes together however, appear less in other ossuary inscriptions, where the handwriting is usually more cursive and hurried, not uniform, as though written in haste in the awkward conditions of a burial cave.

Language and Spelling:

The writer was a speaker of Aramaic, which can be seen in the words ??, ????, and ??????. The full spelling of ?????? should be noted, as found in other inscriptions of the same period.

Content:

If the inscription had read “Yosef son of Ya‘aqov brother of Yeshua” no one would have raised an eyebrow, and the inscription would have quietly entered the statistical lists without a further thought. Of the three names, one is very common (Yosef), one common (Yeshua‘, Yehoshua‘) and one less frequent (Ya‘aqov). The reference of son to father (bar) is trivial and the reference to a brother is rare.

Reference to a brother could appear for a number of reasons:

I. A reference to a well-known personality, in the hope that some of the renown will pass over to the deceased. It should be remembered that once the burial and ossilegium were complete, no one saw the ossuary any more. In my opinion, such references do not reflect boasting through family lineage, since if this were the custom, more such examples of references to high priests, other important officials etc. would have been found. These are practically non-existent.

II. For the purpose of identification within the family, since more than one person in the family was named Ya‘aqov son of Yosef, and the additional reference to a brother served to distinguish between them.

III. It is possible that this Ya‘aqov married the wife of Yeshua‘ who died childless and he, the brother-in-law, wanted to indicate this. We have no information about the other persons buried in the same cave, and therefore cannot know who, in the following generation was related to Ya‘aqov or to Yeshua‘.

The question of the authenticity of the Inscription

The ossuary itself is surely an authentic item from the Second Temple period. The inscription does not show any mixture of morphological or textual aspects from different periods that could indicate forgery. It appears that each of the characteristics of the inscription, as detailed above, and all of them together, with no exception, indicate an authentic late Second Temple period (mainly first century CE) inscription.

Significance:

If we overlook the religious feelings (that could arise among Christians today) evoked by this inscription, then its significance for the study of Jewish society at the close of the Second Temple period is slight. The inscription does not add any new onomastic or prosopographic data.

Identity of the Deceased

Concerning your question as to whether the ossuary may indeed belong to Jacob brother of Jesus of Nazareth cited in historical sources - this question was addressed through a detailed statistical research conducted by Prof. Camil Fuchs of Tel Aviv University. It is possible here and there to question the validity of the raw data used by Fuchs (for example, estimates of the city’s population, the length of the period ossuaries were in use etc.) but on the whole, this is an important, instructive research. Fuchs’ resulting statistical probability indicates that during the said time and place, there were 1.71 persons that the inscription on the ossuary may have referred to. This result is rather amazingly close to the result that the Christian world would be pleased to receive, yet still leaves a chance (at the level of probability that Fuchs

indicates) that there was in Jerusalem at the time another one such person.

This possibility prevents giving the ossuary its requested lineage. One working hypothesis of Fuchs should be criticized, namely that mention of the brother's name was intended to bestow on the deceased a lineage worthy of boast, since the brother was very famous. As noted above, if this had been the custom, then we should find in the inscriptions, no few such boasts. Such mention of lineage exists only when a son/daughter refer to the lineage of their father (Nikanor's children's ossuary, Yohanna, daughter of the High Priest), but we do not find on ossuaries other references to important brothers (for example the brother of Nikanor, or the sister of the High Priest) since there was no such custom. It seems to me that this kind of noting was used only for identification inside the family, especially when collecting the bones and placing them in the bone box, because after placement, no one would see the ossuary again.

Sincerely,

**Professor Ronny Reich
Institute of Archaeology
University of Haifa**

8 May 2003

**To:
Dr. Gideon Avni
Head of Excavations and Surveys
Israel Antiquities Authority**

Dear Gideon,

Subject: The Yehoash Inscription

In accord with your request, I was given the opportunity, on March 16, 2003, accompanied by Ms. Hava Katz, Chief Curator of the Israel

Antiquities Authority to examine the said inscription in the IAA storerooms at the Rockefeller Museum I examined the inscription only by naked eye. I present my findings, to the best of my knowledge on the subject.

Comment on the Physical Aspect

I viewed the inscription after it had already broken in two. It seems that the important detail resulting from this mishap can be found in the break itself. It appeared to me that there was a light colored patina along the entire length of the break and to a considerable depth. Even if we accept the claim that “ancient” patina can be easily imitated, it is not likely that a forger will take the trouble to penetrate his “patina” into the crack as well, in case the stone will break sometime.

The Writing

The Hebrew lapidary script matches that of the ninth century BCE even though there may be some slight deviations from the forms characteristic of this period. These slight deviations are reasonable when considering that the words are carved in stone and difficult to execute (as compared to a reed pen and ink), and may not be indicative of mistakes by a possible forger. It can be assumed that the inscription was carved by a stone engraver, and that the writing was perhaps not his own but copied from a text on a different media (ink on pottery, for example), and written by a professional scribe.

Of all the characteristics, it seems that the writing would be the simplest and easiest to fake. Whoever wants to forge an inscription from a particular period, say from the 9th century BCE, has only to carefully copy letters from a different inscription of the same period, for example, from the Mesha‘ stele.

Language of the Inscription

The inscription is written in Biblical Hebrew, but some of the technical terms mentioned in connection with the Temple building (such as ???, ????, ?????, ?????, ?????), may have originated in other languages, Phoenician, for example, since the First Temple builders for

King Solomon, according to the Bible (1 Kings, 5.20, 32) were Phoenician stone and wood craftsmen, who brought building materials and techniques with them, and probably also some of their technical terms.

Spelling

The inscription is in the form of Hebrew spelling known as scriptio defectiva, typical to the period, as in the word ?? instead of ???in the Siloam inscription. From this point of view, the spelling is consistent and the inscription resembles others of the same period, because as expected the scriptio defectiva appears also in the Biblical parallels (????, ????, ???, ????, ????, ????,) instead of ?????, ??????, ??????, ??????, ??????, ??????) as is the use of reversing vav from future to past tense and its scriptio defectiva (???? instead of ?????).

Observations on Content

The inscription professes to be a royal commemorative inscription, marking the completion of renovations of the House - the First Temple in Jerusalem. The name of the king responsible for the project is not mentioned, but was certain to have been written at the head of the text, which is missing. The story appears in 2 Kings 12.1-18 and deals with renovations to the Temple carried out during the reign of King Yehoash. No less important for the evaluation of the inscription, and perhaps more so than the story of Yehoash, is the story of the construction of the Temple of Solomon (1 Kings 6-7). Its importance lies in the fact that most, if not all of the technical terms mentioned in our inscription (???? ?????, ??????, ??????, ?????, ?????, ?????, ?????, ??????) appear in 1 Kings 6-7 rather than in 2 Kings 12.

Only one technical term that appears in the inscription does not appear in the text of the construction in 1 Kings, and in my opinion only strengthens the argument for authenticity. It is the term '???? ????'. This is one of three building materials, together with '???? ????' and '??????', that the inscription mentions as having been purchased.

Since the spelling is scriptio defectiva there are several ways to vowelize the words: nehoshet aduma, [i.e. red copper]; nehoshet adama

[i.e. earth copper]; nehoshet (from) Edom or nehoshet (from the site) Adam. In fact, all these possibilities seem reasonable to a greater or lesser degree:

Cast copper is red although it is quickly oxidizes and turns green.

Copper was readily available from Edom, or more correctly, from the eastern region of the Arava, from the copper mines of Funon (or Feinan as it is called today) opposite the mountains of Edom.

Adama ???? or Adam ??? may be acceptable, referring to the geographical source of copper coming from a place with this name, and not its geological source. The copper utensils of the Temple are mentioned in 1 Kings 7.46 as having been cast “bema‘aveh ha-adama” between Succoth and Zarethan. Although in modern Hebrew the expression ???? ????? means a deep place in the ground, e.g. a mine, in the biblical text the expression refers to the name of a particular place, and the scriptures even specify where it is: between Succoth and Zarethan. The place is a site called Adam or Adam Ha`Ir (???, ??? ?????) which is close to Zarethan also according to Joshua 3.16 The name survives in the Damya Bridge over the Jordan River. While the building stones and cypress beams were worked by the qualified artisans at the construction site, the copper utensils must have been cast in a specialized foundry. Adam Ha`Ir is probably the place where foundries made metal hardware on order for the construction industry.

The inscription mentions the carrying out of a “bedeq bayt” ??? ???. One should not, of course, try and understand the words according to their modern meaning, i.e. renovations. The term appears in the Bible a number of times, all connected with repairs to the Temple in the days of Yehoash (2 Kings, 12) except that the verb used in this connection is “to strengthen” ???? the “bedeq bayt”. From this, one can understand that “bedeq bayt” is not the action of repair and maintenance but rather the problem that needs to be repaired, i.e. the poor condition of the building with its cracks and defects, that must be strengthened. In this respect, the use of “to do bedeq bayt” is incorrect and liable to point to an anachronistic use of the term, and thus hence to the inscription being a forgery.

But, in my opinion, this meaning of the term *bedeq* is not unequivocal. In the parallel text of 2 Chronicles, 34.10, the words *????? ?????* appears. Although this is a later text than that of 2 Kings, the verb ‘*livdok*’ here (which may have been formed from the technical term (*???* is clearly connected with the activity of repair and not to the nature of the fault.

The term *???* appears in the Bible once more. In his lamentation over Tyre, the Prophet Ezekiel (27:9) reminds the elders of Gebal [Byblus] and its wise men that were “*?????? ?????*” (27:27) and so were its sailors and sea captains. Here the word *???* cannot be understood as a fault of some kind in the ships of Tyre, but rather as maintenance activity in need of the expertise of professional workers and the wisdom of elders and men of experience in order to maintain a ship (the grammatical form *hif’il* as opposed to *pi’el*). This meaning of the word *???* allows us to understand the term *???* *???* in the Bible as a renovation of some kind. The verb *???*, a common Hebrew word today, does not appear in the Bible more than the few times cited above (the verb *???* is used to indicate an activity of careful perusal), and very possibly may not originate from Hebrew but from Phoenician, since it appears in the Bible only in relation to two topics (the Temple construction and ship maintenance) where Phoenicians played a major role in both activities.

It therefore seems to me that we cannot rely heavily on the original exact forms of the term *???* or *???* *???* in our attempt to investigate the question of authenticity since it is possible that already in ancient days the Judeans added the verbs *??????* (to hold) and *????* (to strengthen) that do not belong together. Therefore, the expression *????? ??? ?????* that appears in the inscription is not necessarily a modern mistake but an ancient one.

Finally, I will take the role of devil’s advocate and contend that it seems to me that the inscription is indeed authentic since it is difficult for me to believe that a forger (or group of forgers) should be so knowledgeable of all aspects of the inscription - the physical, paleographic, linguistic and biblical - to produce such an object.

Moreover, the inscription lacks a heading which probably referred to the Temple and King Yehoash. It seems to me that if written in modern

times for profit, or for publicity or prestige, or political reasons connected with the Temple Mount and current events, the producer of the inscription would have left that part whole and broken or concealed a different part of the inscription.

The missing part is that which obliged the IAA to act. The scholars who examined the object have no knowledge but only conjectures regarding its authenticity. I presume that finding the upper part - if it will ever be found whole and in its original context - would bring us closer to the truth. Until then, let each one remain with his own degree of conviction about its authenticity. Since such a chance find is very slim, but still exists, we have no choice but to safeguard the object in the National Collections.

**Prof. Ronny Reich
Department of Archaeology
Haifa University**

**16 June 2003
Dr. Gideon Avni
Israel Antiquities Authority
Jerusalem**

Subject: Yehoash Inscription and Jacob brother of Jesus

As you know, I submitted to you my opinion that both inscriptions are authentic. Regarding the Yehoash inscription, I asserted that it would be difficult to find a person so knowledgeable of the linguistics, content and physical aspects to produce such an object.

In the final meeting of our committee (Writing and Content) I noted to my colleagues that the method I used was to assume from the beginning that the inscriptions are authentic unless I will be convinced by my own observations, or by those of other scholars.

My committee colleagues did not convince me.

However, our committee was presented with the results of the parallel committee (the Materials Committee). Mainly, the results of the new geological study conducted by my friends Avner Ayalon from the Geological Survey of Israel and Professor Yuval Goren of Tel Aviv University, discussing the patina inside the letters of both inscriptions.

Having some knowledge of geology, and in light of the data presented, I must note that I am now convinced that the patina we have seen was produced and placed inside the letters in an artificial manner and could not have been produced in nature in ancient times, in both inscriptions. As a result, I am forced to change my opinion on the matter.

Sincerely,

**Prof. Ronny Reich
Department of Archaeology
Haifa University**

|Title Page|

**Return to Home Page
Return to Articles and Commentary**

**|Home| |Purpose| |Breaking News| |Internet News Archive|
|Commentary| |Articles| |Archaeological Excavations|
|Archaeology & Museum Sites | |Bookstore|**

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Coma

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Jump to: navigation, search

For other meanings of the word "coma", see the coma (disambiguation).

Name of Symptom/Sign:

Coma

Classifications and external resources ICD-10 R40.2

ICD-9 780.01

In medicine, a coma (from the Greek κομα *koma*, meaning deep sleep) is a profound state of unconsciousness. A comatose patient cannot be awakened, fails to respond normally to pain or light, does not have sleep-wake cycles, and does not take voluntary actions. Coma may result from a variety of conditions, including intoxication, metabolic abnormalities, central nervous system diseases, acute neurologic injuries such as stroke, and hypoxia. It may also be deliberately induced by pharmaceutical agents in order to preserve higher brain function following another form of brain trauma.

Contents [hide]

1 Derivation

2 Distinctive phases of coma

3 Outcome

4 Records

5 Diagnosis and treatment

6 See also

7 References

8 External links

[edit] Derivation

The word coma comes from the Greek God Comas, who was in charge of a sector of the world. Comas was one day walking about the earth when he tripped and fell on a scepter. He fell into a deep sleep and was woken up five hundred years later by a commoner. The commoner was surprised by the longevity of this "man's" sleep and named the coma after Comas.

[edit] Distinctive phases of coma

Within coma itself, there are several categories that describe the severity of impairment. Contrary to popular belief, a patient in a comatose state does not always lay still and quiet. They may talk, walk, and perform other functions that may sometimes appear to be conscious acts, yet are not.

Two scales of measurement frequently used in TBI diagnosis to determine the phase of coma are the Glasgow Coma Scale and the Ranchos Los Amigos Scale. The GCS is a simple 15-point scale used by medical professionals to assess severity of neurologic trauma, and establish a prognosis. The RLAS is a more complex scale that describes up to eight separate levels of coma, and is often used in the first few weeks or months of coma while the patient is under closer observation, and when shifts between levels are more frequent.

[edit] Outcome

There are several levels of coma, through which patients may or may not progress. During the first level of coma, the responsiveness of the brain lessens, normal reflexes are lost, and the patient no longer responds to pain. The patient also can't hear in the normal stage of coma. The chances of recovery depend on the severity of the underlying cause. A deeper coma alone does not necessarily mean a slimmer chance of recovery, because some people in deep coma recover well while others in a so-called milder coma sometimes fail to improve.

The outcome for coma and vegetative state depends on the cause, location, severity and extent of neurological damage: outcomes range from recovery to death. People may emerge from a coma with a combination of physical, intellectual and psychological difficulties that need special attention. Recovery usually occurs gradually, with patients acquiring more and more ability to respond. Some patients never progress beyond very basic responses, but many recover full awareness. Gaining consciousness again is not instant: in the first days, patients are only awake for a few minutes, and duration of time awake gradually increases.

Comas generally last a few days to a few weeks, and rarely last more than 2 to 5 weeks. After this time, some patients gradually come out of the coma, some progress to a vegetative state, and others die. Many patients who have gone into a vegetative state go on to regain a degree of awareness. Others may remain in a vegetative state for years or even decades. Predicted chances of recovery are variable due to different techniques used to measure the extent of neurological damage. All the predictions are based on statistical rates with some level of chance for recovery present: a person with a low chance of recovery may still awaken. Time is the best general predictor of a chance for recovery, with the chances for recovery after 4 months of brain damage induced coma being low (less than 15%), and full recovery being very low. [1] [2]

The most common cause of death for a person in a vegetative state is secondary infection such as pneumonia which can occur in patients who lie still for extended periods.

Occasionally people come out of their comas after long periods of time. One man after nineteen years in a coma spontaneously began speaking and regained awareness of his surroundings. [3]

[edit] Records

According to the Guinness Book of Records, the longest period of time spent in a coma was by Elaine Esposito. She did not wake up after being anaesthetized for an appendectomy on August 6, 1941, at age 6. She

died on November 25, 1978 at age 43 years 357 days, having been in a coma for 37 years 111 days.

[edit] Diagnosis and treatment

Diagnosis has the following steps: Medical History, Physical Exam & Neurological Evaluation, Eye Examination, Laboratory Tests, Imaging Studies (CT,MRI), EEG.

The Glasgow Coma Scale is used to quantify the severity of a coma. There are three components to the score: Eye opening response, Verbal response, and Motor response.

[edit] See also

Minimally conscious state

Traumatic brain injury

[edit] References

Brain Injury Association of America (BIAUSA). Types of Brain Injury. This article contains text from the NINDS public domain pages on TBI at:

http://www.ninds.nih.gov/health_and_medical/disorders/tbi_doc.htm

Some of the information in this section is from the public domain resource provided by the National Institute of Neurological Diseases and Stroke.

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The “James son of Joseph” Ossuary

Home

Breaking News

Older News

Internet News Archive

**Articles &
Commentary**

**Archaeological
Articles and
Reports**

**Archaeological
Excavations**

Links

Bookstore

Purpose

**Contributions &
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**By Prof. Amos Kloner and Ronny Reich
The “James son of Joseph” Ossuary**

Discussion of the ossuary will focus on details of its sides:

- 1. Decorated long side.**
- 2. Left narrow side with slot for lid.**
- 3. Right narrow side.**
- 4. Back side with inscription.**

This ossuary closes by means of a flat lid, a method known as a pencil-box closure. A narrow groove to receive the lid was carved along the upper part of the inside rim along both long sides, and, less visibly along one narrow side, resulting in a straight, narrow ledge in the shape of the Hebrew letter het (?).

Straight lines, parallel to the outer edge, were carved on all four sides with a fine scribe. On the left narrow side (2) such lines appear along three sides: on the right, left and bottom. On the front of this side (2) and to a lesser degree on the other narrow side (3) are thin etched lines which are not identifiable as a specific pattern.

It appears that the box was painted red on the outside, possibly with organic based color.

On the long decorated side (1) are remains of 2 thinly engraved circles. Each was drawn of two concentric circles. Their circumference can still be discerned today although parts have suffered natural erosion. The artisans used a compass with a sharp pointed edge, similar to a nail. The lines of the circles are thinner than the straight lines at the box's edges. The decoration on this long side (1) is similar to designs found on other decorated ossuaries from the Second Temple period; remains of compass-drawn leaves are discernable and each circle probably had six leaves. The leaves, superficially carved, using a method known as "rafter" cut or a technique using a nail or similar object. This technique, known as zigzag, was used for filling areas. It appears that this ossuary was to be decorated using this technique. The "thin' line" technique is also lacking in the filling of the band between the circle lines or the frame along the length of the sides. The technique known as rafter cut was common in ossuary decoration mainly until the year 70 CE. The thin line technique and zigzag were also common ossuary decorations and date the ornamented ossuaries to the mid first century CE and later. It has also been claimed that the majority are from the period after the year 70. They are very common in the periphery of Jerusalem and beyond such as the Judean Hills and Plain.

The back side (4) was originally without ornamentation and on it was carved the inscription "James son of Joseph brother of Jesus". The inscription consists of five words composed of twenty letters. It was

inscribed on the right section at mid-height. The ossuary with its ornamentation lay in a burial cave or some space for a long period.

The sides of the box, including its markings and decorations, but excepting the inscription, suffered a long and considerable process of gentle erosion, probably resulting from moist and dry seasonal cycles. The results of erosion can be seen on specific sections of the sides and is not uniform. Another result of its long stay in a burial cave is a thin layer of patina that formed on the surface, on the ornamentation, and on all four outer sides. The patina is partly correlated to the erosive processes: it is less well preserved where erosion is greater. On the interior surfaces the patina is less discernible.

When compared to other ossuaries uncovered in excavations, it appears that this ossuary stood undisturbed in its burial cave until its discovery.

The Inscription

The inscription appears on the long rear side (4), on the right side, at approximately mid-height, and its two parts differ somewhat: clearly, each of the letters of the two words “brother of Jesus” are carved less deeply than those on the right side of the inscription. It would appear that the writer was less certain or determined while writing these last two words. It doesn’t seem likely to me that there were two writers, two different handwritings, or that they were written in two separate times. Similarly, it is not likely that it is a later addition with the purpose of explaining whose bones were contained in this ossuary. Only the letter ayin (‘) in the word YSW‘(????) on the left is deeply carved, similarly to the letters of the three words on the right. It can be assumed that the writer intended to render the final ayin similarly to that in the word Y‘QWB (?????). The lack of skill of the writer can be seen in the differing styles of the two adjacent letters bet in the words ???? ??.

Clearly, the words were inscribed at a time other than the ossuary’s original manufacture with its linear decoration along the sides and rosettes on side 1.

Inside the relatively deep letters the patina is not the same as on the ossuary's four sides, lid and decorative lines. It can be surmised that the writer tried to impart to the letters a look of authenticity, similar to the markings on the other sides of the box by filling in or spreading a liquid or other material of a brown or reddish color.

The inscription looks new. Its carving is clearly deep and lacks patina when compared to the sides, as described above. The writer tried to impart an ancient form to the letters by using contemporary examples. It is easy to see how the writer wanted to attract the attention of modern day viewers by using forms that are as similar as possible to current script. Their placement and design are "monumental" and stand out. The vast majority of such ossuary inscriptions were carelessly written and schematic. Here, the writer was aware of his deed and purpose and wanted this inscription to make an impression at first glance and be relatively easy to read.

Remarks concerning content and Historic Context:

Ossuaries with detailed inscriptions naming three generations, emphasis on the deceased's brother, his origin etc., derive from archaeological context of family burial caves and come in groups. Single ossuaries with detailed inscriptions and unknown provenance were apparently separated from others in the cave by illicit diggers, antiquities dealers and other go-betweens, close to the time of their discovery or at the time of their sale. No ossuaries with relatively detailed inscriptions were found singly or in pairs, nor were single ossuaries with inscriptions reported from excavations. All large groups of ossuaries come from burial caves, and all inscribed ossuaries come from such groups.

The family of Jesus and James had no burial cave in first century Jerusalem and it is known that about a generation elapsed between the death of Jesus and that of James. It is not known from the details of their lives that the family moved from Nazareth to Jerusalem. It is thus not likely that in the space of thirty years the burial of a large family related to Jesus and his brother James developed in Jerusalem, that made it necessary to write the deceased's name on the ossuary in order to distinguish him from others. According to the above proposal, that

such an ossuary would derive from a large group, it is unlikely that the present ossuary of Ya'acov son of Yosef originates in the burial cave of the above family. The rationalization that early Christians were buried in Jerusalem according to their own rites still lacks proof or evidence. The possibility of a sectarian burial exists, but it doesn't seem likely that an ossuary would be inscribed in this special way, that normally would belong to a family burial.

Statistical analysis of onomastica on ossuaries yields five persons with the name James (Yaacov). It should be noted that two of them originated in a site found at a distance of 100 km from Jerusalem, thus reducing the sample group even further. The statistics of this subject should be further studied.

Respectfully,
Prof. Amos Kloner

The Yehoash Inscription

A few short comments:

Letters

Dr. Yoel Fixler studied the letters and found the following data:

There are 202 complete and legible letters.

Each letter is identical to the others nearly every time it appears in the inscription

- 1. 47.6% of the 202 complete letters match ancient Hebrew/Moabite ninth century writing.**
- 2. 42.8% of the letters do not match ancient Hebrew/Moabite ninth century writing.**
- 3. 9.5% of the letters can be dated to the ninth century since they match Phoenician letter forms in inscriptions.**

General Conclusion: There is great difficulty in determining that the inscription was written in Jerusalem in the 9th century.

Type of stone:

A Hebrew inscription from Jerusalem would be written or engraved on limestone. I am convinced that this specific stone was chosen by the engravers because they wanted to have the inscription resemble that of the Mesha' inscription.

27 April 2003

To:

Dr. Gideon Avni

Head of Excavations and Surveys

Israel Antiquities Authority

Subject: Ossuary Bearing the Inscription: "James son of Joseph brother of Jesus"

Gideon shalom,

In accord with your request, I was given the opportunity on March 16, 2003, accompanied by Ms. Hava Katz, Chief Curator of the Israel Antiquities Authority to examine the inscribed ossuary in the IAA storerooms at the Rockefeller Museum. I examined the inscription only by naked eye. I present my findings, to the best of my knowledge on the subject. I examined the inscription according to the following characteristics:

Condition of the Inscription

All the letters, with one exception are easily legible. The only unclear letter is the dalet located before the name Yeshua'. It should be noted that this letter was legible before the ossuary broke exactly at that point. I could examine the broken letter on photographs published in the media and taken before the ossuary broke. Therefore, all the letters are clear and easily legible.

The Writing Instrument:

The inscription was written with a sharp instrument (awl, nail) into the soft chalk of which the ossuary was made. This is the most common writing method found on ossuaries of the period. I did not see a difference in engraving between parts of the inscription. From my examination of the inscription with my naked eye, it appeared to me that the inscription was written in one continuum.

Still, such an inscription is better examined through a microscope to clarify whether all its parts were indeed inscribed with the same sharp tool. It seems to me that the forensic laboratory at the police headquarters is the most appropriate place for an examination of this type.

Location of the Inscription on the Ossuary:

The inscription is centered, more or less, on one of the long sides. Since the ossuary is not decorated on any side, the writer did not have to take decoration into account. Location of the inscription is reasonable.

Position of the Letters on the Ossuary:

A review of L.Y. Rahmani's catalog of ossuaries reveals that this is one of the longest ossuary inscriptions known. Letter height is uniform throughout, a relatively rare occurrence in an ossuary inscription. It is worth noting that all the letters (20 in all) are etched in a fairly straight line. It appears to me that the upper part of most of the letters, and perhaps all, are in a straight line (on a slight incline from right to left). Can a long inscription be written in a straight line freehand? I would say no. It seems to me that the writer used a wooden ruler and carved in the letters from the ruler downward. If so, he used the same method as Second Temple period scribes who hung their letters from the line drawn on the parchment downward.

The Paleography:

Each of the letters of the inscription, singly and all together, match in form and layout (direction of each letter in relation to horizontal

reading direction) first century CE “Jewish Script” and especially those of ossuary inscriptions.

The shape of all letters is very clear. It appears to me that the inscription was written by someone who not only had command of Hebrew and Aramaic, but it was his expertise, someone whose usual activity consisted of writing Hebrew and Aramaic (on more mundane media, as papyrus and parchment).

The writing appears very meticulous, like that of a scribe, who cared about the shape of each letter. The letters are of uniform height, written along a straight line (perhaps helped by a ruler). The addition of serifs to several letters (qof, bet, resh) is also characteristic. All these attributes together however, appear less in other ossuary inscriptions, where the handwriting is usually more cursive and hurried, not uniform, as though written in haste in the awkward conditions of a burial cave.

Language and Spelling:

The writer was a speaker of Aramaic, which can be seen in the words ??, ?????, and ??????. The full spelling of ?????? should be noted, as found in other inscriptions of the same period.

Content:

If the inscription had read “Yosef son of Ya‘aqov brother of Yeshua” no one would have raised an eyebrow, and the inscription would have quietly entered the statistical lists without a further thought. Of the three names, one is very common (Yosef), one common (Yeshua‘, Yehoshua‘) and one less frequent (Ya‘aqov). The reference of son to father (bar) is trivial and the reference to a brother is rare.

Reference to a brother could appear for a number of reasons:

I. A reference to a well-known personality, in the hope that some of the renown will pass over to the deceased. It should be remembered that once the burial and ossilegium were complete, no one saw the ossuary any more. In my opinion, such references do not reflect boasting

through family lineage, since if this were the custom, more such examples of references to high priests, other important officials etc. would have been found. These are practically non-existent.

II. For the purpose of identification within the family, since more than one person in the family was named Ya‘aqov son of Yosef, and the additional reference to a brother served to distinguish between them.

III. It is possible that this Ya‘aqov married the wife of Yeshua‘ who died childless and he, the brother-in-law, wanted to indicate this. We have no information about the other persons buried in the same cave, and therefore cannot know who, in the following generation was related to Ya‘aqov or to Yeshua‘.

The question of the authenticity of the Inscription

The ossuary itself is surely an authentic item from the Second Temple period. The inscription does not show any mixture of morphological or textual aspects from different periods that could indicate forgery. It appears that each of the characteristics of the inscription, as detailed above, and all of them together, with no exception, indicate an authentic late Second Temple period (mainly first century CE) inscription.

Significance:

If we overlook the religious feelings (that could arise among Christians today) evoked by this inscription, then its significance for the study of Jewish society at the close of the Second Temple period is slight. The inscription does not add any new onomastic or prosopographic data.

Identity of the Deceased

Concerning your question as to whether the ossuary may indeed belong to Jacob brother of Jesus of Nazareth cited in historical sources - this question was addressed through a detailed statistical research conducted by Prof. Camil Fuchs of Tel Aviv University. It is possible here and there to question the validity of the raw data used by Fuchs

(for example, estimates of the city's population, the length of the period ossuaries were in use etc.) but on the whole, this is an important, instructive research. Fuchs' resulting statistical probability indicates that during the said time and place, there were 1.71 persons that the inscription on the ossuary may have referred to. This result is rather amazingly close to the result that the Christian world would be pleased to receive, yet still leaves a chance (at the level of probability that Fuchs indicates) that there was in Jerusalem at the time another one such person.

This possibility prevents giving the ossuary its requested lineage. One working hypothesis of Fuchs should be criticized, namely that mention of the brother's name was intended to bestow on the deceased a lineage worthy of boast, since the brother was very famous. As noted above, if this had been the custom, then we should find in the inscriptions, no few such boasts. Such mention of lineage exists only when a son/daughter refer to the lineage of their father (Nikanor's children's ossuary, Yohanna, daughter of the High Priest), but we do not find on ossuaries other references to important brothers (for example the brother of Nikanor, or the sister of the High Priest) since there was no such custom. It seems to me that this kind of noting was used only for identification inside the family, especially when collecting the bones and placing them in the bone box, because after placement, no one would see the ossuary again.

Sincerely,

Professor Ronny Reich
Institute of Archaeology
University of Haifa

8 May 2003

To:
Dr. Gideon Avni
Head of Excavations and Surveys
Israel Antiquities Authority

Dear Gideon,

Subject: The Yehoash Inscription

In accord with your request, I was given the opportunity, on March 16, 2003, accompanied by Ms. Hava Katz, Chief Curator of the Israel Antiquities Authority to examine the said inscription in the IAA storerooms at the Rockefeller Museum I examined the inscription only by naked eye. I present my findings, to the best of my knowledge on the subject.

Comment on the Physical Aspect

I viewed the inscription after it had already broken in two. It seems that the important detail resulting from this mishap can be found in the break itself. It appeared to me that there was a light colored patina along the entire length of the break and to a considerable depth. Even if we accept the claim that “ancient” patina can be easily imitated, it is not likely that a forger will take the trouble to penetrate his “patina” into the crack as well, in case the stone will break sometime.

The Writing

The Hebrew lapidary script matches that of the ninth century BCE even though there may be some slight deviations from the forms characteristic of this period. These slight deviations are reasonable when considering that the words are carved in stone and difficult to execute (as compared to a reed pen and ink), and may not be indicative of mistakes by a possible forger. It can be assumed that the inscription was carved by a stone engraver, and that the writing was perhaps not his own but copied from a text on a different media (ink on pottery, for example), and written by a professional scribe.

Of all the characteristics, it seems that the writing would be the simplest and easiest to fake. Whoever wants to forge an inscription from a particular period, say from the 9th century BCE, has only to carefully copy letters from a different inscription of the same period, for example, from the Mesha‘ stele.

Language of the Inscription

The inscription is written in Biblical Hebrew, but some of the technical terms mentioned in connection with the Temple building (such as **???, ????, ?????, ?????, ?????**), may have originated in other languages, Phoenician, for example, since the First Temple builders for King Solomon, according to the Bible (1 Kings, 5.20, 32) were Phoenician stone and wood craftsmen, who brought building materials and techniques with them, and probably also some of their technical terms.

Spelling

The inscription is in the form of Hebrew spelling known as *scriptio defectiva*, typical to the period, as in the word **??** instead of **???** in the Siloam inscription. From this point of view, the spelling is consistent and the inscription resembles others of the same period, because as expected the *scriptio defectiva* appears also in the Biblical parallels (**????, ????, ???, ????, ????, ????,**) instead of **?????, ??????, ??????, ??????, ??????, ??????** as is the use of reversing vav from future to past tense and its *scriptio defectiva* (**????** instead of **?????**).

Observations on Content

The inscription professes to be a royal commemorative inscription, marking the completion of renovations of the House - the First Temple in Jerusalem. The name of the king responsible for the project is not mentioned, but was certain to have been written at the head of the text, which is missing. The story appears in 2 Kings 12.1-18 and deals with renovations to the Temple carried out during the reign of King Yehoash. No less important for the evaluation of the inscription, and perhaps more so than the story of Yehoash, is the story of the construction of the Temple of Solomon (1 Kings 6-7). Its importance lies in the fact that most, if not all of the technical terms mentioned in our inscription (**???? ????, ??????, ??????, ????, ?????, ?????, ?????, ?????, ??????**) appear in 1 Kings 6-7 rather than in 2 Kings 12.

Only one technical term that appears in the inscription does not appear in the text of the construction in 1 Kings, and in my opinion only strengthens the argument for authenticity. It is the term **???? ????'**. This is one of three building materials, together with **???? ????'** and **???????**, that the inscription mentions as having been purchased.

Since the spelling is *scriptio defectiva* there are several ways to vowelize the words: **nehoshet aduma**, [i.e. red copper]; **nehoshet adama** [i.e. earth copper]; **nehoshet (from) Edom** or **nehoshet (from the site) Adam**. In fact, all these possibilities seem reasonable to a greater or lesser degree:

Cast copper is red although it is quickly oxidizes and turns green.

Copper was readily available from Edom, or more correctly, from the eastern region of the Arava, from the copper mines of Funon (or Feinan as it is called today) opposite the mountains of Edom.

Adama ???? or Adam ??? may be acceptable, referring to the geographical source of copper coming from a place with this name, and not its geological source. The copper utensils of the Temple are mentioned in 1 Kings 7.46 as having been cast “**bema‘aveh ha-adama**” between Succoth and Zarethan. Although in modern Hebrew the expression **???? ????'** means a deep place in the ground, e.g. a mine, in the biblical text the expression refers to the name of a particular place, and the scriptures even specify where it is: between Succoth and Zarethan. The place is a site called Adam or Adam Ha`Ir (???, ??? ????') which is close to Zarethan also according to Joshua 3.16 The name survives in the Damya Bridge over the Jordan River. While the building stones and cypress beams were worked by the qualified artisans at the construction site, the copper utensils must have been cast in a specialized foundry. Adam Ha`Ir is probably the place where foundries made metal hardware on order for the construction industry.

The inscription mentions the carrying out of a “**bedeq bayt**” **???? ????'**. One should not, of course, try and understand the words according to their modern meaning, i.e. renovations. The term appears in the Bible a number of times, all connected with repairs to the Temple in the days of Yehoash (2 Kings, 12) except that the verb used in this connection is “to

strengthen” לְבַדְּךָ the “bedeq bayt”. From this, one can understand that “bedeq bayt” is not the action of repair and maintenance but rather the problem that needs to be repaired, i.e. the poor condition of the building with its cracks and defects, that must be strengthened. In this respect, the use of “to do bedeq bayt” is incorrect and liable to point to an anachronistic use of the term, and thus hence to the inscription being a forgery.

But, in my opinion, this meaning of the term bedeq is not unequivocal. In the parallel text of 2 Chronicles, 34.10, the words לְבַדְּךָ לְבַדְּךָ appears. Although this is a later text than that of 2 Kings, the verb ‘livdok’ here (which may have been formed from the technical term (לְבַד is clearly connected with the activity of repair and not to the nature of the fault.

The term לְבַד appears in the Bible once more. In his lamentation over Tyre, the Prophet Ezekiel (27:9) reminds the elders of Gebal [Byblus] and its wise men that were “לְבַדְּךָ לְבַדְּךָ” (27:27) and so were its sailors and sea captains. Here the word לְבַד cannot be understood as a fault of some kind in the ships of Tyre, but rather as maintenance activity in need of the expertise of professional workers and the wisdom of elders and men of experience in order to maintain a ship (the grammatical form hif’il as opposed to pi’el). This meaning of the word לְבַד allows us to understand the term לְבַד לְבַד in the Bible as a renovation of some kind. The verb לְבַד, a common Hebrew word today, does not appear in the Bible more than the few times cited above (the verb לְבַד is used to indicate an activity of careful perusal), and very possibly may not originate from Hebrew but from Phoenician, since it appears in the Bible only in relation to two topics (the Temple construction and ship maintenance) where Phoenicians played a major role in both activities.

It therefore seems to me that we cannot rely heavily on the original exact forms of the term לְבַד or לְבַד לְבַד in our attempt to investigate the question of authenticity since it is possible that already in ancient days the Judeans added the verbs לְבַדְּךָ (to hold) and לְבַדְּךָ (to strengthen) that do not belong together. Therefore, the expression לְבַדְּךָ לְבַד לְבַד that appears in the inscription is not necessarily a modern mistake but an ancient one.

Finally, I will take the role of devil's advocate and contend that it seems to me that the inscription is indeed authentic since it is difficult for me to believe that a forger (or group of forgers) should be so knowledgeable of all aspects of the inscription - the physical, paleographic, linguistic and biblical - to produce such an object.

Moreover, the inscription lacks a heading which probably referred to the Temple and King Yehoash. It seems to me that if written in modern times for profit, or for publicity or prestige, or political reasons connected with the Temple Mount and current events, the producer of the inscription would have left that part whole and broken or concealed a different part of the inscription.

The missing part is that which obliged the IAA to act. The scholars who examined the object have no knowledge but only conjectures regarding its authenticity. I presume that finding the upper part - if it will ever be found whole and in its original context - would bring us closer to the truth. Until then, let each one remain with his own degree of conviction about its authenticity. Since such a chance find is very slim, but still exists, we have no choice but to safeguard the object in the National Collections.

**Prof. Ronny Reich
Department of Archaeology
Haifa University**

**16 June 2003
Dr. Gideon Avni
Israel Antiquities Authority
Jerusalem**

Subject: Yehoash Inscription and Jacob brother of Jesus

As you know, I submitted to you my opinion that both inscriptions are authentic. Regarding the Yehoash inscription, I asserted that it would be difficult to find a person so knowledgeable of the linguistics, content and physical aspects to produce such an object.

In the final meeting of our committee (Writing and Content) I noted to my colleagues that the method I used was to assume from the beginning that the inscriptions are authentic unless I will be convinced by my own observations, or by those of other scholars.

My committee colleagues did not convince me.

However, our committee was presented with the results of the parallel committee (the Materials Committee). Mainly, the results of the new geological study conducted by my friends Avner Ayalon from the Geological Survey of Israel and Professor Yuval Goren of Tel Aviv University, discussing the patina inside the letters of both inscriptions.

Having some knowledge of geology, and in light of the data presented, I must note that I am now convinced that the patina we have seen was produced and placed inside the letters in an artificial manner and could not have been produced in nature in ancient times, in both inscriptions. As a result, I am forced to change my opinion on the matter.

Sincerely,

**Prof. Ronny Reich
Department of Archaeology
Haifa University**

|Title Page|

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General Resurrection

Resurrection is the rising again from the dead, the resumption of life. The Fourth Lateran Council teaches that all men, whether elect or reprobate, "will rise again with their own bodies which they now bear about with them" (cap. "Firmiter"). In the language of the creeds and professions of faith this return to life is called resurrection of the body (resurrectio carnis, resurrectio mortuorum, anastasis ton nekron) for a double reason: first, since the soul cannot die, it cannot be said to return to life; second the heretical contention of Hymeneus and Philitus that the Scriptures denote by resurrection not the return to life of the body, but the rising of the soul from the death of sin to the life of grace, must be excluded. (We shall treat of the Resurrection of Jesus Christ in a separate article; here, we treat only of the General Resurrection of the Body.)

"No doctrine of the Christian Faith", says St. Augustine, "is so vehemently and so obstinately opposed as the doctrine of the resurrection of the flesh" (In Ps. Ixxxviii, sermo ii, n. 5). This opposition had begun long before the days of St. Augustine: "And certain philosophers of the Epicureans and of the Stoics ", the inspired writer tells us (Acts, xvii, 18, 32), "disputed with him [Paul] ...and when they had heard of the resurrection of the dead, some indeed mocked, but others said: We will hear thee again concerning this matter." Among the opponents of the Resurrection we naturally find first those who denied the immortality of the soul; secondly, all those who, like Plato, regarded the body as the prison of the soul and death as an escape from the bondage of matter; thirdly the sects of the Gnostics and Manichaeans who looked upon all matter as evil; fourthly, the followers of these latter sects the Priscillianists, the Cathari, and the Albigenses; fifthly, the Rationalists, Materialists, and Pantheists of later times. Against all these we shall first establish the dogma of the resurrection, and secondly consider the characteristics of the risen body.

A. DOGMA OF THE RESURRECTION

The creeds and professions of faith and conciliar definitions do not leave it doubtful that the resurrection of the body is a dogma or an article of faith. We may appeal, for instance, to the Apostles' Creed, the

so-called Nicene and Athanasian Creeds, the Creed of the Eleventh Council of Toledo, the Creed of Leo IX, subscribed by Bishop Peter and still in use at the consecration of bishops the profession of faith subscribed by Michael Palaeologus in the Second Council of Lyons, the Creed of Pius IV, and the Decree of the Fourth Lateran Council (c. "Firmiter") against the Albigenses. This article of faith is based on the belief of the Old Testament, on the teaching of the New Testament, and on Christian tradition.

(1) Old Testament

The words of Martha and the history of the Machabees show the Jewish belief towards the end of the Jewish economy. "I know ", says Martha, "that He shall rise again, in the resurrection at the last day" (John, xi, 24). And the third of the Machabee martyrs put forth his tongue and stretched out his hands, saying: "These I have from heaven, but for the laws of God I now despise them: because I hope to receive them again from him" (II Mach., xii, 11; cf. ix, 14). The Book of Daniel (xii, 2; cf. 12) inculcates the same belief: "Many of those that sleep in the dust of the earth, shall awake: some unto life everlasting, and others unto reproach, to see it always." The word many must be understood in the light of its meaning in other passages, e. g. Is., liii, 11-12; Matt., xxvi, 28; Rom., v, 18-19. Though Ezechiel's vision of the resurrection of the dry bones refers directly to the restoration of Israel, such a figure would be hardly Israel, such a figure would be hardly intelligible except by readers familiar with the belief in a literal resurrection (Ez., xxxvii). The Prophet Isaias foretells that the Lord of hosts "shall cast down death headlong forever" (xxv, 8), and a little later he adds: "Thy dead men shall live, my slain shall rise again. . . the earth shall disclose her blood, and shall cover her slain no more" (xxvi, 19-21). Finally, Job, bereft of all human comfort and reduced to the greatest desolation, is strengthened by the thought of the resurrection of his body: "I know that my Redeemer liveth, and in the last day I shall rise out of the earth. And I shall be clothed again with my skin, and in my flesh I shall see God. Whom I myself shall see, and my eyes shall behold, and not another; this hope is laid up in my bosom" (Job, xix, 25-27). The literal translation of the Hebrew text differs somewhat from the foregoing quotation, but the hope of resurrection remains.

(2) New Testament

The resurrection of the dead was expressly taught by Christ (John, v, 28-29; vi, 39-40; xi, 25; Luke, xiv, 14) and defended against the unbelief of the Sadducees, whom He charged with ignorance of the power of God and of the Scriptures (Matt., xxii, 29; Luke, xx, 37). St. Paul places the general resurrection on the same level of certainty with that of Christ's Resurrection: "If Christ be preached, that he rose again from the dead, how do some among you say that there is no resurrection of the dead? But if there be no resurrection of the dead, then Christ is not risen again. And if Christ be not risen again, then is our preaching vain, and your faith is also vain" (I Cor., xv, 12 sqq.). The Apostle preached the resurrection of the dead as one of the fundamental doctrines of Christianity, at Athens, for instance (Acts, xvii, 18, 31, 32), at Jerusalem (xxiii, 6), before Felix (xxiv, 15), before Agrippa (xxvi, 8). He insists on the same doctrine in his Epistles (Rom., viii, 11; I Cor., vi, 14; xv, 12 sqq.; II Cor., iv, 14; v, 1 sqq.; Phil., iii, 21; I Thess., iv, 12-16; II Tim., ii, 11; Hebr., vi, 2), and in this he agrees with the Apocalypse (xx, 12 sqq.).

(3) Tradition

It is not surprising that the Tradition of the early Church agrees with the clear teaching of both the Old and New Testaments. We have already referred to a number of creeds and professions of faith which may be considered as part of the Church's official expression of her faith. Here we have only to point out a number of patristic passages, in which the Fathers teach the doctrine of the general resurrection in more or less explicit terms. St. Clement of Rome, I Cor., xxv; St. Justin Martyr, "De resurrect.", vii sqq.; Idem, "Dial. c. Tryph.", lxxx; Athenagoras, "De resur. carn.", iii; Tatian, "Adv. Graec.", vi; St. Irenaeus, "Contra haer.", I, x; V, vi, 2; Tertullian, "Contra Marcion.", V, ix; Idem, "De praescript.", xiii; Idem, "De resurrect. carn.", I, xii, xv, lxiii; Minucius Felix, "Octav.", xxxiv; Origen, tom. XVII, in Matt., xxix; Idem, "De princip.", praef., v; Idem, "In Lev.", v, 10; Hippolytus, "Adv. Graec." in P. G., X, 799; St. Cyril of Jerusalem, "Cat.", XVIII, xv; St. Ephraem, "De resurrect. mort."; St. Basil, "Ep. cclxxi", 3; St. Epiphanius, "In ancor.", lxxxiii sq., xcix; St. Ambrose, "De excessu frat. sui Satyri", II, lxxvii, cii; Idem, "In Ps. cxviii", serm. x, n. 18; Ps. Ambr., "De Trinit.", xxiii, in P. L. XVII, 534; St. Jerome, "Ep. ad Paul"

in LIII, 8; Rufinus, "In symbol.", xlv sq.; St. Chrysostom (Ps. Chrysostom), "Fragm. in libr. Job" in P. G., LXIV, 619; St. Peter Chrysologus, serm. 103, 118; "Apost. Constit.", VII, xli; St. Augustine "Enchirid.", 84; Idem, "De civit. Dei", XX, xx; Theodoret, "De provident.", or. ix; "Hist. eccl.", I, iii.

The general resurrection can hardly be proved from reason, though we may show its congruity.

- a.. As the soul has a natural propensity to the body, its perpetual separation from the body would seem unnatural.
- b.. As the body is the partner of the soul's crimes, and the companion of her virtues, the justice of God seems to demand that the body be the sharer in the soul's punishment and reward.
- c.. As the soul separated from the body is naturally imperfect, the consummation of its happiness, replete with every good, seems to demand the resurrection of the body.

The first of these reasons appears to be urged by Christ Himself in Matt., xxii, 23; the second reminds one of the words of St. Paul, I Cor., xv, 19, and II Thess., i, 4. Besides urging the foregoing arguments, the Fathers appeal also to certain analogies found in revelation and in nature itself, e.g. Jonas in the whale's belly, the three children in the fiery furnace, Daniel in the lions' den, the carrying away of Henoah and Elias, the raising of the dead, the blossoming of Aaron's rod, the preservation of the garments of the Israelites in the desert, the grain of seed dying and springing up again, the egg, the season of the year, the succession of day and night. Many pictures of early Christian art express these analogies. But in spite of the foregoing congruities, theologians more generally incline to the opinion that in the state of pure nature there would have been no resurrection of the body.

B. CHARACTERISTICS OF THE RISEN BODY

All shall rise from the dead in their own, in their entire, and in immortal bodies; but the good shall rise to the resurrection of life, the wicked to the resurrection of Judgment. It would destroy the very idea of resurrection, if the dead were to rise in bodies not their own. Again, the resurrection, like the creation, is to be numbered amongst the principal works of God; hence, as at the creation all things are perfect from the hand of God, so at the resurrection all things must be perfectly

restored by the same omnipotent hand. But there is a difference between the earthly and the risen body; for the risen bodies of both saints and sinners shall be invested with immortality. This admirable restoration of nature is the result of the glorious triumph of Christ over death as described in several texts of Sacred Scripture: Is., xxv, 8; Osee, xiii, 14; I Cor., xv, 26; Apoc., ii, 4. But while the just shall enjoy an endless felicity in the entirety of their restored members, the wicked "shall seek death, and shall not find it, shall desire to die, and death shall fly from them" (Apoc., ix, 6).

These three characteristics, identity, entirety, and immortality, will be common to the risen bodies of the just and the wicked. But the bodies of the saints shall be distinguished by four transcendent endowments, often called qualities.

a.. The first is "impassibility", which shall place them beyond the reach of pain and inconvenience. "It is sown", says the Apostle, " in corruption, it shall rise in incorruption" (I Cor., xv, 42). The Schoolmen call this quality 'impassibility', not incorruption, so as to mark it as a peculiarity of the glorified body; the bodies of the damned will be incorruptible indeed, but not impassible; they shall be subject to heat and cold, and all manner of pain.

b.. The next quality is "brightness", or "glory", by which the bodies of the saints shall shine like the sun. "It is sown in dishonour," says the Apostle, "it shall rise in glory" (I Cor., xv, 43; cf. Matt., xiii, 43; xvii, 2; Phil., iii, 21). All the bodies of the saints shall be equally impassible, but they shall be endowed with different degrees of glory. According to St. Paul: "One is the glory of the sun, another the glory of the moon, another the glory of the stars. For star differeth from star in glory"(I Cor., xv, 41-42).

c.. The third quality is that of "agility", by which the body shall be freed from its slowness of motion, and endowed with the capability of moving with the utmost facility and quickness wherever the soul pleases. The Apostle says: "It is sown in weakness, it shall rise in power" (I Cor., xv, 43).

d.. The fourth quality is "subtlety", by which the body becomes subject to the absolute dominion of the soul. This is inferred from the words of the Apostle: "It is sown a natural body, it shall rise a spiritual body" (I Cor., xv, 44). The body participates in the soul's more perfect and

spiritual life to such an extent that it becomes itself like a spirit. We see this quality exemplified in the fact that Christ passed through material objects.

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A.J. MAAS

Transcribed by Donald J. Boon

Dedicated to Bishop Andre Cimichella of Montreal, and to Blessed Kateri Tekakwitha

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Application: Interim National Bank Charter

**We, the undersigned, having associated ourselves to organize an
association for carrying on the business of banking, under the
provisions of the United States Code, as amended, do make and execute
the following Organization Certificate, Articles of Association, and
Oath of Bank Directors.**

Organization Certificate

FIRST. The title of the association shall be

**THE CRYONIC LIFE INSURANCE NATIONAL BANK & TRUST
COMPANY**

**SECOND. The main office of the association shall be located at 512
Onondaga Ave, Syracuse, county of ONONDAGA, and state of NEW
YORK where it shall conduct the general business of banking, or limit
such business as may be noted in the association's Articles of
Association.**

**THIRD. The authorized capital stock of this association shall be \$1000
BILLION DEPOSIT DOLLARS Millionaire Bank USA, or other bank
notes, in trust, and be divided into 100 Billion shares of \$ 1.00 each.**

FOURTH. The name and residence of each shareholder of this association, with the number of shares that will be held by each, are:

**Residence
Name**

**REVEREND DANIEL IZZO
512 ONONDAGA AVE, SYRACUSE, NEW YORK 13207 USA
(Town or City and State) Number of Shares**

FIFTH. This certificate is made so that we may avail ourselves of the advantages of the aforesaid provisions of the United States Code, as amended.

Articles of Association

For the purpose of organizing an association to perform any lawful activities of national banks, the undersigned enter into the following Articles of Association:

FIRST. The title and main office location of this association shall be as described in the above Organization Certificate.

SECOND. The business of the association will be limited to participating in a business combination with another financial institution.

THIRD. The board of directors of this association shall consist of the undersigned organizers of this national banking association, who shall own common or

preferred stock of the association or a holding company owning the association with such value and under such terms as required by the United States Code, as amended, and any regulations promulgated thereunder.

FOURTH. The authorized amount of capital stock of this association shall be 1000 Billion shares of common stock of the par value of 1000 Billion dollars (\$ 1.00) each.

FIFTH. The board of directors shall have the power to make contracts related to the business combination for which this association is organized.

SIXTH. The corporate existence of this association shall continue until termination according the laws of the United States.

Oath of Bank Directors

As a director of this national banking association, I will diligently and honestly administer the affairs of this association, and not knowingly violate or willingly permit to be violated any of the provisions of the National Bank Act, and hereby confirm that I own, or will own after the formation of this association the capital stock required by 12 USC 72.

In witness whereof, we have hereunto set our hands this ____ day of _____, 20__.

Print or Type Names

Signatures _____

REVEREND DANIEL IZZO signed

Notary's Affirmation

Sworn to before me and subscribed in my presence, this ____ day of _____, _____.

Notary Public _____

My Commission Expires _____

OK Here's the Joke:

Funniest Joke of the Decade: The Bogus National Debt

(1)

**The U.S. Congress asks the Federal Reserve Private Banks
to borrow some Dollars on loan .**

(2)

The Federal Reserve Private Banks say:

**" OK, we will loan you United States DOLLARS " at interest ,
but never gives Congress Dollars ,
instead they give Congress ,
valueless paper promises to pay in Dollars ,
that aren't redeemable in Dollars .**

(3)

**So what does Congress owe the Federal Reserve Banks
if Congress never recieved any real Dollars ?**

Answer:

Maybe National Bank Notes ?

(I am still laughing , after all these years Congress never need to borrow Dollars anyways, it has trillions of dollars in grains of gold under ground , at 15.9 grains of gold per dollar , it could just issue UNITED STATES GOLD CERTIFICATES backed by its own unused gold in abandoned / working gold mines)

funny joke right ?

**Photo of a United States Gold Certificate can be backed by the United States un mined underground GOLD at 15.9 grains of gold per Dollar
STILL AND PAYABLE IN LAB CREATED GOLD COINS**

The 'Lawful Money' Question

by Dr. Edward Flaherty

The constitution in Article I, section 10 reads "No state shall...coin money, emit bills of credit, make any thing but gold and silver a tender in payment of debts..." This means that the only constitutionally valid forms of money are gold or silver coin. This is called 'lawful money.' U.S. paper money used to be redeemable in lawful money, but no more. Our monetary system is based on unconstitutional forms of money. At least, this is how a few conspiracy theorists see it.

The source of their confusion is easy to see and, in this case, easy to understand. Simmons (1939) and Cross (1939) shed some light on the subject. The phrase 'lawful money' had appeared repeatedly in the money and banking laws of the U.S. in the first half of this century, but had never been explicitly defined. It first appeared on February 25, 1862 when Congress authorized the issue of greenbacks and declared them to be "lawful money and a legal tender" for all debts, public and private. 1 This terminology may have been adopted to promote the

acceptability of the currency, since the occasion was the first in which Congress attempted to make a paper money a legal tender. 3 At this point in time, then, the terms 'lawful money' and 'legal tender' had no distinct meaning. They were they same thing.

During the Civil War era Congress gave several types of money the status 'lawful money.' On March 17, 1862 Congress declared that Treasury notes (not the T-note debt instrument we know by that name today) were lawful money. February 12, 1862 saw Congress make clearinghouse certificates a lawful money. After the Civil War, on July 12, 1870, Congress placed the U.S. back on the gold standard and specified what types of money national banks could count to meet their legal reserve requirements. "The terms 'lawful money' and 'lawful money of the United States,'" the Act read, "when applied to these banks shall be held and construed to mean gold or silver coin of the United States." 1 So, by 1870 greenbacks, Treasury notes, clearinghouse certificates, and gold and silver coin were all 'lawful money.' The annoying part, though, is that Congress never stated exactly what lawful money was supposed to be. The only concrete conclusion that can be reached is that lawful money and legal tender were two separate things. Lawful money was money that banks could count toward satisfying their reserve requirements. Legal tender was any money that government would accept in payment of taxes. Some money was lawful money, but not all lawful money was legal tender. And vice versa. Confused?

One last example of the confusion Congress created on the lawful money topic concerns Federal Reserve notes. Prior to 1933-34, they were redeemable at any Federal Reserve bank "in gold or lawful money," and Federal Reserve banks were compelled to hold a 35% reserve "in gold or lawful money" behind their deposits. Congress did not use the phrase "in gold or in other forms of lawful money." It definitely set the terms in contrast to each other. This leads one to conclude that Congress did not deem gold to be lawful money, which at the time would have been absurd. 1

After 1933 all forms of U.S. money were conferred with legal tender status. This set up a paradox for currency redeemability. Federal Reserve notes and U.S. Notes, for example, were redeemable in "lawful

money," but what was lawful money? Because redeemability had ended, there was no longer any distinction between lawful money and legal tender. Federal Reserve notes were therefore redeemable with other Federal Reserve notes, or with U.S. Notes, or with any other legal tender.

To illustrate how some people were confused by this, consider the following correspondence between the U.S. Treasury and citizen of Cleveland. 2

**December 9, 1947
Honorable John W. Snyder
Sec. of the Treasury
Washington, D.C.**

Dear Sir:

I am sending you herewith via registered mail one ten-dollar Federal Reserve note. On this note is inscribed the following:

"This note is legal tender for all debts, public and private, and is redeemable in lawful money at the United States Treasury or at any Federal Reserve bank."

In accordance with this statement, will you send me \$10.00 in lawful money?

**Very truly yours,
A.F. Davis**

**December 11, 1947
Mr. A.F. Davis
12818 Colt Road
Cleveland 1, Ohio**

Dear Mr. Davis,

Receipt is acknowledged of your letter of December 9th with enclosure of one ten dollar Federal Reserve note.

In compliance with your request, two five-dollar United States notes are transmitted herewith.

**Very truly yours,
M.E. Slindee,
Acting Treasurer**

**December 23, 1947
Mr. M.E. Slindee
Acting Treasurer
Treasury Department
Fiscal Service
Washington 25, D.C.**

Dear Sir:

Receipt is hereby acknowledged of two \$5.00 United States notes, which we interpret from your letter to be considered lawful money. Are we to infer from this that Federal Reserve notes are not lawful money?

**I am enclosing one of the \$5.00 notes which you sent me. I note that it states on the face,
"The United States of America will pay to the bearer on demand five dollars."**

I am hereby demanding five dollars.

**Very truly yours,
A.F. Davis**

December 29, 1947

**Mr. A.F. Davis
12818 Colt Road
Cleveland 1, Ohio**

Dear Mr. Davis:

Receipt is acknowledged of your letter of December 23rd, transmitting one \$5 United States note with a demand for payment of five dollars.

Your are advised that the term "lawful money" has not been defined in federal legislation. It first came to use prior to 1933 when some United States currency was not legal tender but could be held by national banking institutions as lawful money reserves. Since the act of May 12, 1933, as amended by the Joint Resolution of June 5, 1933, makes all coins and currency of the United States legal tender and the Joint Resolution of August 27, 1935, provides for the exchange of United States coin or currency for other types of such coin or currency, the term "lawful money" no longer has such special significance.

The \$5 United States note received with your letter of December 23rd is returned herewith.

**Very truly yours,
M.E. Slindee,
Acting Treasurer**

It is understandable how reasonable people can become confused when studying the history of the terms 'lawful money' and 'legal tender' in U.S. history. The blame for this rests with Congress who never bothered to define lawful money when it first used the term. However, the line of thinking that it is defined by the constitution as only gold or silver coin is incorrect. The constitution makes no such definition. Moreover, the restriction that States not make anything but gold or silver a legal tender does not apply to Congress, only to the States. Congress may declare anything it wishes a legal tender. And as the history above shows, it certainly has.

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1. Cross, Ira B. (1938), "A note on lawful money," *Journal of Political Economy*, pp. 409-13.
2. Ritter, Lawrence (1961), *Money and economic activity: Readings in money and banking*, Boston: Houghton-Mifflin.
3. Simmons, Edward C. (1938), "The concept of lawful money," *Journal of Political Economy*, pp. 108-18.

[The Gravitational Instability Cosmological Theory of the Formation of the Universe .](#)

**[When The Universe Started To Fall](#)
[by Reverend Daniel Izzo](#)**

Saturday, August 21, 2004

The Gravitational Instability Cosmological Theory on the Formation of the Universe

WHEN DID MOTION FIRST START ?

The Gravitational Instability Cosmological Theory on the Formation of the Universe.

When the Universe started to fall

(1) The expansion of the universe is a result of the " heat ' contained therein;

(2) The source of the " heat " is the cosmic microwave radiation backround at 3 kelvin, wherein;

(3) The microwave electro magnetic-nuclear energy was formed as a result of the interaction of two different static gravitational vacuum fields, causing gravitational

instability and the motion, void of matter, at this time,

wherein; static gravitational field (1) began to go into "motion".

Therefore; only (2) static gravitational vacuum fields alone, being void of $E=MC^2$

could create $E=MC^2$; and the matter of the Universe.

When did motion first start ?

Science knows the formation of matter in our universe was caused by the forces of the

universe.

These forces are:

(1) The Force of Gravity

(2) The Force of Electro Magnetism

(3) The Strong Nuclear Force

(4) The Weak Nuclear Force

At some point in time, motion within the universe, had to begin.

The paradox would be, what force could cause motion to begin, without moving in its present space-time ?

The Gravitational Cosmological Theory was developed from an is rooted in the Einstein Steady State Theory and the Bondi-Gold-Hoyle Steady State Theory,

Wherein the Steady State Theory the universe, contains more protons than electrons that create dust particles and galaxies formed in their current locations and the cosmic

matter is recycled therein at the center of the galaxy furnace.

When the Universe started to fall:

The Gravitational Instability Cosmological Theory on the Formation of the Universe.

The Theory:

(1) The expansion of the universe is a result of the " heat ' contained therein;

(2) The source of the " heat " is the cosmic microwave radiation backround at 3 kelvin, wherein;

(3) The microwave electro magnetic-nuclear energy was formed as a result of the interaction of two different static gravitational vacuum fields, causing gravitational instability and the motion, void of matter, at this time, wherein; static gravitational field (1) began to go into "motion".

Therefore; only (2) static gravitational vacuum fields alone, being void of $E=MC^2$

could create $E=MC^2$; and the matter of the Universe.

Q: When did this motion start?

A: If a neutral particle is able to resist the universal motion, in theory, that particle

would go back in time. Going back in time the neutral particle would then enter into (1)

of the (2) motionless-static gravity vacuum fields void of motion, and cause an unbalance

and gravitational instability and this interaction would create motion and energy particles.

Q: What causes a gravitational static vacuum field in the first place ?

A: Pressure force is used to create a vacuum on Earth, perhaps an exotic something

100,000 times weaker than the force of gravity decays, causing a static-motionless gravity vacuum field.

Theory by

**Rev Daniel Izzo July 2002
512 Onondaga Ave
Syracuse, NY 13207**

**10/22/2005 contribution in part 2 of theory was made by Ezra
Caruducci deceased Nov 2004 # 315-637-8621 Manlius NY in 2001 ,
named in Nobel Nomination prior to death.**

**Subj: The Steady State Theory verses The Big Bang Theory /
Cosmological alternatives**

Alternative Theory (2)

The Steady State Galaxy Theory

**by R.Rufus Young
galaxy@nbnet.nb.ca
Last revised Dec 30,1996**

An Alternative To

The Big Bang Theory

Go to Text only version. INDEX

**Introduction
Basic Operation of Galaxies
Mass and Energy
Shape of Galaxies
Red Shift
Microwave Background Radiation
Entropy
Hydrogen-Helium Ratio
Quasars
Summary Introduction**

The purpose of this Web Page is to show that the Steady State Galaxy Theory can provide an alternative to the Big Bang Theory in explaining the universe around us. It covers the operation of Galaxies and shows that they recycle both Matter and Energy and are able to carry on indefinitely. It also explains the Shape of Galaxies, Red Shift, Microwave Background Radiation, Entropy and the Hydrogen-Helium Ratio.

If the reader takes an open-minded approach and looks at all aspects of the material presented here before reaching any conclusions, it will, at least, provide them with some food for thought.

Basic Operation of Galaxies

At the center of each galaxy is a neutroid which acts to constantly recycle all the matter and energy in the galaxy. This neutroid is similar to a neutron star but is very much larger and has reached a size where the pressure and temperature at its surface are great enough to generate a nuclear fusion process. In the areas of the neutroid's magnetic poles, the products of fusion are trapped by the magnetic field and are pushed out along the magnetic field by the pressure of the nuclear fusion process going on below. This results in a column of material composed of hydrogen, helium and other light elements being ejected at each of the neutroid's two magnetic poles. This material moves out from the neutroid at essentially constant velocity until it reaches a point where the magnetic field is no longer strong enough to control it. Once free of the magnetic field the material then continues under it's own momentum to travel to the outer edge of the galaxy before starting to fall back toward the neutroid.

This process enables the neutroid to eject matter from itself and results in jets of hydrogen and helium ions being produced at each of the neutroid's two magnetic poles. The larger the neutroid becomes, the greater the size and velocity of its jets. This becomes a stable and self-limiting process where the amount of material attracted to the neutroid will be equal to the amount of material expelled at its magnetic poles. Eventually if too much material is added to the

system, the velocity of the material being ejected from the magnetic poles will be sufficient for it to escape from the system altogether, thus limiting the total mass the system can accumulate. This process forms the basis of operation of all galaxies. The size and shape of galaxies are determined by the size of the neutroid at their center and its rate and plane of rotation. In the case of our own galaxy (The Milky Way) these jets have sufficient momentum to carry the material out to 100,000 light years distance from the center.

As the jets of gas stream out from the Neutroid, large clouds of it condense and form the stars which are predominately located in the spiral arms of the Galaxies. These stars eventually burn up their Hydrogen fuel and in the process create the other heavier elements we find in the universe, all the while continuing to travel to the outer edge of the galaxy. It has probably been at least 10 Billion years since the material of which our solar system is composed was initially ejected from the neutroid. It is now located about 2/3rds the distance to the edge of the galaxy, but since it is constantly decelerating it will take it another 20 billion years to reach its maximum distance from the neutroid. The total transit time from when material is ejected from the neutroid at the center of the Milky Way to when it returns to the neutroid will be about 60 Billion years.

Although the material ejected by the neutroid appears to travel in a spiral arc, in actual fact it is travelling in a straight radial line out from the neutroid and will eventually travel back along the same radial path to the neutroid. To help visualize this process, imagine setting up two super cannons, each on opposite sides of the earth at the equator and each pointing straight up and each capable of firing a projectile with sufficient velocity that it will take 12 hours to reach the top of its projectory. Now, fire a projectile from each cannon every hour for 12 hours and plot the position of each projectile at the end of the 12 hours. The result, as shown in figure 1, will be two spiral arms much like the Galactic arms are shaped.

IF we continue the experiment for another 3 hours and draw a new plot, figure 2, we find that the first projectiles that were fired have now passed the peak of their altitude and have started to fall back to earth and the whole spiral pattern appears to have rotated

counterclockwise 45 degrees. However, the only changes in the positions of projectiles No.1 have been to move slightly closer to the earth along a radial line and they will continue falling back to earth along the same radial path and will impact the earth 24 hours after being fired. They do not themselves travel in a spiral path around the earth although the loci of their instantaneous positions forms a spiral which appears to be rotating.

Figure 3 represents a typical small galaxy which is composed of 3 parts, (a) a Central Core (Area 1), (b) 2 Jets of material being ejected from the core (Areas 1 to 2), and (c) Spiral Arms (Areas 2 to 3). The Central Core consists of a neutroid at the center and an obscuring mass of material trapped in the Neutroid's magnetic field. The areas from 1 to 2 are gigantic jets of gas which are being ejected by the Neutroid and are contained within its magnetic field. Star formation occurs in these areas. At point 2 the magnetic field of the Neutroid weakens to the extent that it no longer constrains the material within it and as the material continues to move outward it will now trace a spiral arc as per the previous illustrations in Figs. 1 & 2. At point 3 the hydrogen fuel has been consumed and although the remains of the burned out stars are still there they become invisible dark matter as they continue to travel to the top of their projectory and then fall back to the Neutroid.

Thus, the galaxies form huge recycling systems which will carry on indefinitely.

Hydrogen, helium and other light elements are ejected from the Neutroid.

Clouds of this material condense to form stars which emit energy and in the process form heavier elements.

These stars eventually exhaust their fuel and die. In the process many of these stars will explode as supernovas. The heavier elements which we find in our solar system are the remnants from these dead stars.

All this material will travel to the outer edge of the galaxy and will then start falling back in toward the neutroid.

Upon hitting the neutroid, the force of the impact will be great enough that the atoms of heavier elements will be split apart and the

temperature and pressure will be great enough that this incoming matter will be converted to neutrons.

In the areas of the neutroid's magnetic poles, a nuclear fusion reaction will take place that forces a streams of material to be expelled thus completing the cycle.

(return to index)

Mass and Energy

Einstein showed that mass and energy are related by the formula $E=MC^2$. What this famous formula says is that what we call the mass of a particle is really nothing more than a measure of the sum total of all forms of energy associated with that particle. The various forms of energy include potential energy, kinetic energy, chemical energy, nuclear binding energy, etc. Of these various forms of energy, potential energy is the most important and accounts for the largest part of the mass of particles which constitute our immediate enviroment.

When a particle is in a deep gravational well, such as in the case of particles that make up the neutroid at the center of galaxies, they have very little potential energy, and hence, very little rest mass. As they are pushed out from the neutroid their potential energy and hence their rest mass is increased dramatically. When these particles eventually fall back into the neutroid, this potential energy is converted to kinetic energy and results in the particles making up the neutroid having very little rest mass but a tremendous amount of kinetic energy.

This combination of low rest mass and high kinetic energy prevent the neutroid from collapsing into a black hole as has been speculated by many scientists. This combination also makes it relatively easy for a nuclear fussion process to push material out from the neutroid in the area of the neutroid's magnetic poles.

(return to index)

Shape of Galaxies

The Concept of the Steady State Galaxy as put forth above can account for the shape of all galaxies we see in the universe. As explained above, the spiral is the basic shape of galaxies. The exact shape will be determined by the size of the neutroid, the tilt of its magnetic axis with respect to its axis of rotation and its rate of rotation .

Our Milky-Way is typical of large mature galaxies in which it takes many billions of years for the magnetic poles to make one revolution. As well, the hydrogen ejected at the magnetic poles has sufficient velocity to reach a distance of 100,000 light-years from the Neutroid and it takes it tens of billions of years to reach that distance. If the rate of rotation of the magnetic poles of the Neutroid were much greater in relation to the velocity of the hydrogen jets, the spiral arms would overlap and become nondistinct thus forming an ELIPICAL Galaxy. If the magnetic axis were slightly less than 90 degrees with respect to the axis of rotation, a thicker galaxy would result.

BAR Galaxies are small galaxies in which the hydrogen fueling the Stars is all consumed before the Stars can escape the magnetic field of the Neutroid's magnetic poles.

Many galaxies such as M104(NGC4594) exhibit a very prominent dust lane about their edge. This is a feature that is difficult to explain using presently accepted theories but is to be expected in some types of galaxies under the steady state galaxy theory.

(return to index)

Red Shift

The Big Bang Theory was originally proposed in order to explain the 'RED Shift' of light received by us from distant galaxies. Light received from distant stars can be broken down and analyzed as to its spectral content. It has been found that stars of a similar size and age produce identical spectral patterns which are related to their atomic composition. However, it was also found that the wavelength

of the light from distant galaxies was increased in proportion to their distance from us. Scientists have interpreted the cause of this effect to be due to a doppler shift, meaning that it is caused by the distant galaxies moving away from us,-i.e. the expanding universe. This doppler shift is the same as one gets standing near a railway track when a train passes blowing its whistle, as the train passes by, the sound of its whistle appears to drop in frequency.

In reality the universe we live in is not expanding and is in a steady state where its matter and energy are being constantly recycled. The so called Red Shift is caused by other factors. We know from a branch of Physics known as Quantum Mechanics that the Energy of a photon of light is defined by the equation $E=h\nu$ where E is the energy of the photon, h is plancks' constant and ν is its frequency. If for any reason energy is lost from a photon, its frequency will decrease in accordance with this equation.

Scientists do not as yet have a good understanding of the nature of a photon as to whether it is a particle or a wave, or some combination of both. Although experiments done by Michhelson and Morley and others have been interpreted to rule out the existence of an universal aether, this is by no means certain. Scientists can't measure what happens to a photon over a period of a minute, let alone what happens to to it over a period of a billion years. Based on current knowledge, there is no way scientists can state with absolute certainty that photons do not lose energy over time.

The mechanism for the lose of energy by photons over time is still unclear. It could be by interaction of the photon with the stray atoms of hydrogen which are dispersed throughout intergalactic space. It is well known that photons do exert 'radiation pressure' on particles they encounter and if pressure is exerted, then energy must be transferred. Another possibility is that there is indeed an aether which absorbs some energy over time and reradiates it as a black body radiator having a temperature of 2.8 degrees K. One thing that is clear is that the radiation density of the starlight photons which leave own galaxy is equal to the radiation density of the Microwave Background radiation which is received by our galaxy. This fact is probably more than a coincidence and is an indication that the

starlight radiation is being converted by some unknown process to the Microwave Background radiation. It is every bit as reasonable to assume that the Red Shift is caused by loss of energy of the photon over time as it is to assume that it is caused by a doppler effect.

Because of the downshifting in the frequency of light for whatever reason, there is a limit to how far it is possible to image distant galaxies. The actual universe will be far larger than we can imagine or detect and will probably be infinite in size.

(return to index)

MicroWave Background Radiation

A second argument which has been made to support the Big Bang Theory is the microwave background radiation. COBE has shown that the spectrum of the Microwave Background Radiation (MBR) is that of an ideal Black Body Radiator having a temperature of about 2.8 degrees K. It has also shown that this radiation has a Redshift/Blueshift to it, indicating that the earth is moving about 300Km/s relative to the shell of matter that emitted the radiation. Since this speed is too great for the earth's movement within the milky-way galaxy, it indicates that the source is outside our galaxy and that our galaxy is moving in relation to that source.

As indicated in the previous section dealing with redshift, the starlight photons radiated by galaxies gradually lose energy through some unknown process which then reradiates this energy as the Microwave Background Radiation. The wavelength of the photons of the MBR, at the peak of the spectrum radiation curve, will be about 1mm. Since the rate of loss of energy by photons will be inversely proportional to the wavelength of those photons, and since the MBR photons have a wavelength of more than a thousand times that of visible light, the percentage loss of energy by the MBR photons will be at a rate of over one thousand times less than that of a visible photon. (If it takes a visible photon 15 billion years to lose 3/4's of it's energy, then it would take a MBR photon 15,000 billion years to lose 3/4's of it's energy). It follows that since MBR photons have a range of travel of more than one thousand times that of visible light

photons, they are also a thousand times more likely to encounter a galaxy and be absorbed by the matter of that galaxy than a visible light photon would.

Thus, energy is radiated by galaxies in the form of starlight photons. Energy from these photons is gradually converted to MBR photons. These MBR photons are eventually absorbed by some other galaxy.

Since the intensity of the microwave background radiation will be relatively constant throughout the universe (assuming an infinite steady state universe), the amount of energy a galaxy will absorb from it will be proportional to the size of that galaxy. The amount of energy a galaxy radiates is also proportional to its size, thus an equilibrium will be reached where a galaxy will receive as much energy in the form of MBR photons as it itself radiates in the form of starlight photons.

(return to index)

Entropy

A third argument that has been put forward in support of the Big Bang Theory is entropy, in that, it is argued that the universe must eventually run down into a state of thermal equilibrium. Energy exists in various forms such as atomic binding energies, thermal energy, potential and kinetic energy, etc., all of which are associated with matter, or it exists in photons which have been radiated by matter and will eventually be reabsorbed by matter. Under the Steady State Galaxy Theory as put forth above, since all matter in a Galaxy is recycled through the Neutroid on a regular basis, all energy contained by that matter is also recycled at the same time and, thus, the universe does not run down into a state of thermal equilibrium.

There is a perception that energy only flows from hot bodies to cooler ones. This is not true for radiant energy. The MBR photons which exhibit the characteristics of a 2.8 degree black body radiator do get absorbed by the much hotter material which makes up the galaxies. The critical factor which determines the direction of net

flow of radiant energy is not the relative temperatures of the bodies but the energy densities they produce. In the case of our universe, the MBR radiation has an energy density equal to the starlight radiation energy density emitted by the galaxies. Thus, there is an equilibrium condition where galaxies receive as much energy in the form of MBR Radiation as they radiate in the form of Starlight Radiation and there will be no net flow of energy from the galaxies to the material in intergalactic space.

(return to index)

Hydrogen-Helium

A fourth argument which has been used to support the Big Bang theory is that it would account for the abundance of helium we find in the universe. The amount of helium present (24%) cannot be accounted for by star production and according to Gamow it was generated by the Big Bang.

Under the Steady State Galaxy theory, the nuclear fusion process which is expelling the material from the neutronium would generate large amounts of helium as well as other light elements and is the source of the excess helium found in the universe.

(return to index)

Quasars

The latest Hubble pictures of quasars show that they are associated with galaxies and in most cases there is evidence that these galaxies have recently collided with other galaxies.

In normal galaxies, the neutronium at their center is obscured by a halo of material trapped in the neutronium's magnetic field. In the case of quasars, this halo of material has been temporarily destroyed by the collision with another galaxy and we are seeing the bare neutronium which is, as expected, extremely energetic.

(return to index)

Summary

The Steady State Galaxy Theory as put forth above can provide the basis for the operation of the Universe as it is seen to exist. It can not only account for the shape of all galaxies we see in the universe which is something no other theory as proposed so far can accomplish but it can also explain the existence of quasars.

As more data is gathered by the Hubble Space Telescope and other sources, it is becoming increasingly clear that the Big Bang theory cannot account for the universe around us. I believe the the Steady State Galaxy Theory as presented here can provide the basis of an alternative to the Big Bang Theory.

(return to index) (return to top of page) Other Interesting Papers

For a historical perspective of the Big Bang Theory see Keith Stein's Essay "The Big Bang Myth"

"Endless, Boundless, Stable Universe" by Grote Reber -a pioneer in the field of Radio Astronomy.

"Dark Matter" and "Hubble's Constant in Terms of the Compton Effect" by John Kierein

Please E-mail me your comments and suggestions.

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VORTEX

Liquid - Gravity Induced Vortex

A plug is pulled under a contained volume of liquid.
The liquid above the discharge opening starts dropping down through the opening creating a lower pressure column of liquid.
The Pascal's rule of pressure in fluids says that the static pressure within the whole volume exerted sideways around this dropping column will attempt to fill into the dropping water column, creating an inverted cone of flow toward the discharge.
The surface plane of the liquid develops a hollow due to the pressure drop above the discharge.
If the liquid column is in a sufficient ratio to the opening diameter, gravitational acceleration at the surface hollow tends to outrun the discharge rate and any slightest impetus causes the liquid sliding down the slope of the depression to spin. Vortex develops easier in a conical vessel than in any other vessel, because it is the surface hollow where the gravitational acceleration causes the liquid to slide into the falling liquid column.
The static pressure orthogonal to the vortex vertical axis acts on the column as the total static pressure (area x force). Vortex spin translates this pressure into accelerating "orbital" speed of the column. (fig 1)
The circular motion component is triggered by external influences, such as rotation of earth, or by general liquid flow, if any. The circular motion within a vortex redirects the strictly centripetal horizontal pressure component in the liquid side railing it off the vertical axis of the vortex, accelerating the vortex circular motion. The static pressure in the liquid surrounding the vortex becomes realized into the circular motion of the vortex. Therefore, the horizontal vector of static pressure acts as a vortex spin accelerator. The dynamic relations within a vortex cause a greater transfer of gravitational energy into liquid circular motion, than can be accounted for by strictly downward static pressure calculations. If the liquid did not spin, the horizontal component of static pressure would act on the vortex axis symmetrically, and the would not be realized as spin motion.

In plain terms; while the orthogonal vector of static pressure from the surrounding volume acts on the column along the "surface" area of the whole column, it accelerates the spin of the column with total

force equal to the static pressure drop per unit of area at the particular depth and at all these units. There are many more units (lets say mm^2) of the surface of the water column than in the cross section of the discharge hole.

In the most simple terms, the area across the static pressure acting on a vortex accelerating its liquid (or fluid) into spin is substantially greater than the cross sectional area of the discharge hole. The acceleration on the falling column comes from vertical acceleration of the column. In other words; the "horizontal" rotational component of gravitational acceleration of the liquid surrounding the vortex speeds up the circular component of water flow around the vortex. The vertical gravitational acceleration (drop) of water within the column is caused by vertical attraction on that column only. The vertical component of static pressure within the vortex is not lessened by all that much, as can be seen from the depth and size of the depression of the vortex at the surface.

As the column progresses in its vertical motion down, the energy of vortex circular speed is also progressively translated into the energy of vertical speed of the column. If the circular component of the vortex speed at the bottom of a discharge were used for energy production along with the falling column kinetic energy, these two components combined would supply greater total energy output than needed for lifting of the same liquid volume (per unit of time) to the original height.

In other words, we would be milking total static pressure exerted by gravitation on liquid volume from a much greater area than discharge hole area without having to pay the cost of returning that volume back to the height across that same area. It seems obvious from the above that static pressure, or tension of a field, can be translated into circular motion of a medium.

Vortex phenomenon is the proof that field "static potential" can be utilized for energy extraction. Vortex phenomenon also proves that the so-called "static potential" energy of fields is caused by dynamic energy flows. This does not violate any laws of physics, it is a law of physics.

The discharge and the surrounding containment have to be regular in shape, otherwise more and chaotic turbulences within the fluid accelerating through the discharge break the vortex symmetry and hinder its progress. Regular does not mean a perfect cone, but a shape mimicking the structure of natural turbulence. This shape is somewhat ropy walled parabolic cone.

VORTICES

The circumferential speed of liquid molecules within a vortex increases as the molecules approach the central axis of the vortex. Therefore, it is clear that the farther a molecule is from this axis, the lesser is its orbital speed.

Any object within such vortex, including the liquid molecules, spin themselves counter to the spin of the vortex, as their outer orbital speed is slower than their inner speed relative to the axis of the vortex. (Planetary gear or a bearing ball in a bearing represents such a counter spin)

Unless other forces are present, any small vortice within a major vortex counter spins.

Some claim that such a phenomenon has never been observed in nature. Crap. It is readily observable phenomenon on rivers. Any larger vortex in a cove of a river bend has these counter spinning satellite vortices present. They are usually transient, but are readily observable in nature.

This principle has a severe impact on the coalescing theory of planetary systems as well as galactic systems. It is obvious that planets should spin counter to planetary system. Since not all of them do, actually the majority does not, it is obvious that the spin of planets and stars has its casualty in the behavior of magnetic and electric fields, rather than being a remainder of gas cloud vortice motion within the solar system general vortex.

Any and every energy flow through a restriction under an orthogonal pressure of a field tends to develop a vortex structure. It does not matter whether that flow is liquid, gaseous or what we consider to be a field. The acceleration gain in a vortex is a utilizable phenomenon. It is one of the phenomena, which counteracts thermal

entropy in the universe. It concentrates the rate of flow through a restriction utilizing a dispersed energy of a general field.

Any and every so-called massive particle contains a few geometries of vortexes (Nucleon). The main, dense flows can be considered to be magnetic field compounds of the dispersed electric field components. Electric field components qualify for a sort of aether, but not a chaotic aether of the past and not exactly liquid like in a sense of water in the sea. It's liquid is comparable to water flow in rivers.

S.D.K. November 18, 2000

INDEXFIELD FORCES

We have a few principles of the induction of attractive and repulsive force.

The primary (snake propagation) has been described in my original Tour the Force

The secondary attractive force acts between two reciprocating counter flows of positive and negative components of primary as well as secondary gravitational field. The two flows, passing each other, vortex on their common side. Their mutual propagation along the long axis is caused by the primary principle, but the friction between these two flows creates vortexes between them slowing their common side fringe down as opposed to their far sides fringe.

If you care for a graphic description, look up some photos of Jupiter atmosphere. Its atmosphere moves in strips of counter flowing gas streams and these photos will do better than anything I can draw.

It is this slowing down of the near side fringe, which attracts parallel paths together. Once we have fringes on two or more sides of a single thread of a path, created by the proximity of other paths, we get a general field strength gradient toward the mother body wherever a mother body is present in space, a star, a planet, a wire.

Why wire? Look through a fly screen at some really colorful background. Autumn leaves on maple trees will do rather well. You will find out what I am talking about when you realize that the blurry effect you can see is caused by the “curvature of space” around the wires. That curvature is discriminate and it may resonate, although you would not see it. Such a resonance is behind the effect of Young double slit experiment. Yes, light is a sort of wave, but the explanation of Young double slit experiment is not a proof of it. It was a partly lucky and partly unlucky mistake.

Why the strings rubbing against each other by their fringes do not stop like any other frictional system? The energy of the path has nowhere to dissipate, so it does not dissipate anywhere. That energy can and is used once a gravitational field accelerates a solid body relative to the wavy pattern of the universe. It is used, or better said converted, while accelerating a fluid vortex spin and free fall. It gets transformed into higher orders of energy, be it thermal or kinetic, of what we call particulate, but other than that, it has nowhere to go. Its soliton turbulences are stable in that sense, that they pass energy one to another. The universal gravitational field is the ultimate storehouse of energy, from which all higher forms of energy arise and to which all higher forms of energy return.

We have learned how to convert thermal energy to mechanical energy and to electric dipole energy and back to some degree. Now we should learn how to convert gravitational energy to thermal, mechanical or electric dipole energy.

S.D.K. 14. April 2001

FIELDS 6

MAGNETIC LINES OF FORCE

Spacing of magnetic lines of force depends on at least two criteria.

The first one is the size of the iron shaving particulate. The finer is the size of the particulate, the finer is the line of force structure.

The second one is the intensity of the magnetic field. As pointed out in TTF, when we steadily increase the amp value in a DC conductor, the lined of force around the conductor contract and new lines are being added from the iron dust at the margin around the conductor. On the other hand, when we steadily decrease the Amp value in a DC conductor, the lines of force spread and the margin around the conductor collects the iron dust.

When are in the process of placing a steel object between two magnets, which are in attractive orientation and lets say 3” apart, the original lines of force between the two magnets distort so that they concentrate on the steel object. When we line up magnets in attractive orientation with spaces in between or steel objects between two magnets in attractive orientation, the lines of force join all the poles of the magnets or all the steel pieces between the magnets.

When we curve a set of magnets in attractive orientation with some spacing in between them so that the magnets create a circle, all lines of force join into the circle of the poles and the external lines of force (the donut) disappears.

The above (and much more) points out that iron, as well as magnets are able to attract and concentrate and lead magnetic field along any steel or iron or any ferromagnetic structure or permanent magnet structure. The lines of force are created by iron particulate of any size, but the size of the particulate decides how far apart the lines can be before the space between the lines begins to fill with magnetic field again.

When we stick two parallel rows of steel posts into the ground in even an approximate NS orientation, we create at least a partial gap in the magnetic field of earth within the isle between the rows of steel posts. The post distance in the row should be less than the distance of posts across the isle.

The same working arrangement can be created with help of electromagnets, again arranged into a double row, with all their poles oriented in one general geographic orientation and complying with geomagnetic field polarity orientation, because the

electromagnets will again tie geomagnetic lines of force (actually create them) and concentrate the geomagnetic field into lines of force.

RELEVANCY

The relevancy of this comes out when we dig into the stone levitation story from Middle East which states:

“First, a 'magic papyrus' (paper) was placed under the stone to be moved. Then the stone was struck with a metal rod that caused the stone to levitate and move along a path paved with stones and fenced on either side by metal poles. The stone would travel along the path, wrote Al-Masudi, for a distance of about 50 meters and then settle to the ground. The process would then be repeated until the builders had the stone where they wanted it.”

The same relevancy comes up when we dig into stories about Edward Leedskalnin and the artifacts left by him on his death at Coral Castle. Ed was the only man in the West who had been able to handle monoliths without the use of heavy machinery in modern times.

Leedskalnin had no outside source of hydropower, yet he had electrical installations on his property. He was able to handle blocks of coral stone up to 29 tons in weight as evidenced by his work for anyone to see. He seems to have used grids of copper wires and other electrical devices to help him with his work. He has also been reported to “sing” to his stones while working with them. When we read through Leedskalnin’s articles on magnetism, we can get the hang of what his idea behind his stone levitation was, especially when we learn that his work gloves and boots had sheet metal pieces attached to them. Unfortunately, he has not left an instruction manual and what he never revealed has to be found out.

It appears that steel or magnet or electromagnet induced geomagnetic field gap is not exactly necessary in order to achieve stone levitation, because other modern time report from Tibet does not include any steel or electric apparatus, never the less, there are

possibly other ways in which magnetic field gaps can be created. Sound, on the other hand, is always reported as a factor.

Note, just about all the references needed can be found on KeelyNet. (See Links)

SDK 7 August 2001

FIELDS 7

INDEX THE PRIMARY FIELD NETWORK

The “free” space of the universe is interwoven with uncountable paths of electric communication among the celestial bodies of the primary field. Polarity of each path of the primary field is steady and looped on the quark, nucleon, atom, molecule, planetary, galactic and eventually universal scale. Each quark and antiquark along a single path is strung on this path like a bead on a string. The permanent induction of such a path may join countless quarks of alternate electric polarity in countless bodies and the path is an integral part of those quarks. This two-way communication of flows with the quark knots on them can be compared to beads strung on a double thread string. I will assign red color to the positive “charge” quark and blue color to the negative “charge” quark. Figure one shows only one quark of a pair for simplicity.

Fig 1

The paths polarity directions between more than two bodies are not unidirectional even for a single circle path. The curvature of the path is not caused by inertia. It is caused by the directionality of the quark orientation at the point of exit and entry. See TTF2/FIELDS 5 for the cause of mutual adherence of the two directions of a single path of electric force exchange. The whole loop can be perceived as separate strings as well as a single string.

I have to create a term for the intersection related to the wave

function of a path. The term is null axis point.

Fig 2

The paths of electric communication intersect in free space either actively at null axis points or passively at any other points on the paths. Figure three shows idealized planar arrangement. The sinusoids themselves will be distorted as paths standing waves compound at some places to some degree.

Fig 3

Once we understand that the path is a flow of something and that the wave of this flow is static or standing, like the riverbed of Mississippi river, we do not have to count in any frequencies of the paths when crossing each other as yet. The important condition is that any orthogonal paths intersect at their null axis points tying orthogonal paths together into network. Every two-path null point intersection generates turbulence between their four flows, somewhat similar to the cloverleaf intersection on a freeway. Stability of this turbulence is conditioned by the spatial frequency of the wave components of the paths. If the intersecting paths have harmonic relationship, which fits into the curved length of the turbulence (cloverleaf loop), the turbulence will be stable. If the two intersecting paths have disharmonic spatial frequencies, the turbulence will oscillate at best, and alternately fall apart and reestablish at the worst.

There are stable and unstable turbulences around the null axis point intersections of the field network holding the network together, some in a transient manner and some in a stable manner. The same is valid for the structure of nucleon, but it is not valid for the structure of emitted electron thermal phase.

When the primary gravitational field network gets disturbed at any point, it behaves as a three dimensional net. It does not mean that its

structure follows three axes in Euclidian cubic axis arrangement. It only means that the space is filled through out with this network. The geometry of the network structure itself is multidirectional and constantly shifting. The directions of the paths within the network are just about as numerous as the paths themselves.

When we consider the field of a single charged spherical body, its geometry seems purely radial, i.e. scalar. When we consider geometry of the field of two reciprocating (opposite polarity) bodies, it changes quite drastically. The cause of the scalar field of a single charged body lies in the induction taking place between the body and air molecules and water vapor molecules and earth molecules and whatever molecules, or better said their component quarks all around the so called charged body. In practice, there is no scalar field. Scalar field is a theoretical idealization of crooked natural geometry. Perfect scalar field would require a perfect charged sphere within another perfect sphere (including perfect material), within which the charged sphere would be placed in dead center. The outer sphere would have to be perfectly isolated from the rest of the universe, otherwise it would induce its induced polarity toward the outside becoming a charged body to the outside and the ideal theoretical scalar field would become the practical crooked field. In reality, the inner charged body actually becomes electrically neutral. (Courtesy Joe Hiding)

Anyway, the network can be obviously shaped and disturbed and induced and manipulated as long as we know what we are dealing with and what we are doing with it. The notion that light is an electromagnetic phenomenon equivalent to radio waves and microwaves is incorrect. The experimentation of Nicola Tesla in Colorado has clearly shown that repeated manipulation of the geometry of the general field causes a general wave disturbance through out the network of gravitational field. This disturbance is a real longitudinal wave generated within the gravitational network. On the other hand, light is progressive unification of electric paths flows into a local magnetic flow.

The speed of light and the speed of gravitation and the speed of radio wave are interdependent because the wavelengths are

interdependent. When you look back to the volleyball net analogy, you can realize that the transverse wave of single net string and the longitudinal wave of the whole net depend on each other in some ratio, whatever that ratio may be. It is a bit confusing to recognize what is a longitudinal wave within the whole network and what is a transverse wave in it. A disturbance, which propagates in one direction as a longitudinal wave, causes transverse wave in orthogonal directions and vice versa. Our concept of the transverse and longitudinal is derived from our string and spring experimenting, which limits our perception to the behavior of the string or the spring. We tear phenomena out of their context and study them out of their context. Then we grossly err applying the newly derived (experimentally as well as mentally confirmed within artificially imposed limits) concepts to the general behavior of the limitless universe.

S.D.K. 14. April 2001

FIELDS 5

INDEX

FORCES This site is dedicated to ideas. Some are mine, some belong to others.

Any and all of the information on this site is as is. If you disagree with anything here, be aware that I also disagree with a lot of things.

BY S.D.K.

TOUR THE FORCE

Is a series of closely interrelated documents outlining the problems with the currently established interpretations of behavior of the most fundamental physical phenomena like heat, light, el. current etc. It does not argue with the established mathematical processes (so called mathematical theories), as most are reasonably valid generalizations of functions of particular natural forces. It argues with the concepts of why things behave the way they do and with their causality and geometrical as well as functional relationships, not with how much they behave.

Tour the Force contains a somewhat outdated line of deduction of what force phenomena really are all about and what are their mutual relations. The particulate causality of gravitational force and other force fields as such had to give way to simpler concept of wave relationship of energy flows along waves. Yet, this original Tour the Force has its relevancy in paving the road to understanding of Tour the Force 2

GISMOS

Contains assortment of descriptions and comments on a few man made contraptions, which were or are claimed to work as intended, as undependable as some may be.

TOUR THE FORCE 2

Contains updates to the original Tour the Force. This part is in development and I am uploading new documents as I manage to solve the different parts of the over all puzzle and put its documents into a reasonable form. My original Tour the Force is a prerequisite to understanding of Tour the Force 2.

EXPERIMENTS

Contains assorted bits and pieces of little known knowledge about anomalous experiments done by "less" learned folks. Some may

have my explanations and all of them stress the need of humanity as such to resist the dogma of the established authority on truth.

IDEAS

Contains assorted ideas and experiences. Some of the ideas have the potential to eventually move to experiments once conclusively performed.

LINKS

Scientific as well as not so scientific references. They should be understood as pointers in directions of possible research, not as exhaustive sources of information. Lots of interesting stuff, lots of garbage. You have to do your own research and sorting out. Good luck.

VICTOR S. GREBENNIKOV

English translation of the original Russian text.

PATENTS

First of my patenting experiences concerns a simple brushless alternator. This attempt had gone to hell due to bottomless pockets of my former patent lawyers (for a translation of the English description into legalese worth close to C\$ 5 500, submission fees extra). You can view the patent application here, as it was submitted to US patent office by my ex-patent agents. The patent has fallen into public domain due to insufficient funds.

My second patent experience concerns a very simple and very effective air (gas) dryer so far applied only on compressed air systems. I have applied for a patent registration and filed an application (Canadian) according to Canada Patent Office instructions myself. The application has been accepted and had cost C\$150.00 plus registered mail. I have not quite revealed the whole patent here, but you can find its general description and experience with its performance here.

INDEX

The Decay of the False Vacuum
Written by Sten Odenwald

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In the recently developed theory by Steven Weinberg and Abdus Salam, that unifies the electromagnetic and weak forces, the vacuum is not empty. This peculiar situation comes about because of the existence of a new type of field, called the Higgs field. The Higgs field has an important physical consequence since its interaction with the W, W and Z particles (the carriers of the weak force) causes them to gain mass at energies below 100 billion electron volts (100 Gev). Above this energy they are quite massless just like the photon and it is this characteristic that makes the weak and electromagnetic forces so similar at high energy.

On a somewhat more abstract level, consider Figures 1 and 2 representing the average energy of the vacuum state. If the universe were based on the vacuum state in Figure 1, it is predicted that the symmetry between the electromagnetic and weak interactions would be quite obvious. The particles mediating the forces would all be massless and behave in the same way. The corresponding forces would be indistinguishable. This would be the situation if the universe had an average temperature of 1 trillion degrees so that the existing particles collided at energies of 100 Gev. In Figure 2, representing the vacuum state energy for collision energies below 100 Gev, the vacuum state now contains the Higgs field and the symmetry between the forces is suddenly lost or 'broken'. Although at low energy the way in which the forces behave is asymmetric, the fundamental laws governing the electromagnetic and weak interactions remain inherently symmetric. This is a very remarkable and profound prediction since it implies that certain symmetries in Nature can be hidden from us but are there nonetheless.

During the last 10 years physicists have developed even more powerful theories that attempt to unify not only the electromagnetic and weak forces but the strong nuclear force as well. These are called the Grand Unification Theories (GUTs) and the simplest one known was developed by Howard Georgi, Helen Quinn, and Steven Weinberg and is called SU(5), (pronounced 'ess you five'). This theory predicts that the nuclear and 'electroweak' forces will eventually have the same strength but only when particles collide at energies above 1 thousand trillion GeV corresponding to the unimaginable temperature of 10 thousand trillion trillion degrees! SU(5) requires exactly 24 particles to mediate forces of which the 8 massless gluons of the nuclear force, the 3 massless intermediate vector bosons of the weak force and the single massless photon of the electromagnetic force are 12. The remaining 12 represent a totally new class of particles called Leptoquark bosons that have the remarkable property that they can transform quarks into electrons. SU(5) therefore predicts the existence of a 'hyperweak' interaction; a new fifth force in the universe! Currently, this force is 10 thousand trillion trillion times weaker than the weak force but is nevertheless 100 million times stronger than gravity. What would this new force do? Since protons are constructed from 3 quarks and since quarks can now decay into electrons, through the Hyperweak interaction, SU(5) predicts that protons are no longer the stable particles we have always imagined them to be. Crude calculations suggest that they may have half-lives between 10^{29} to 10^{33} years. An immediate consequence of this is that even if the universe were destined to expand for all eternity, after 'only' 10^{32} years or so, all of the matter present would catastrophically decay into electrons, neutrinos and photons. The Era of Matter, with its living organisms, stars and galaxies, would be swept away forever, having represented but a fleeting episode in the history of the universe. In addition to proton decay, SU(5) predicts that at the energy characteristic of the GUT transition, we will see the effects of a new family of particles called supermassive Higgs bosons whose masses are expected to be approximately 1 thousand trillion GeV! These particles interact with the 12 Leptoquarks and make them massive just as the Higgs bosons at 100 GeV made the W, W and Z particles heavy. Armed with this knowledge, let's explore some of the remarkable cosmological

consequences of these exciting theories.

The GUT Era

To see how these theories relate to the history of the universe, imagine if you can a time when the average temperature of the universe was not the frigid 3 K that it is today but an incredible 10 thousand trillion trillion degrees (10(15) GeV). The 'Standard Model' of the Big Bang, tells us this happened about 10(-37) seconds after Creation. The protons and neutrons that we are familiar with today hadn't yet formed since their constituent quarks interacted much too weakly to permit them to bind together into 'packages' like neutrons and protons. The remaining constituents of matter, electrons, muons and tau leptons, were also massless and traveled about at essentially light-speed; They were literally a new form of radiation, much like light is today! The 12 supermassive Leptoquarks as well as the supermassive Higgs bosons existed side-by-side with their anti-particles. Every particle-anti particle pair that was annihilated was balanced by the resurrection of a new pair somewhere else in the universe. During this period, the particles that mediated the strong, weak and electromagnetic forces were completely massless so that these forces were no longer distinguishable. An inhabitant of that age would not have had to theorize about the existence of a symmetry between the strong, weak and electromagnetic interactions, this symmetry would have been directly observable and furthermore, fewer types of particles would exist for the inhabitants to keep track of. The universe would actually have been much simpler then!

As the universe continued to expand, the temperature continued to plummet. It has been suggested by Demetres Nanopoulos and Steven Weinberg in 1979 that one of the supermassive Higgs particles may have decayed in such a way that slightly more matter was produced than anti-matter. The remaining evenly matched pairs of particles and anti-particles then annihilated to produce the radiation that we now see as the 'cosmic fireball'.

Exactly what happened to the universe as it underwent the transitions at 10(15) and 100 GeV when the forces of Nature

suddenly became distinguishable is still under investigation, but certain tantalizing descriptions have recently been offered by various groups of theoreticians working on this problem. According to studies by Alan Guth, Steven Weinberg and Frank Wilczek between 1979 and 1981, when the GUT transition occurred, it occurred in a way not unlike the formation of vapor bubbles in a pot of boiling water. In this analogy, the interior of the bubbles represent the vacuum state in the new phase, where the forces are distinguishable, embedded in the old symmetric phase where the nuclear, weak and electromagnetic forces are indistinguishable. Inside these bubbles, the vacuum energy is of the type illustrated by Figure 2 while outside it is represented by Figure 1. Since we are living within the new phase with its four distinguishable forces, this has been called the 'true' vacuum state. In the false vacuum state, the forces remain indistinguishable which is certainly not the situation that we find ourselves in today!

Cosmic Inflation

An exciting prediction of Guth's model is that the universe may have gone through at least one period in its history when the expansion was far more rapid than predicted by the 'standard' Big Bang model. The reason for this is that the vacuum itself also contributes to the energy content of the universe just as matter and radiation do however, the contribution is in the opposite sense. Although gravity is an attractive force, the vacuum of space produces a force that is repulsive. As Figures 1 and 2 show, the minimum energy state of the false vacuum at 'A' before the GUT transition is at a higher energy than in the true vacuum state in 'B' after the transition. This energy difference is what contributes to the vacuum energy. During the GUT transition period, the positive pressure due to the vacuum energy would have been enormously greater than the restraining pressure produced by the gravitational influence of matter and radiation. The universe would have inflated at a tremendous rate, the inflation driven by the pressure of the vacuum! In this picture of the universe, Einstein's cosmological constant takes on a whole new meaning since it now represents a definite physical concept ; It is simply a measure of the energy difference between the true and false vacuum states ('B' and 'A' in Figures 1 and 2.) at a particular time in

the history of the universe. It also tells us that, just as in de Sitter's model, a universe where the vacuum contributes in this way must expand exponentially in time and not linearly as predicted by the Big Bang model. Guth's scenario for the expansion of the universe is generally called the 'inflationary universe' due to the rapidity of the expansion and represents a phase that will end only after the true vacuum has supplanted the false vacuum of the old, symmetric phase.

A major problem with Guth's original model was that the inflationary phase would have lasted for a very long time because the false vacuum state is such a stable one. The universe becomes trapped in the cul-de-sac of the false vacuum state and the exponential expansion never ceases. This would be somewhat analogous to water refusing to freeze even though its temperature has dropped well below 0 Centigrade. Recent modifications to the original 'inflationary universe' model have resulted in what is now called the 'new' inflationary universe model. In this model, the universe does manage to escape from the false vacuum state and evolves in a short time to the familiar true vacuum state.

We don't really know how exactly long the inflationary phase may have lasted but the time required for the universe to double its size may have been only 10^{-34} seconds. Conceivably, this inflationary period could have continued for as 'long' as 10^{-24} seconds during which time the universe would have undergone 10 billion doublings of its size! This is a number that is truly beyond comprehension. As a comparison, only 120 doublings are required to inflate a hydrogen atom to the size of the entire visible universe! According to the inflationary model, the bubbles of the true vacuum phase expanded at the speed of light. Many of these had to collide when the universe was very young in order that the visible universe appear so uniform today. A single bubble would not have grown large enough to encompass our entire visible universe at this time; A radius of some 15-20 billion light years. On the other hand, the new inflationary model states that even the bubbles expanded in size exponentially just as their separations did. The bubbles themselves grew to enormous sizes much greater than the size of our observable universe. According to Albrecht and Steinhardt of the University of

Pennsylvania, each bubble may now be 10(3000) cm in size. We should not be too concerned about these bubbles expanding at many times the speed of light since their boundaries do not represent a physical entity. There are no electrons or quarks riding some expanding shock wave. Instead, it is the non-material vacuum of space that is expanding. The expansion velocity of the bubbles is not limited by any physical speed limit like the velocity of light.

GUMs in GUTs

A potential problem for cosmologies that have phase transitions during the GUT Era is that a curious zoo of objects could be spawned if frequent bubble mergers occurred as required by Guth's inflationary model. First of all, each bubble of the true vacuum phase contains its own Higgs field having a unique orientation in space. It seems likely that no two bubbles will have their Higgs fields oriented in quite the same way so that when bubbles merge, knots will form. According to Gerhard t'Hooft and Alexander Polyakov, these knots in the Higgs field are the magnetic monopoles originally proposed 40 years ago by Paul Dirac and there ought to be about as many of these as there were bubble mergers during the transition period. Upper limits to their abundance can be set by requiring that they do not contribute to 'closing' the universe which means that for particles of their predicted mass (about 10(16) GeV), they must be 1 trillion trillion times less abundant than the photons in the 3 K cosmic background. Calculations based on the old inflationary model suggest that these GUMs (Grand Unification Monopoles) may easily have been as much as 100 trillion times more abundant than the upper limit! Such a universe would definitely be 'closed' and moreover would have run through its entire history between expansion and recollapse within a few thousand years. The new inflationary universe model solves this 'GUM' overproduction problem since we are living within only one of these bubbles, now almost infinitely larger than our visible universe. Since bubble collisions are no longer required to homogenize the matter and radiation in the universe, very few, if any, monopoles would exist within our visible universe.

Horizons

A prolonged period of inflation would have had an important influence on the cosmic fireball radiation. One long-standing problem in modern cosmology has been that all directions in the sky have the same temperature to an astonishing 1 part in 10,000. When we consider that regions separated by only a few degrees in the sky have only recently been in communication with one another, it is hard to understand how regions farther apart than this could be so similar in temperature. The radiation from one of these regions, traveling at the velocity of light, has not yet made it across the intervening distance to the other, even though the radiation may have started on its way since the universe first came into existence. This 'communication gap' would prevent these regions from ironing-out their temperature differences.

With the standard, Big Bang model, as we look back to earlier epochs from the present time, the separations between particles decrease more slowly than their horizons are shrinking. Neighboring regions of space at the present time, become disconnected so temperature differences are free to develop. Eventually, as we look back to very ancient times, the horizons are so small that every particle existing then literally fills the entire volume of its own, observable universe. Imagine a universe where you occupy all of the available space! Prior to the development of the inflationary models, cosmologists were forced to imagine an incredibly well-ordered initial state where each of these disconnected domains (some 10^{86} in number) had nearly identical properties such as temperature. Any departure from this situation at that time would have grown to sizable temperature differences in widely separated parts of the sky at the present time. Unfortunately, some agency would have to set-up these finely-tuned initial conditions by violating causality. The contradiction is that no force may operate by transmitting its influence faster than the speed of light. In the inflationary models, this contradiction is eliminated because the separation between widely scattered points in space becomes almost infinitely small compared to the size of the horizons as we look back to the epoch of inflation. Since these points are now within each others light horizons, any temperature difference would have been eliminated immediately since hotter regions would now be in radiative contact

with colder ones. With this exponentially-growing, de Sitter phase in the universe's early history we now have a means for resolving the horizon problem.

Instant Flat Space

Because of the exponential growth of the universe during the GUT Era, its size may well be essentially infinite for all 'practical' purposes. Estimates by Albrecht and Steinhardt suggest that each bubble region may have grown to a size of 10^{3000} cm by the end of the inflationary period. Consequently, the new inflationary model predicts that the content of the universe must be almost exactly the 'critical mass' since the sizes of each of these bubble regions are almost infinite in extent. The universe is, for all conceivable observations, exactly Euclidean (infinite and flat in geometry) and destined to expand for all eternity to come. Since we have only detected at most 10 percent of the critical mass in the form of luminous matter, this suggests that 10 times as much matter exists in our universe than is currently detectable. Of course, if the universe is essentially infinite this raises the ghastly spectre of the eventual annihilation of all organic and inorganic matter some 10^{32} years from now because of proton decay.

In spite of its many apparent successes, even the new inflationary universe model is not without its problems. Although it does seem to provide explanations for several cosmological enigmas, it does not provide a convincing way to create galaxies. Those fluctuations in the density of matter that do survive the inflationary period are so dense that they eventually collapse into galaxy-sized blackholes! Neither the precise way in which the transition to ordinary Hubble expansion occurs nor the duration of the inflationary period are well determined.

If the inflationary cosmologies can be made to answer each of these issues satisfactorily we may have, as J. Richard Gott III has suggested, a most remarkable model of the universe where an almost infinite number of 'bubble universes' each having nearly infinite size, coexist in the same 4-dimensional spacetime; all of these bubble universes having been brought into existence at the same instant of

creation. This is less troublesome than one might suspect since, if our universe is actually infinite as the available data suggests, so too was it infinite even at its moment of birth! It is even conceivable that the universe is 'percolating' with new bubble universes continually coming into existence. Our entire visible universe, out to the most distant quasar, would be but one infinitesimal patch within one of these bubble regions. Do these other universes have galaxies, stars, planets and living creatures statistically similar to those in our universe? We may never know. These other universes, born of the same paroxysm of Creation as our own, are forever beyond our scrutiny but obviously not our imaginations!

Beyond The Beginning...

Finally, what of the period before Grand Unification? We may surmise that at higher temperatures than the GUT Era, even the supermassive Higgs and Leptoquark bosons become massless and at long last we arrive at a time when the gravitational interaction is united with the weak, electromagnetic and strong forces. Yet, our quest for an understanding of the origins of the universe remains incomplete since gravity has yet to be brought into unity with the remaining forces on a theoretical basis. This last step promises to be not only the most difficult one to take on the long road to unification but also appears to hold the greatest promise for shedding light on some of the most profound mysteries of the physical world. Even now, a handful of theorists around the world are hard at work on a theory called Supergravity which unites the force carriers (photons, gluons, gravitons and the weak interaction bosons) with the particles that they act on (quarks, electrons etc). Supergravity theory also predicts the existence of new particles called photinos and gravitinos. There is even some speculation that the photinos may fill the entire universe and account for the unseen 'missing' matter that is necessary to give the universe the critical mass required to make it exactly Euclidean. The gravitinos, on the other hand, prevent calculations involving the exchange of gravitons from giving infinite answers for problems where the answers are known to be perfectly finite. Hitherto, these calculations did not include the affects of the gravitinos.

Perhaps during the next decade, more of the details of the last stage of Unification will be hammered out at which time the entire story of the birth of our universe can be told. This is, indeed, an exciting time to be living through in human history. Will future generations forever envy us our good fortune, to have witnessed in our lifetimes the unfolding of the first comprehensive theory of Existence?

In the Mandelbrot set, nature (or is it mathematics) provides us with a powerful visual counterpart of the musical idea of 'theme and variation': the shapes are repeated everywhere, yet each repetition is somewhat different. It would have been impossible to discover this property of iteration if we had been reduced to hand calculation, and I think that no one would have been sufficiently bright or ingenious to 'invent' this rich and complicated theme and variations. It leaves us no way to become bored, because new things appear all the time, and no way to become lost, because familiar things come back time and time again. Because this constant novelty, this set is not truly fractal by most definitions; we may call it a borderline fractal, a limit fractal that contains many fractals. Compared to actual fractals, its structures are more numerous, its harmonies are richer, and its unexpectedness is more unexpected

Benoit Mandelbrot

MANDELBROT SET

As mentioned earlier, no matter what the value of the complex parameter c is, in the iteration of the complex quadratic map there is a unique trapping set T_c and a corresponding escape set E_c . The Julia set (J_c) is the boundary between the set T_c and the set E_c . The Mandelbrot set is an answer to the following kind of enquiry. Of the infinite number of possible Julia sets that exists, is there any organizing principle that classifies these Julia sets.

The key results for this classification of Julia sets were already there in the works of Julia and Fatou who knew about the topological dichotomy in the Julia set. The result states that for any choice of the complex parameter c the associated Julia set J_c and the trapping set T_c are either topologically connected (severely deformed circles) or totally disconnected (generalized Cantor dust like).

This was indeed the key result that clued Mandelbrot, in 1979, to visualize a set in the complex parameter space c which is called the Mandelbrot set. The Mandelbrot set consists of all values of c that have connected Julia sets. Picking value of c that is outside the Mandelbrot set, and iterating the equation to obtain the J_c for this particular choice of c gives a disconnected Julia set.

Note important, as it is, the classification of Julia set in terms of disconnected sets, this still doesn't allow one to visualize the shape of the set of points, in the parameter space, for which the Julia set is connected. The genius is in the realization of the interrelation between the above mentioned dichotomy and in the long term behavior of the critical point.

The computer graphical renderings of Mandelbrot set is made possible by this important fact which states -- The trapping set T_c is connected if and only if the critical orbit is bounded. This definition makes it possible to draw a portrait of the Mandelbrot set.

For each complex number c , a sequence of iterates Z_n is defined by
3. The complex number c is a member of the Mandelbrot set if and only if $|Z_n|$ is finite for all values of n . The bars indicate the magnitude of Z_n given by $Z_n = \ddot{O}(X_n^2 + Y_n^2)$ where X_n is the real component and Y_n the imaginary component of Z_n . The point, in the complex parameter space, is colored white if the orbit is unbounded for that particular value of c and is colored black if the orbits are bounded.

The figure shown below is the Mandelbrot set (in black). It extends from the cusp of the cardioid at $\text{Re } c = 0.25$ to the tip of the tail at $\text{Re } c = -2$ along the real axis and from $\text{Im } c = -1.25$ to $\text{Im } c = 1.25$ along

the imaginary axis.

Monochrome Mandelbrot Set Portrait

The basic algorithm to generate the Mandelbrot set is as follows. For each pixel c , start with $Z = 0$. Iterate the above equation up to N times, exiting if $|Z|$ gets large. If you finish the loop, the point is probably inside the Mandelbrot set. If you exit, the point is outside and can be colored according to how many iterations were completed. You can exit if $|Z| > 2$, since if Z gets this big it will go to infinity. The maximum number of iterations, N , can be selected as desired, for instance 200. Larger values of N will give sharper detail but take longer.

A note about why we start from $Z_0 = 0$. Zero is the critical point of Mandelbrot equation given by $Z^2 + c$. That is, a point where $d/dz (Z^2 + c) = 0$. Critical points are important because by a result of Fatou: every attracting cycle (T_c) for a polynomial or rational function attracts at least one critical point. Thus, testing the critical point shows if there is any stable attractive cycle. For the case of equation with multiple critical points, all the critical points must be tested.

DETAILS

For the sake of clarity the largest cardioid (heart) shaped central region of the Mandelbrot set will be referred to as the main body of the Mandelbrot set (M1 -- the region labeled 1 in the figure(3) below). All other pieces that are attached to the main body will be referred to as the buds. The largest bud that is attached to the main body (along the real axis) will be called the M2 bud (bud labeled 2 in figure(3) below). The main body of the Mandelbrot set intersects the real axis at $\hat{A}c = 0.25$ and $\hat{A}c = -0.75$. Extending the stability analysis

criteria discussed for the case logistic equation, it is easy to see that the fixed point of the complex quadratic iterator is stable along the real axis for precisely the interval mentioned above.

The determination of the boundary of the main body of the Mandelbrot set relies on the realization that any value of the complex parameter picked from within the main body of the Mandelbrot set the corresponding Julia set is a boundary between the Escape set and the trapping set of the stable fixed point of the quadratic map. The boundary of the main body defines the locus of points (in the parameter space) for which the fixed point is indifferent, that is, the modulus of the derivative of the map about the fixed point is exactly equal to 1. Using this fact one can determine the explicit expression for the outline of the M-set's main body.

If z is the fixed point of complex quadratic map, it follows that z satisfies the equation $z^2 - z + c = 0$. The derivative of the map about the fixed point z is given by $2z$ which in polar coordinates can be expressed as $2z = re^{if}$. Combining these two equations, and solving for c , we obtain

$$c = 1$$

$$2$$

$$r e^{if} - 1$$

$$4$$

$$r^2 e^{2if}$$

$$(1)$$

Note, for the value of $r < 1$ the above equation determines the points inside the main body of the Mandelbrot set and $r = 1$ gives the boundary of M1. The above equation is the parametrization of the curve in the complex plane for $0 \leq f < 2\pi$. Thus, is explicitly seen as an equation of cardioid when expressed as

$$\hat{A}c = \cos(f)/2 - \cos(2f)/4$$

$$\hat{A}c = \sin(f)/2 - \sin(2f)/4$$

$$(2)$$

by equating the real and imaginary parts of the equation.

It turns out, that at the parameter values, $f = 2p/k$, where $k = 2, 3, 4, 5 \frac{1}{4}$, one of the main buds of the Mandelbrot set is attached to M1 set. Moreover, the period of the attractive cycles that belong to these buds is given by the number k in $2p/k$. Also, there is another amazing fact about the arrangement of the buds. Two given buds of periods p and q at the cardioid determine the period of the largest bud in between them as $p+q$. (This is illustrated for the case of $p = 2$ and $q = 3$ in figure(3) below). Similar rules are true for buds on buds.

Figure 3: The buds of the Mandelbrot set corresponding to Julia sets that bound the basins of attraction (trapping sets) of periodic orbits. The numbers in the figure indicate the periods of these orbits.

Figure 4: The plot of equation (2) which defines the boundary of the main body (M1) of the Mandelbrot set and the numbers indicate the periodicity of the buds that attach to the main body of the Mandelbrot set and the point where they attach to the main body of the Mandelbrot set.

The above two remarkable property corresponding to the periodicity of the bud was the reason for indexing the buds attached to the main body of the M-set as M_n . Thus, from the above argument the period 2 bud is attached at an angle p (setting $k = 2$ in $f = 2p/k$), similarly period 3 is the attached at $f = 120$ and so on. Figure(4) above shows the buds of the Mandelbrot set corresponding to Julia sets that bound basins of attraction of periodic orbits. The numbers in the figure indicate the periods of these orbits.

MATHEMATICAL MODEL OF CHOLESTEROL BIOSYNTHESIS REGULATION IN THE CELL

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Keywords: gene network, cholesterol, regulation, mathematical model, computer analysis

Resume

Motivation:

An adequate mathematical model of the complex nonlinear gene network regulating cholesterol synthesis in the cell is necessary for investigating its possible function modes and determining optimal strategies of its correction, therapeutic included.

Results:

Dynamic model of function of the gene network regulating cholesterol synthesis in the cell is constructed. The model is described in terms of elementary processes-biochemical reactions. The optimal set of parameters of the model is determined. Patterns of the system behavior under different conditions are simulated numerically.

Introduction

Cholesterol, an amphipathic lipid, is an essential structural component of cell membranes and outer lipoprotein layer of blood serum. In addition, cholesterol is a precursor of several other steroids, namely, corticosteroids, sex hormones, bile acids, and vitamin D. Cholesterol is synthesized in many tissues from acetyl-

CoA and its main fraction in blood serum resides with low-density lipoproteins (LDL). Free cholesterol is removed from the tissues with involvement of high-density lipoproteins (HDL) and transported to the liver to be transformed into bile acids. Its major pathological role is in serving as a factor causing atherosclerosis of vital cerebral arteries, heart muscle, and other organs. Typical of coronary atherosclerosis is a high ratio of LDL to HDL cholesterol [Marry R. et al., 1993]. Haploid and diploid versions of the dynamic model of function of the gene network regulating cholesterol synthesis in the cell are constructed in the work. The models are described in terms of elementary processes-biochemical reactions. The optimal set of parameters of the model allowing the calculations to comply with the published experimental data is determined through numerical experiments. Patterns of the system dynamic behavior under different conditions are simulated numerically. The results obtained are compared with the available experimental data.

Cholesterol biosynthesis and its regulation

Approximately half of the cholesterol amount present in the organism is formed through biosynthesis (about 500 mg/day) [Marry R. et al., 1993], while the other half is consumed with food. The main part of cholesterol is synthesized in the liver (~ 80% of the total cholesterol produced), intestines (~ 10%), and skin (~ 5%) [Klimov & Nikul'cheva, 1999].

Acetyl-CoA is the source of all the carbon atoms composing the cholesterol molecule. The main stages of cholesterol biosynthesis are described in the GeneNet database.

Cholesterol regulates its own synthesis and the synthesis of LDL receptors at the level of transcription through a negative feedback mechanism [Wang et al., 1994]. A decrease in the cell cholesterol content stimulates SRP (sterol regulated protease)- catalyzed proteolysis of the N-terminal fragment of SREBP (sterol regulatory element- binding protein), bound to the endoplasmic reticulum (ER) membrane. On leaving the ER membrane, SREBP migrates to the cell nucleus to bind the so-called sterol regulatory element (SRE), residing in the promoter of the receptor gene, thereby switching on

the receptor synthesis. In addition, SREBP activates the gene of synthase of hydroxymethyl glutaryl (HMG)-CoA reductase [Klimov & Nikul'cheva, 1999] as well as farnesyl diphosphate synthase and squalene synthase syntheses. Several studies have demonstrated rather fast effect of cholesterol on the reductase activity, unexplainable by the mere effect on the rate of enzyme synthesis. HMG-CoA reductase may be either active or inactive. Phosphorylation- dephosphorylation reactions provide for the transitions from one state into the other [Marry R. et al., 1993].

The main factors affecting the cholesterol balance at the cell level [Marry R. et al., 1993] are shown in Fig. 1.

Figure 1. Factors affecting the cholesterol balance at the cell level: C, cholesterol; CE, cholesterol esters; ACAT, acyl-CoA:cholesterol acyltransferase; LCAT, lecithin:cholesterol acyltransferase; A1, apoprotein A1; LDL, low density lipoproteins; VLDL, very low density lipoproteins, HDL, high density lipoproteins; (-), inhibition of cholesterol synthesis; and (+) ACAT activation [Marry R. et al., 1993].

Cell cholesterol content increases if (1) specific LDL receptors bind cholesterol-containing lipoproteins; (2) cholesterol-containing lipoproteins are bound without receptors; (3) free cholesterol, contained in cholesterol-rich lipoproteins is bound by cell membranes; (4) cholesterol is synthesized; and (5) cholesterol ester hydrolase- catalyzed hydrolysis of cholesterol esters takes place.

Cell cholesterol content decreases if (1) cholesterol passes from membranes into cholesterol-poor lipoproteins, in particular LDL3 or LDL synthesized de novo (lecithin:cholesterol acyltransferase promotes this transition); (2) ACAT-catalyzed cholesterol esterification takes place; and (3) cholesterol is used for synthesizing other steroids, in particular, hormones or bile acids in the liver [Marry R. et al., 1993].

Methods and algorithms

A generalized chemical kinetic approach [Bazhan et al., 1995] was used for the simulation. A blockwise formalization was used, that is, each process is separated in an individual block and described independently of the other processes. A block is a simulation quantum, and its formal structure is completely described with the following three vector components: (1) X, the list of dynamic variables; (2) P, the list of constants; and (3) F, type of the right part of the system $dX/dt = F(X, P)$ determining the rule these dynamic variables change with time. Four types of blocks are used to describe the processes in the model, namely:

Successive application of the blockwise approach to description of biological systems is based on the law of summation of the rates of elementary processes while uniting them in a general scheme of the simulated object development. The method of Gear [Gear, 1971] was used for numerical integration of the set of differential equations.

Results

Mathematical model

The mathematical model of intracellular cholesterol biosynthesis regulation comprises 65 kinetic blocks, 40 dynamic variables, and 93 reaction constants. The diploid model comprises 72 kinetic blocks, 44 dynamic variables, and 130 reaction constants. Experimental data, partially listed in table below, were used for the initial evaluation of certain parameters of enzymatic reactions with the system.

Table. Some constants of enzyme reactions

Enzyme

Substrate

Organism

Organ

Kc, sec-1 Km, mM

HMG-CoA reductase HMG-CoA Rattus norvegicus [Gil et al., 1981]

Liver 980

(-)

HMG-CoA reductase HMG-CoA Rattus norvegicus [Kleinsek & Porter, 1979] Liver (-)

0.0169

HMG-CoA reductase HMG-CoA Rattus norvegicus [Sugano et al., 1978] Intestine (-)

0.0417

HMG-CoA synthase Acetyl-CoA

Acetoacetyl-CoA

Gallus gallus (hen) [Reed et al., 1975] Liver (-)

(-)

0.1? 0.7

<0.005

HMG-CoA synthase Acetyl-CoA Homo sapiens [Rokosz et al., 1994]

Adrenal (-)

0.029

Acetoacetyl-CoA thiolase Acetoacetyl-CoA

CoA

Bos taurus (calf) [Huth et al., 1975] Liver (-)

(-)

0.01

0.025

Acetoacetyl-CoA thiolase Acetoacetyl-CoA

CoA

Gram-negative bacteria [Kim & Copeland 1997] 2.38e+4

2.38e+4

0.042

0.056

Presqualene synthase Farnesyl diphosphate Saccharomyces cerevisiae (yeast) [Sasiak & Rilling, 1988] (-)

0.03

Geranyltransferase Geranyl PP

Isopentyl PP

Homo sapiens [Barnard & Popjak 1981] Liver 40.7

40.7

4.4e-4

9.4e-4

Lanosterol synthase (R,S)-squalene-2,3-oxide Saccharomyces cerevisiae [Balliano et al., 1992] (-)

0.035

ACAT-1 Oleoyl-CoA

Cholesterol

Homo sapiens (Cricetulus griseus)[Chang et al., 1998] Ovary (-)

7.4⁻³

Bile acid hydrolase Taurocholate Lactobacillus sp. (bacteria)

[Lundeen & Savage, 1990] 1900

0.76

Other published data were used for evaluating parameters of the model, in particular [Klimov & Nikul'cheva, 1999]:

Fasting LDL concentration in adult human blood serum CLDL = 200- 300 mg/dl.

The average number of unesterified and esterified cholesterol molecules per one LDL particle QUEC = 475 and QEC = 1310.

LDL half-life in blood of healthy humans $t_{1/2} = 2.5$ days; therefore, $k_{LDLutil.} = \ln(2)/t_{1/2} = 3.21 \cdot 10^{-6} \text{ sec}^{-1}$.

Total number of LDL receptors per one cell at 37°C $Q_{LDLR} = 15,000 - 70,000$.

Lifespan of LDL receptors $t = 1 - 2$ days; therefore, $k_{LDLRutil.} = 1/t \sim 7.72 \cdot 10^{-6} \text{ sec}^{-1}$.

LDL receptor recycling span $t \sim 20$ min.

The values of the rest parameters of the model were determined through numerical experiments.

Figure 2. Kinetics of main components of the system regulating cholesterol biosynthesis in the cell.

Results of calculations

The results obtained while simulating the cell response to a twofold increase in LDL particle content in blood serum (Fig. 2, b) illustrate the model performance. The number of receptors bound to LDL increases (d); unbound, decreases (e). Intracellular concentrations of free cholesterol (a) and its esters (c) increase. Free cholesterol binds the protease (SRP), preventing SREBP-1 formation (f). Productions of enzymes involved in the internal cellular cholesterol synthesis (HMG-CoA reductase; g), LDL receptors, and intermediate low-molecular-weight components (mevalonic acid, h; squalene, i) are stopped. Cholesterol concentration in the cell is decreasing. No further influence on the system provided, it returns to the initial state. A complete recovering requires about 15 h.

In future, we plan to perform computer stimulation of recombination process in diploid cell, by modelling interactions between alleles of genes responsible for cholesterol biosynthesis.

Acknowledgments

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Vacuum Energy Density, or How Can Nothing Weigh Something?
Recently two different groups have measured the apparent brightness of supernovae with redshifts near $z = 1$. Based on this data the old idea of a cosmological constant is making a comeback.

Einstein Static Cosmology

Einstein's original cosmological model was a static, homogeneous model with spherical geometry. The gravitational effect of matter caused an acceleration in this model which Einstein did not want,

since at the time the Universe was not known to be expanding. Thus Einstein introduced a cosmological constant into his equations for General Relativity. This term acts to counteract the gravitational pull of matter, and so it has been described as an anti-gravity effect.

Why does the cosmological constant behave this way?

This term acts like a vacuum energy density, an idea which has become quite fashionable in high energy particle physics models since a vacuum energy density of a specific kind is used in the Higgs mechanism for spontaneous symmetry breaking. Indeed, the inflationary scenario for the first picosecond after the Big Bang proposes that a fairly large vacuum energy density existed during the inflationary epoch. The vacuum energy density must be associated with a negative pressure because:

The vacuum energy density must be constant because there is nothing for it to depend on.

If a piston capping a cylinder of vacuum is pulled out, producing more vacuum, the vacuum within the cylinder then has more energy which must have been supplied by a force pulling on the piston.

If the vacuum is trying to pull the piston back into the cylinder, it must have a negative pressure, since a positive pressure would tend to push the piston out.

The magnitude of the negative pressure needed for energy conservation is easily found to be $P = -u = -\rho \cdot c^2$ where P is the pressure, u is the vacuum energy density, and ρ is the equivalent mass density using $E = m \cdot c^2$.

But in General Relativity, pressure has weight, which means that the gravitational acceleration at the edge of a uniform density sphere is not given by

$$g = GM/R^2 = (4 \cdot \pi / 3) \cdot G \cdot \rho \cdot R$$

but is rather given by

$$g = (4 \cdot \pi / 3) \cdot G \cdot (\rho + 3P/c^2) \cdot R$$

Now Einstein wanted a static model, which means that $g = 0$, but he

also wanted to have some matter, so $\rho > 0$, and thus he needed $P < 0$. In fact, by setting $\rho(\text{vacuum}) = 0.5 * \rho(\text{matter})$

he had a total density of $1.5 * \rho(\text{matter})$ and a total pressure of $-0.5 * \rho(\text{matter}) * c^2$ since the pressure from ordinary matter is essentially zero (compared to $\rho * c^2$). Thus $\rho + 3P/c^2 = 0$ and the gravitational acceleration was zero,
 $g = (4 * \pi / 3) * G * (\rho(\text{matter}) - 2 * \rho(\text{vacuum})) * R = 0$

allowing a static Universe.

Einstein's Greatest Blunder

However, there is a basic flaw in this Einstein static model: it is unstable - like a pencil balanced on its point. For imagine that the Universe grew slightly: say by 1 part per million in size. Then the vacuum energy density stays the same, but the matter energy density goes down by 3 parts per million. This gives a net negative gravitational acceleration, which makes the Universe grow even more! If instead the Universe shrank slightly, one gets a net positive gravitational acceleration, which makes it shrink more! Any small deviation gets magnified, and the model is fundamentally flawed.

In addition to this flaw of instability, the static model's premise of a static Universe was shown by Hubble to be incorrect. This led Einstein to refer to the cosmological constant as his greatest blunder, and to drop it from his equations. But it still exists as a possibility -- a coefficient that should be determined from observations or fundamental theory.

The Quantum Expectation

The equations of quantum field theory describing interacting particles and anti-particles of mass M are very hard to solve exactly. With a large amount of mathematical work it is possible to prove that the ground state of this system has an energy that is less than infinity. But there is no obvious reason why the energy of this ground state should be zero. One expects roughly one particle in every volume equal to the Compton wavelength of the particle cubed, which gives a vacuum density of

$$\rho(\text{vacuum}) = M^4 c^3 / h^3 = 10^{13} [M/\text{proton mass}]^4 \text{ gm/cc}$$

For the highest reasonable elementary particle mass, the Planck mass of 20 micrograms, this density is more than 10^{91} gm/cc. So there must be a suppression mechanism at work now that reduces the vacuum energy density by at least 120 orders of magnitude.

A Bayesian Argument

We don't know what this mechanism is, but it seems reasonable that suppression by 122 orders of magnitude, which would make the effect of the vacuum energy density on the Universe negligible, is just as probable as suppression by 120 orders of magnitude. And 124, 126, 128 etc. orders of magnitude should all be just as probable as well, and all give a negligible effect on the Universe. On the other hand suppressions by 118, 116, 114, etc. orders of magnitude are ruled out by the data. Unless there are data to rule out suppression factors of 122, 124, etc. orders of magnitude then the most probable value of the vacuum energy density is zero.

The Dicke Coincidence Argument

If the supernova data and the CMB data are correct, then the vacuum density is about 75% of the total density now. But at redshift $z=2$, which occurred 11 Gyr ago for this model if $H_0 = 65$, the vacuum energy density was only 10% of the total density. And 11 Gyr in the future the vacuum density will be 96% of the total density. Why are we alive coincidentally at the time when the vacuum density is in the middle of its fairly rapid transition from a negligible fraction to the dominant fraction of the total density? If, on the other hand, the vacuum energy density is zero, then it is always 0% of the total density and the current epoch is not special.

What about Inflation?

During the inflationary epoch, the vacuum energy density was large: around 10^{71} gm/cc. So in the inflationary scenario the vacuum energy density was once large, and then was suppressed by a large factor. So non-zero vacuum energy densities are certainly possible.

Observational Limits

Solar System

One way to look for a vacuum energy density is to study the orbits of particles moving in the gravitational field of known masses. Since we are looking for a constant density, its effect will be greater in a large volume system. The Solar System is the largest system where we really know what the masses are, and we can check for the presence of a vacuum energy density by a careful test of Kepler's Third Law: that the period squared is proportional to the distance from the Sun cubed. The centripetal acceleration of a particle moving around a circle of radius R with period P is

$$a = R \cdot (2\pi/P)^2$$

which has to be equal to the gravitational acceleration worked out above:

$$a = R \cdot (2\pi/P)^2 = g = GM(\text{Sun})/R^2 - (8\pi/3) \cdot G \cdot \rho(\text{vacuum}) \cdot R$$

If $\rho(\text{vacuum}) = 0$ then we get

$$(4\pi^2/GM) \cdot R^3 = P^2$$

which is Kepler's Third Law. But if the vacuum density is not zero, then one gets a fractional change in period of

$$dP/P = (4\pi/3) \cdot R^3 \cdot \rho(\text{vacuum})/M(\text{sun}) = \rho(\text{vacuum})/\rho(\text{bar})$$

where the average density inside radius R is $\rho(\text{bar}) = M/((4\pi/3) \cdot R^3)$. This can only be checked for planets where we have an independent measurement of the distance from the Sun. The Voyager spacecraft allowed very precise distances to Uranus and Neptune to be determined, and Anderson et al. (1995, ApJ, 448, 885) found that $dP/P = (1\pm 1)$ parts per million at Neptune's distance from the Sun. This gives us a Solar System limit of $\rho(\text{vacuum}) = (5\pm 5) \cdot 10^{-18} < 2 \cdot 10^{-17}$ gm/cc

The cosmological constant will also cause a precession of the perihelion of a planet. Cardona and Tejeiro (1998, ApJ, 493, 52) claimed that this effect could set limits on the vacuum density only ten or so times higher than the critical density, but their calculation appears to be off by a factor of 3 trillion. The correct advance of the perihelion is $3 \cdot \rho(\text{vacuum})/\rho(\text{bar})$ cycles per orbit. Because the

ranging data to the Viking landers on Mars is so precise, a very good limit on the vacuum density is obtained:

$$\rho(\text{vacuum}) < 2 \cdot 10^{-19} \text{ gm/cc}$$

Milky Way Galaxy

In larger systems we cannot make part per million verifications of the standard model. In the case of the Sun's orbit around the Milky Way, we only say that the vacuum energy density is less than half of the average matter density in a sphere centered at the Galactic Center that extends out to the Sun's distance from the center. If the vacuum energy density were more than this, there would be no centripetal acceleration of the Sun toward the Galactic Center. But we compute the average matter density assuming that the vacuum energy density is zero, so to be conservative I will drop the "half" and just say

$$\rho(\text{vacuum}) < (3/(4 \cdot \pi \cdot G))(v/R)^2 = 3 \cdot 10^{-24} \text{ gm/cc}$$

for a circular velocity $v = 220 \text{ km/sec}$ and a distance $R = 8.5 \text{ kpc}$.

Large Scale Geometry of the Universe

The best limit on the vacuum energy density comes from the largest possible system: the Universe as a whole. The vacuum energy density leads to an accelerating expansion of the Universe. If the vacuum energy density is greater than the critical density, then the Universe will not have gone through a very hot dense phase when the scale factor was zero (the Big Bang). We know the Universe went through a hot dense phase because of the light element abundances and the properties of the cosmic microwave background. These require that the Universe was at least a billion times smaller in the past than it is now, and this limits the vacuum energy density to

$$\rho(\text{vacuum}) < \rho(\text{critical}) = 8 \cdot 10^{-30} \text{ gm/cc}$$

The recent supernova results suggest that the vacuum energy density is close to this limit: $\rho(\text{vacuum}) = 0.75 \cdot \rho(\text{critical}) = 6 \cdot 10^{-30} \text{ gm/cc}$. The ratio of $\rho(\text{vacuum})$ to $\rho(\text{critical})$ is called lambda.

This expresses the vacuum energy density on the same scale used by the density parameter Ω . Thus the supernova data suggest that $\Lambda = 0.75$. If we use Ω_M to denote the ratio of ordinary matter density to critical density, then the Universe is open if $\Omega_M + \Lambda$ is less than one, closed if it is greater than one, and flat if it is exactly one. If Λ is greater than zero, then the Universe will expand forever unless the matter density Ω_M is much larger than current observations suggest. For Λ greater than zero, even a closed Universe can expand forever.

The figure above shows the regions in the (Ω_M, Λ) plane that are suggested by the current data. The green region in the upper left is ruled out because there would not be a Big Bang in this region, leaving the CMB spectrum unexplained. The red and green ellipses with yellow overlap region show the LBL team's allowed parameters (red) and the Hi-Z SN Team's allowed parameters (green). The blue wedge shows the parameter space region that gives the observed Doppler peak position in the angular power spectrum of the CMB. The purple region is consistent with the CMB Doppler peak position and the supernova data. The big pink ellipse shows the possible systematic errors in the supernova data.

The figure above shows the scale factor as a function of time for several different models. The colors of the curves are keyed to the colors of the circular dots in the (Ω_M, Λ) plane Figure. The purple curve is for the favored $\Omega_M = 0.25, \Lambda = 0.75$ model. The blue curve is the Steady State model, which has $\Lambda = 1$ but no Big Bang.

Because the time to reach a given redshift is larger in the $\Omega_M = 0.25, \Lambda = 0.75$ model than in the $\Omega_M = 1$ model, the angular size distance and luminosity distance are larger in the Λ model, as shown in the space-time diagram below:

The $\Omega_M = 1$ model is on the left, the $\Omega_M = 0.25$, $\lambda = 0.75$ model is on the right. The green line across each space-time diagram shows the time when the redshift was $z = 1$, which corresponds to approximately to the most distant of the supernovae observed to date. Using a ruler you can see that the angular size distance to $z = 1$ is 1.36 times larger in the right hand diagram, which makes the observed supernovae 1.84 times fainter (0.66 magnitudes fainter).

Conclusion

In the past, we have had only upper limits on the vacuum density and philosophical arguments based on the Dicke coincidence problem and Bayesian statistics that suggested that the most likely value of the vacuum density was zero. Now we have the supernova data that suggests that the vacuum energy density is greater than zero. This result is very important if true. We need to confirm it using other techniques, such as the MAP satellite which will observe the anisotropy of the cosmic microwave background with angular resolution and sensitivity that are sufficient to measure the vacuum energy density.

Ned Wright's Home Page

FAQ | Tutorial : Part 1 | Part 2 | Part 3 | Part 4 | Age | Distances | Bibliography | Relativity

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The Gum Nebula : giant plasma blob headed to Earth by the year 5500 AD ?

The gum nebula may have melted the last ice age about 12,000-15,000 years ago, causes earth quakes, volcanos and the ozone lay hole, 12,000-15,000 years ago it was 1 million times, brighter than the moon, is only 300-1000 light years away and now covers 40-60% of the Earth's southern sky.

Monday, May 30, 2005

Gum Nebula exploded star may have melted last ice age @12,000 to 15,000 years ago

It currently covers 40-60% of the Earth's southern sky if the gum nebula's plasma and energy travels about 1.5 million miles per hour the matter will be on Earth by 5500 AD

posted by Brother-Dan-Izzo @ 11:03 AM 0 comments

Blame it on the Gum Nebula: the Giant Blob headed to Earth by 5500 AD ?

**Giant Blob headed to Earth by 5500 AD ? Blame it on the Gum Nebula star explosion @15,000 years ago, it may have melted last ice age, caused ozone hole, volcanoes and earthquakes, (Supernova Remnant in Puppis & Vela) Covering 40-60% of the Southern Sky
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Blame it on the Gum Nebula: Giant Blob headed to Earth ?

Gum Nebula (Supernova Remnant in Puppis & Vela) Covering 40-60% of the Southern Sky and Heading this Way

BLAME THE GUM NEBULA FOR

THEORY THAT THE GUM NEBULA:

(1) CAUSED THE MELTING OF THE LAST ICE AGE

(2) CAUSED THE HOLE IN THE OZONE LAYER

(3) CAUSES THE INCREASE IN EARTH'S TEMPERATURE

INPART

**(4) CAUSES INCREASE IN EARTH QUAKES, AND STORMS,
LIKE THE RECENT EARTH QUAKES, TSUNAMIS, AND
VOLCANO ERUPTION**

DEAR MEMBERS OF CONGRESS

**THE GUM NEBULA COVERS 40-60% OF THE EARTH'S
SOUTHERN SKY AND IF ITS PLASMA TRAVELS AT @1.5
MILLION MILES PER HOUR IT WILL REACH THE EARTH @
5,500 AD**

**ITS GAMMA RAY/COSMIC RAY EMF ENERGY ALREADY
PASTED BY THE EARTH 300-1000 YEARS AFTER THE STAR
EXPLODED @15,000-11,000 BC**

BLAME IT ON THE GUM NEBULA, SUPER NOVA EXPLOSION

:

**ITS RADIATION PULSE WAS SEVERAL TIMES MILLION
STRONGER THAN THE SUN**

**THE GUM NEBULA REVIVALED THE MOON IN BRIGHTNESS
IN THE SOUTHERN SKY**

BLAME THE GUM NEBULA FOR

THEORY THAT THE GUM NEBULA:

(1) CAUSED THE MELTING OF THE LAST ICE AGE

(2) CAUSED THE HOLE IN THE OZONE LAYER

**(3) CAUSES THE INCREASE IN EARTH'S TEMPERATURE
INPART**

**(4) CAUSES INCREASE IN EARTH QUAKES, AND STORMS,
LIKE THE RECENT EARTH QUAKES, TSUNAMIS, AND
VOLCANO ERUPTION**

**IT IS VERY POSSIBLE THAT THE EARTH IS RECIEVING A
LOT MORE THAN THE GUM NEBULA'S LIGHT ENERGY
PHOTONS AT THIS TIME**

MORE THOUGHT AND RESEARCH NEEDED

**THE GUM NEBULA IS NOT AN ACT OF GOD AND IT'S
PLASMA IF IT REALLY DOES MAKE IT TO EARTH WOULD
BE VERY WEAK IONS AND HELP FEED OUR SUN**

COSMIC MAGNETIC FORCE AND GOD BLESS YOU

**CRYONIC LIFE INSURANCE COMPANY DEPT OF GENERAL
RESURRECTION BR DAN IZZO 512 ONONDAGA AVE**

SYRACUSE, NY 13207

cut and pasted web page on Gum Nebula below:

Top left is NE. Image width is about 2 degrees minImage and text © 1978-2002, Anglo-Australian Observatory/Royal Obs. Edinburgh. Photograph from UK Schmidt plates by David Malin. About (12,000 to 15,000 years ago) 120 centuries ago an inconspicuous star in what is now the constellation of Vela brightened by about 100 million times to rival the Moon as the brightest object in the night sky. This photograph shows a portion of the north-western quadrant of an expanding nebulous shell, which now surrounds the site of the explosion. Near the centre of the nebula (and not seen here) is the Vela pulsar, a rapidly-spinning neutron star only a few kilometres in diameter, the remnant of the star that exploded. This tiny object spins about 11 times a second and until recently was among the faintest stars ever studied at optical wavelengths, a far cry from its brief glory as one of the brightest stars ever seen.

Date & Time: Dec 29 2002, 26:08 JST(+0900), 25min. Exp. Optical: SMC PENTAX f=165mm F2.8, Aperture: F2.8 with IDAS LPS-P1 light-pollution suppression filter Auto-guided with TAKAHASHI JP Equatorial Camera: PENTAX 67 Film: Ektachrome E200 (+1EV pushed) Location: Ooizumi vil., Yamanashi pref.

Fum Nebula / Supernova Remnant R.A. 08h 34m (around center) Dec. -45° 00' (around center) Apparent Size 40 x 90° Real Size N/A Magnitude - Distance 1500 light yrs.(center) 300 light yrs.(closest region) In lower southern sky in winter night, an extraordinary vast but dimmed ?gGum Nebula?h is spreading out with a size of 40 x 90 degrees. The nebula is positioned in the Milky Way of Puppis to Vela. The nebula with name of an astronomer, who investigated about the nebula, is considered a supernova remnant exploded about

from 10 to 30 thousand years ago. In Japan, I can capture images of only northern part of Gum Nebula, but its low altitude of meridian transit make difficult to take pictures of the nebula clearly. This image shows you a limited area of Gum Nebula around the border of Puppis and Vela, equivalent a part of northeast region. A circular nebulosity in center has an ID of Gum17. The Gum Nebula has been grouped into some regions and assigned ID numbers because it's too large to regard as single celestial object. Its whole figure has ring structure, looks like a swollen Veil Nebula in Cygnus.

Cosmic Radio Signals can be polarized at 91mhz (fm); 160mhz (vhf); 610

mhz (on channel 78uhf-tv) by keying a cb microphone over a radio receiver set on these radio channels with your home equipment. These are known cosmic radio sources from outerspace from Annual Review of Astrophysics and Astronomy 1966 editor Leo Goldberg. Facts : A lot of the static snow that you receive is your non cable uhf tv; is cosmic radio signals.....many elements naturally emit radio pulses when excited; You can polarize these signals with CB radio Microphone by keying the transmitting CB microphone over the speaker of a receiving radio set at 91 mhz..(91fm)..160 mhz..(160 vhf radio)..and transmit the spacey sound you hear to a receiving TV set at channel 78 UHF tv.....then you will see a ATT type of symbol..and see the oscillations and fluctuations of the cosmic radio signal that has been just polarized.....personally I think 160 vhf radio.....is artificially generated.....since it oscillates odd.....if intelligent life has learned to generate radio signals within our galaxy....the odds are in our favor.we are receiving them.as they receive our signals from 50+ years ago.....that energy is bouncing off our heads now. I have received a strange CBS eye symbol on my TV after I did this, It wasn't CBS's thought..it was gold on the edge, with a green center eye and purple round about the eye..but for this happened a circular rainbow image formed.then out of the cloud the CBS eye appeared.the eye looked like a lizards eye.....real spooky.I called CBS in NY, and they don't know why they pick that symbol..(~) after some research.there was a " CBS" electron gun.made for TV picture tubes in the 1950's..so maybe back in the early days of television..tv engineers must have received this same signal.

Cosmic Magnetic Force and God Bless You

**Br Dan Izzo
512 Onondaga Ave
Syracuse, NY 13207**

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Steady state theory

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Jump to: navigation, search

"steady state" redirects here. For other uses, see steady state (disambiguation).

Physical cosmology

Age of the universe

Big Bang

Comoving distance

Cosmic microwave background

Dark energy

Dark matter

FLRW metric

Friedmann equations

Galaxy formation

Hubble's law

Inflation

Large-scale structure

Lambda-CDM model

Nucleosynthesis

Observable universe

Redshift

Shape of the universe

Timeline of the Big Bang

Timeline of cosmology

Ultimate fate of the universe

Universe

Related topics

Astrophysics

General relativity

Particle physics

Quantum gravity

[edit](#)

In cosmology, the steady state theory (also known as the Infinite Universe Theory or continuous creation) is a model developed in 1948 by Fred Hoyle, Thomas Gold, Hermann Bondi and others as an alternative to the Big Bang theory (known, usually, as the standard cosmological model). Although the model had a large number of supporters among cosmologists in the 1950s and 1960s, the number of supporters decreased markedly in the late 1960s. It is also the basis for another theory known as the quasi-steady state theory which postulates big bang(s) occurring over time. The key importance of the theory is that it generated some of the most important research in astrophysics, much of which supports aspects of the Big Bang. Being a highly testable theory, in the best scientific tradition, it opened up many lines of questioning and new avenues of inquiry in cosmology.

The steady state theory was developed as a result of theoretical calculations that showed that a static universe was impossible under general relativity and observations by Edwin Hubble that the universe was expanding. The steady state theory asserts that although the universe is expanding, it nevertheless does not change its look over time. For this to work, new matter must be formed to keep the density equal over time.

Because only very little matter needs to be formed, roughly a few hundred atoms of hydrogen in the Milky Way Galaxy each year, it is not a problem of the theory that the forming of matter is not observed directly. The steady state theory had a number of attractive features. Most notably, the theory removes the need for the universe to have a beginning.

Problems with the steady-state theory began to emerge in the late 1960s, when observations apparently supported the idea that the universe was in fact changing: quasars and radio galaxies were found only at large distances (i.e., redshift, and thus, because of the finiteness of the speed of light, in the past) not in closer galaxies. Halton Arp, also since the 1960s, has been taking a different view of the data, claiming that evidence can also point to quasars existing as close as the local Virgo cluster.

For most cosmologists, the refutation of the steady-state theory came with the discovery of the cosmic background radiation in 1965, which was predicted by the big bang theory. Steven Hawking said that the fact that microwave radiation had been found, and that it was thought to be left over from the big bang, was "the final nail in the coffin of the steady-state theory." Within the steady state theory this background radiation is the result of light from ancient stars which has been scattered by galactic dust. However, this explanation has been unconvincing to most cosmologists as the cosmic microwave background is very smooth, making it difficult to explain how it arose from point sources, and the microwave background shows no evidence of features such as polarization which are normally associated with scattering. Furthermore, its spectrum is so close to that of an ideal black body that it could hardly be formed by the superposition of contributions from dust clumps at different temperatures as well as at different redshifts. Steven Weinberg wrote in 1972,

The steady state model does not appear to agree with the observed dL versus z relation or with source counts ... In a sense, the disagreement is a credit to the model; alone among all cosmologies, the steady state model makes such definite predictions that it can be disproved even with the limited observational evidence at our disposal. The steady-state model is so attractive that many of its adherents still retain hope that the evidence against it will disappear as observations improve. However, if the cosmic microwave background radiation ... is really black-body radiation, it will be difficult to doubt that the universe has evolved from a hotter, denser early stage.

As of 2006, the majority of astronomers consider the big bang theory to be the best description of the origin of the universe. In most astrophysical publications, the big bang is implicitly accepted and is used as the basis of more complete theories. At the same time, after the unexpected observation of an accelerating universe in the late-1990s, there were efforts to develop quasi-steady state theories, in which it is said that there is not a single big bang but rather multiple big bangs over time which create matter.

[edit]

Books

Fred Hoyle, Geoffrey Burbidge, and Jayant V. Narlikar, A Different Approach to Cosmology, Cambridge University Press, 2000, ISBN 0521662230

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[edit]

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Retrieved from "http://en.wikipedia.org/wiki/Steady_state_theory"
Category: Cosmology**

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General relativity

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Jump to: navigation, search

It has been suggested that Einstein's theory of gravitation be merged into this article or section. (Discuss)

General relativity (GR) is the geometrical theory of gravitation published by Albert Einstein in 1915. It unifies special relativity and Isaac Newton's law of universal gravitation with the insight that gravitation is not viewed as being due to a force (in the traditional sense) but rather a manifestation of curved space and time, this curvature being produced by the mass-energy content of the spacetime.

General relativity

Overview of GR

History

Mathematics

Resources

Tests

Black hole

Einstein equation

Equivalence principle

Event horizon

Exact solutions

FLRW metric

Gravitational lens

Gravitational radiation

Kerr metric

Quantum gravity

Schwarzschild metric

Singularity

Related topics

Albert Einstein

Astrophysics

Gravity

Cosmology

Special relativity

Riemannian geometry

edit

Contents [hide]

1 Overview

1.1 Treatment of gravitation

1.2 Justification

1.3 Fundamental principles

1.4 Spacetime as a curved Lorentzian manifold

1.5 The mathematics of general relativity

1.6 The Einstein field equations

1.7 Coordinate vs. physical acceleration

2 Predictions of General Relativity

2.1 Gravitational effects

2.1.1 Acceleration effects

2.1.2 Bending of light

2.1.3 Orbital effects

2.1.4 Rotational effects

2.1.5 Black holes

2.2 Cosmological effects

2.3 Other predictions

3 Relationship to other physical theories

3.1 Classical mechanics and special relativity

3.1.1 Inertia

3.1.2 Gravitation

3.1.3 Transition from Newtonian mechanics to general relativity

3.1.4 Transition from special relativity to general relativity

3.1.5 Conservation of energy-momentum

3.1.6 Electromagnetism

3.2 Quantum mechanics

3.3 Alternative theories

4 History

5 Status

6 Quotes

7 Notes

8 See also

9 References

[edit]

Overview

[edit]

Treatment of gravitation

Main article: Einstein's theory of gravitation

Two-dimensional visualization of space-time distortion. The presence of matter changes the geometry of spacetime, this (curved) geometry being interpreted as gravity. In this theory, spacetime is treated as a 4-dimensional Lorentzian manifold which is curved by the presence of mass, energy, and momentum (or stress-energy) within it. The relationship between stress-energy and the curvature of spacetime is governed by the Einstein field equations. The motion of objects being influenced solely by the geometry of spacetime (inertial motion) occurs along special paths called timelike and null geodesics of spacetime.

One of the defining features of general relativity is the idea that gravitational 'force' is replaced by geometry. In general relativity, phenomena that in classical mechanics are ascribed to the action of the force of gravity (such as free-fall, orbital motion, and spacecraft trajectories) are taken in general relativity to represent inertial motion in a curved spacetime. So what people standing on the surface of the Earth perceive as the 'force of gravity' is a result of their undergoing a continuous physical acceleration caused by the mechanical resistance of the surface on which they are standing.

[edit]

Justification

The justification for creating general relativity comes from the equivalence principle, which dictates that freefalling observers are the ones in inertial motion. A consequence of this insight is that inertial observers can accelerate with respect to each other. (Think of two balls falling on opposite sides of the Earth, for example.) This redefinition is incompatible with Newton's first law of motion, and cannot be accounted for in the Euclidean geometry of special relativity. To quote Einstein himself:

If all accelerated systems are equivalent, then Euclidean geometry cannot hold in all of them. [1]

Thus the equivalence principle led Einstein to search for a gravitational theory which involves curved spacetimes.

Another motivating factor was the realization that relativity calls for gravitation to be expressed as a rank-two tensor, and not just a vector as was the case in Newtonian physics [2]. (An analogy is the electromagnetic field tensor of special relativity). Thus Einstein sought a rank-two tensor means of describing curved spacetimes surrounding massive objects. This effort came to fruition with the discovery of the Einstein field equations in 1915.

[edit]

Fundamental principles

General relativity is based on a set of fundamental principles which guided its development. These are:

The general principle of relativity: The laws of physics must be the same for all observers (accelerated or not).

The principle of general covariance: The laws of physics must take the same form in all coordinate systems.

The principle that inertial motion is geodesic motion: The world lines of particles unaffected by physical forces are timelike or null geodesics of spacetime.

The principle of local Lorentz invariance: The laws of special relativity apply locally for all inertial observers.

Spacetime is curved: This permits gravitational effects such as freefall to be described as a form of inertial motion. (See the discussion below of a person standing on Earth, under "Coordinate vs. physical acceleration.")

Spacetime curvature is created by stress-energy within the spacetime: This is described in general relativity by the Einstein Field Equations.

(The equivalence principle, which was the starting point for the development of general relativity, ended up being a consequence of the general principle of relativity and the principle that inertial motion is geodesic motion.)

[edit]

Spacetime as a curved Lorentzian manifold

In general relativity, the concept of spacetime (which was introduced by Hermann Minkowski for special relativity) is modified. In general relativity spacetime is

curved: Spacetime has a non-Euclidean geometry. In special relativity, spacetime is flat.

Lorentzian: The metrics of spacetime must have a mixed metric signature. This is inherited from special relativity.

four dimensional: to cover the three spatial dimensions and time.

This is also inherited from special relativity.

The curvature of spacetime (caused by the presence of stress-energy) can be viewed intuitively in the following way. Placing a heavy object such as a bowling ball on a trampoline will produce a 'dent' in the trampoline. This is analogous to a large mass such as the Earth causing the local spacetime geometry to curve. This is represented by the image at the top of this article. The larger the mass, the bigger the amount of curvature. A relatively light object placed in the vicinity of the 'dent', such as a ping-pong ball, will accelerate towards the bowling ball in a manner governed by the 'dent'. Firing the ping-pong ball at just the right speed towards the 'dent' will result in the ping-pong ball 'orbiting' the bowling ball. This is analogous to the Moon orbiting the Earth, for example.

Similarly, in general relativity massive objects do not directly impart a force on other massive objects as hypothesized in Newton's action at a distance idea. Instead (in a manner analogous to the ping-pong ball's response to the bowling ball's dent rather than the bowling ball itself), other massive objects respond to how the first massive object curves spacetime.

[edit]

The mathematics of general relativity

Main article: Mathematics of general relativity

Due to the expectation that spacetime is curved, Riemannian geometry (a type of non-Euclidean geometry) must be used. In essence, spacetime does not adhere to the "common sense" rules of

Euclidean geometry, but instead objects that were initially traveling in parallel paths through spacetime (meaning that their velocities do not differ to first order in their separation) come to travel in a non-parallel fashion. This effect is called geodesic deviation, and it is used in general relativity as an alternative to gravity. For example, two people on the Earth heading due north from different positions on the equator are initially traveling on parallel paths, yet at the north pole those paths will cross. Similarly, two balls initially at rest with respect to and above the surface of the Earth (which are parallel paths by virtue of being at rest with respect to each other) come to have a converging component of relative velocity as both accelerate towards the center of the Earth due to their subsequent freefall. (Another way of looking at this is how a single ball moving in a purely timelike fashion parallel to the center of the Earth comes through geodesic motion to be moving towards the center of the Earth.)

The requirements of the mathematics of general relativity are further modified by the other principles. Local Lorentz Invariance requires that the manifolds described in GR be 4-dimensional and Lorentzian instead of Riemannian. In addition, the principle of general covariance forces that math to be expressed using tensor calculus. Tensor calculus permits a manifold as mapped with a coordinate system to be equipped with a metric tensor of spacetime which describes the incremental (spacetime) intervals between coordinates from which both the geodesic equations of motion and the curvature tensor of the spacetime can be ascertained.

[edit]

The Einstein field equations

Main article: Einstein field equations

The Einstein field equations (EFE) describe how stress-energy causes curvature of spacetime and are usually written in tensor form (using abstract index notation) as

where $G_{\mu\nu}$ is the Einstein tensor, $T_{\mu\nu}$ is the stress-energy tensor and Λ is a constant. The tensors $G_{\mu\nu}$ and $T_{\mu\nu}$ are both rank 2 symmetric tensors, i.e.

they can each be thought of as 4×4 matrices each of which contains 10 independent terms.

The solutions of the EFE are metrics of spacetime. These metrics describe the structure of spacetime given the stress-energy and coordinate mapping used to obtain that solution. Being non-linear differential equations, the EFE often defy attempts to obtain an exact solution; however, many such solutions are known.

The EFE reduce to Newton's law of gravity in the limiting cases of a weak gravitational field and slow speed relative to the speed of light. In fact, the value of κ in the EFE is determined to be by making these two approximations.

The EFE are the identifying feature of general relativity. Other theories built of the same premises include additional rules and/or constraints. The result almost invariably is a theory with different field equations (such as Brans-Dicke theory, teleparallelism, Rosen bimetric theory, and Einstein-Cartan theory).

[edit]

Coordinate vs. physical acceleration

One of the greatest sources of confusion about general relativity comes from the need to distinguish between coordinate and physical accelerations.

In classical mechanics, space is preferentially mapped with a Cartesian coordinate system. Inertial motion then occurs as one moves through this space at a consistent coordinate rate with respect to time. Any change in this rate of progression must be due to a force, and therefore a physical and coordinate acceleration were in classical mechanics one and the same. It is important to note that in special relativity that same kind of Cartesian coordinate system was used, with time being added as a fourth dimension and defined for an observer using the Einstein synchronization procedure. As a result, physical and coordinate acceleration correspond in special relativity too, although their magnitudes may vary.

In general relativity, the elegance of a flat spacetime and the ability to use a preferred coordinate system are lost (due to stress-energy curving spacetime and the principle of general covariance). Consequently, coordinate and physical accelerations become sundered. For example: Try using a radial coordinate system in classical mechanics. In this system, an inertially moving object which passes by (instead of through) the origin point is found to first be moving mostly inwards, then to be moving tangentially with respect to the origin, and finally to be moving outwards, yet is moving in a straight line. This is an example of an inertially moving object undergoing a coordinate acceleration, and the way this coordinate acceleration changes as the object travels are given by the geodesic equations for the manifold and coordinate system in use.

Another more direct example is the case of someone standing on the Earth, where they are at rest with respect to the surface coordinates for the Earth (latitude, longitude, and elevation) but are undergoing a continuous physical acceleration because the mechanical resistance of the Earth's surface keeps them from free falling.

[edit]

Predictions of General Relativity

(For more detailed information about tests and predictions of general relativity, see Tests of general relativity)

[edit]

Gravitational effects

[edit]

Acceleration effects

These effects occur in any accelerated frame of reference, and are therefore independent of the curvature of spacetime. (Note however that spacetime curvature usually is the source the causative acceleration when these effects are being observed.)

Gravitational redshifting of light: The frequency of light will decrease (shifting visible light towards the red end of the spectrum) as it moves to higher gravitational potentials (out of a gravity well). Confirmed by the Pound-Rebka experiment.

Gravitational time dilation: Clocks will run slower at lower gravitational potentials (deeper within a gravity well). Confirmed by the Hafele-Keating experiment and GPS.

Shapiro effect (a.k.a. gravitational time delay): Signals will take longer than expected to move through a gravitational field. Confirmed through observations of signals from spacecraft and pulsars passing behind the Sun as seen from the Earth.

In this 1919 test of the general theory of relativity, stars (marked with lines) were photographed during a solar eclipse. The rays of starlight were bent by the sun's gravity on their way to the earth.[edit]

Bending of light

This bending also occurs in any accelerated frame of reference. However, the details of the bending and therefore the gravitational lensing effects are governed by spacetime curvature.

The magnitude of this effect is twice the Newtonian prediction. It was confirmed by astronomical observations during eclipses of the Sun and observations of pulsars passing behind the Sun.

Gravitational lensing: One distant object in front of or close to being in front of another much more distant object can change how the more distant object is seen. These effects include

Multiple views of the same object: Observed of quasars whose light passes close to an intervening galaxy.

Brightening of a star due to the focusing effects of a planet or another star passing in front of it: Such "microlensing" events are now regularly observed.

Einstein rings and arcs: One object directly behind another can make the more distant object's light appear as a ring. When almost directly behind, the result is an arc. Observed for distant galaxies.

[edit]

Orbital effects

These are ways in which the celestial mechanics of general relativity differs from that of classical mechanics.

Non-Newtonian periapsis precession: The apsides of orbits precess more than expected under Newton's theory of gravity. This has been confirmed for Mercury and observed in several binary pulsars.

Orbital decay due to the emission of gravitational radiation: This has been observed in binary pulsars.

Geodetic precession: Because of the curvature of spacetime, the orientation of an orbiting gyroscope will change over time. This is being tested by Gravity Probe B.

[edit]

Rotational effects

These involve the behavior of spacetime around a rotating massive object.

Frame dragging: A rotating object will drag the spacetime along with it. This will cause the orientation of a gyroscope to change over time. For a spacecraft in a polar orbit, the direction of this effect is perpendicular to the geodetic precession mentioned above. This prediction is also being tested by Gravity Probe B.

[edit]

Black holes

Black holes are objects which have gravitationally collapsed behind an event horizon. In a "classical" black hole, nothing that enters can ever escape. However, Stephen Hawking has shown that black holes can "leak" energy, a phenomenon called Hawking radiation.

[edit]

Cosmological effects

Expansion of the universe: This is predicted by cosmological solutions of the Einstein Field Equations. Its existence was confirmed by Edwin Hubble in 1929.

Cosmological redshift: Light from distant galaxies will be redshifted due to their movement away from the observer.

Big Bang: The arising of the universe from a primordial singularity

Cosmic background radiation: The remnants of the primordial fireball. Discovered by Arno Penzias and Robert Wilson in 1965.

Dark energy: An unobserved energy that is spread throughout the universe. Recent observations of distant supernovae indicate that the expansion of the universe is accelerating. The Einstein Field Equations can support this type of universe only if 70% of its stress-energy is in the form of this dark energy.

[edit]

Other predictions

The equivalence of inertial mass and gravitational mass: This follows naturally from freefall being inertial motion.

The strong equivalence principle: Even a self-gravitating object will respond to an external gravitational field in the same manner as a test particle would. (This is often violated by alternative theories.)

Gravitational radiation: Orbiting objects and merging neutron stars and/or black holes are expected to emit gravitational radiation.

Orbital decay (described above).

Binary pulsar mergers: May create gravitational waves strong enough to be observed here on Earth. Several gravitational wave observatories are (or will soon be) in operation. However, there are no confirmed observations of gravitational radiation at this time.

Gravitons: According to quantum mechanics, gravitational radiation must be composed of quanta called gravitons. General relativity predicts that these will be spin-2 particles. They have not been observed.

Only quadrupole (and higher order multipole) moments create gravitational radiation.

Dipole gravitational radiation (prohibited by this prediction) is predicted by some alternative theories. It has not been observed.

[edit]

Relationship to other physical theories

[edit]

Classical mechanics and special relativity

Classical mechanics and special relativity are lumped together here because special relativity is in many ways intermediate between general relativity and classical mechanics, and shares many attributes with classical mechanics.

Note that in the discussion which follows, the mathematics of general relativity is used heavily. Also note that under the principle of minimal coupling, the physical equations of special relativity can be turned into their general relativity equivalent by replacing the Minkowski metric (η_{ab}) with the relevant metric of spacetime (g_{ab}) and by replacing any regular derivatives with covariant derivatives. In the discussions that follow, the change of metrics is implied.

[edit]

Inertia

In both classical mechanics and special relativity, space and then spacetime were assumed to be flat. In the language of tensor calculus, this meant that $R_{abcd} = 0$, where R_{abcd} is the Riemann curvature tensor. In addition, the coordinate system itself was also assumed to be Cartesian. These restrictions permit inertial motion to be described mathematically as

where

x^a is a position vector,

, and

τ is proper time.

Note that in classical mechanics, x^a is three-dimensional and $\tau = t$, where t is coordinate time.

In general relativity, these restrictions on the shape of spacetime and on the coordinate system to be used are lost. Therefore a different definition of inertial motion is required. In relativity, inertial motion occurs along timelike or null geodesics as parameterized by proper time. This is expressed mathematically by the geodesic equation:

where

is a Christoffel symbol (otherwise known as a connection).

Since x^a is a rank one tensor, these equations are four in number, with each one describing the second derivative of a coordinate with respect to proper time. (Note that under the Minkowski metric of special relativity, the values of the connections are all zeros. This is what turns the general relativity geodesic equations into for special relativity.)

[edit]

Gravitation

For gravitation, the relationship between Newton's theory of gravity and general relativity is governed by the correspondence principle: General relativity must produce the same results as gravity does for the cases where Newtonian physics has been shown to be accurate.

Around a spherically symmetric object, the theory of gravity predicts that objects will be physically accelerated towards the center on the object by the rule where

**M is the mass of the gravitating object,
r is the distance to the gravitation object, and
is a unit vector identifying the direction to the massive object.
In the weak-field approximation of general relativity, an identical coordinate acceleration must exist. For the Schwarzschild solution (which is the simplest possible spacetime surrounding a massive object), the same acceleration as that which (in Newtonian physics) is created by gravity is obtained when a constant of integration is set equal to $2m$ (where $m=MG/c^2$). For more information, see Deriving the Schwarzschild solution.**

[edit]

Transition from Newtonian mechanics to general relativity

Main article: Newtonian foundation of general relativity

Some of the basic concepts of general relativity can be outlined outside the relativistic domain. In particular, the idea that mass/energy generates curvature in space and that curvature affects the motion of masses can be illustrated in a Newtonian setting.

General relativity generalizes the geodesic equation and the field equation to the relativistic realm in which trajectories in space are replaced with Fermi-Walker transport along world lines in spacetime. The equations are also generalized to more complicated curvatures.

[edit]

Transition from special relativity to general relativity

Main article: Transition from special relativity to general relativity

The basic structure of general relativity, including the geodesic equation and Einstein field equation, can be obtained from special relativity by examining the kinetics and dynamics of a particle in a circular orbit about the earth.

[edit]

Conservation of energy-momentum

In classical mechanics, conservation of energy and momentum are handled separately.

In special relativity, energy and momentum are joined in the four-momentum and the stress-energy tensors. For any self-contained system or for any physical interaction, the total energy-momentum is conserved in the sense that:

, where

is a partial derivative.

is the stress-energy tensor.

For general relativity, this relationship is modified to account for curvature, becoming

, where

? is a covariant derivative.

Unlike classical mechanics and special relativity, it is not usually possible to unambiguously define the total energy and momentum in general relativity, so the conservation laws are local statements only (see ADM energy, though). This often causes confusion in time-dependent spacetimes which apparently do not conserve energy, although the local law is always satisfied.

[edit]

Electromagnetism

Electromagnetism sounded the death knell for classical mechanics, since Maxwell's Equations are not Galilean invariant. This created a dilemma that was resolved by the advent of special relativity.

In tensor form, Maxwell's equations are

and

, where

F_{ab} is the electromagnetic field tensor, and J^a is a four-current.

The effect of an electromagnetic field on a charged object of mass m is then

, where

**P is the four-momentum of the charged object.
In general relativity, Maxwell's equations become**

and

.

The equation for the effect of the electromagnetic field remains the same, although the change of metrics will modify its results.

[edit]

Quantum mechanics

Unsolved problems in physics: How can the theory of quantum mechanics be merged with the theory of general relativity to produce a so-called "theory of everything"? General relativity is incompatible with quantum mechanics; it is generally held that one of the most important unsolved problems in modern physics is the problem of obtaining a true quantum theory of gravitation. Unsuccessful attempts at obtaining such theories include supergravity, a field theory which attempted to unify general relativity with supersymmetry. At present, leading contenders which may turn out to solve this problem include M-theory and loop quantum gravity. Of these two, M-theory is significantly more ambitious in that it attempts to unify gravitation with the other known fundamental forces of Nature, whereas loop quantum gravity "merely" attempts to provide a viable quantum theory of gravitation with a well-defined classical limit which agrees with general relativity.

[edit]

Alternative theories

Well known classical theories of gravitation other than general relativity include:

Nordström's theory of gravitation (1913) was one of the earliest metric theories (an aspect brought out by Einstein and Fokker in

1914). Nordström soon abandoned his theory in favor of general relativity on theoretical grounds, but this theory, which is a scalar theory, and which features a notion of prior geometry, does not predict any light bending, so it is solidly incompatible with observation.

Alfred North Whitehead formulated an alternative theory of gravity that was regarded as a viable contender for several decades, until Clifford Will noticed in 1971 that it predicts grossly incorrect behavior for the ocean tides!

George David Birkhoff's (1943) yields the same predictions for the classical four solar system tests as general relativity, but unfortunately requires sound waves to travel at the speed of light! Thus, like Whitehead's theory, it was never a viable theory after all, despite making an initially good impression on many experts.

Like Nordström's theory, the gravitation theory of Wei-Tou Ni (1971) features a notion of prior geometry, but Will soon showed that it is not fully compatible with observation and experiment.

The Brans-Dicke theory and the Rosen bi-metric theory are two alternatives to general relativity which have been around for a very long time and which have also withstood many tests. However, they are less elegant and more complicated than general relativity, in several senses.

There have been many attempts to formulate consistent theories which combine gravity and electromagnetism. The first of these, Weyl's gauge theory of gravitation, was immediately shot down (on a postcard!) by Einstein himself, who pointed out to Hermann Weyl that in his theory, hydrogen atoms would have variable size, which they do not. Another early attempt, the original Kaluza-Klein theory, at first seemed to unify general relativity with classical electromagnetism, but is nowadays not regarded as successful for that purpose. Both these theories have turned out to be historically important for other reasons: Weyl's idea of gauge invariance survived and in fact is omnipresent in modern physics, while Kaluza's idea of compact extra dimensions has been resurrected in the modern notion of a brane-world.

The Fierz-Pauli spin-two theory was an optimistic attempt to quantize general relativity, but it turns out to be internally inconsistent. Pascual Jordan's work toward fixing these problems

eventually motivated the Brans-Dicke theory, and also influenced Richard Feynman's unsuccessful attempts to quantize gravity. Einstein-Cartan theory includes torsion terms, so it is not a metric theory in the strict sense.

Teleparallel gravity goes further and replaces connections with nonzero curvature (but vanishing torsion) by ones with nonzero torsion (but vanishing curvature).

The Nonsymmetric Gravitational Theory (NGT) of John W. Moffat is a dark horse in the race.

Similarly, Self creation cosmology is a modification of the Brans-Dicke theory that is concordant with local and cosmological observations and being tested by the Gravity Probe B experiment. Even for "weak field" observations confined to our Solar system, various alternative theories of gravity predict quantitatively distinct deviations from Newtonian gravity. In the weak-field, slow-motion limit, it is possible to define 10 experimentally measurable parameters which completely characterize predictions of any such theory. This system of these parameters, which can be roughly thought of as describing a kind of ten dimensional "superspace" made from a certain class of classical gravitation theories, is known as PPN formalism (Parametric Post-Newtonian formalism). [3] Current bounds on the PPN parameters [4] are compatible with GR.

See in particular confrontation between Theory and Experiment in Gravitational Physics, a review paper by Clifford Will.

[edit]

History

For more details on this topic, see History of general relativity.

See also: Tests of general relativity

General relativity was developed by Einstein in a process that began in 1907 with the publication of an article on the influence of gravity and acceleration on the behavior of light in special relativity. Most of this work was done in the years 1911-1915, beginning with the publication of a second article on the effect of gravitation on light. By 1912, Einstein was actively seeking a theory in which gravitation was explained as a geometric phenomenon. In 1915, these efforts culminated in the publication of the Einstein field equations, which are a set of differential equations.

Since 1915, the development of general relativity has focused on solving the field equations for various cases. This generally means finding metrics which correspond to realistic physical scenarios. The interpretation of the solutions and their possible experimental and observational testing also constitutes a large part of research in GR.

The expansion of the universe created an interesting episode for general relativity. Starting in 1922, researchers found that cosmological solutions of the Einstein field equations call for an expanding universe. Einstein did not believe in an expanding universe, and so he added a cosmological constant to the field equations to permit the creation of static universe solutions. In 1929, Edwin Hubble found evidence that the universe is expanding. This resulted in Einstein dropping the cosmological constant, referring to it as "the biggest blunder in my career".

Progress in solving the field equations and understanding the solutions has been ongoing. Notable solutions have included the Schwarzschild solution (1916), the Reissner-Nordström solution and the Kerr solution.

Observationally, general relativity has a history too. The perihelion precession of Mercury was the first evidence that general relativity is correct. Eddington's 1919 expedition in which he confirmed Einstein's prediction for the deflection of light by the Sun helped to cement the status of general relativity as a likely true theory. Since then, many observations have confirmed the predictions of general relativity. These include studies of binary pulsars, observations of radio signals passing the limb of the Sun, and even the GPS system. For more information, see the Tests of general relativity article.

[edit]

Status

The status of general relativity is decidedly mixed. On the one hand, it is a highly successful model of gravitation and cosmology which has passed every unambiguous test that it has been subjected to so far, both observationally and experimentally. It is therefore almost universally accepted by the scientific community.

On the other hand, general relativity is inconsistent with quantum mechanics, and the singularities of black holes also raise some disconcerting issues. So at the same time as it is accepted, there is also a sense that there may well be something beyond Einstein's theory still yet to be found.

Currently, better tests of general relativity are needed. Even the most recent binary pulsar discoveries only test general relativity to the first order of deviation from Newtonian projections in the post-Newtonian parameterizations. Some way of testing second and higher order terms is needed, and may shed light on how reality differs from Einstein's theory (if it does).

[edit]

Quotes

Spacetime grips mass, telling it how to move, and mass grips spacetime, telling it how to curve - John Archibald Wheeler.

The theory appeared to me then, and still does, the greatest feat of human thinking about nature, the most amazing combination of philosophical penetration, physical intuition, and mathematical skill. But its connections with experience were slender. It appealed to me like a great work of art, to be enjoyed and admired from a distance. -

Max Born

[edit]

Notes

[1] In general relativity, the term "gravitation" (meaning the tendency of massive objects to accelerate towards each other) is used instead of "gravity" since gravity is by definition the force which causes gravitation.

[edit]

See also

Wikibooks has more about this subject:

General relativityWikisource has original text related to this article:

Relativity: The Special and General TheoryClassical theories of gravitation

David Hilbert

Einstein-Hilbert action

General relativity resources, an annotated reading list giving bibliographic information on some of the most cited resources.

History of general relativity

[edit]

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General subfields within physics

Atomic, molecular, and optical physics | Classical mechanics |

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Electromagnetism | Special relativity | General relativity | Particle

physics | Quantum field theory | Quantum mechanics | Statistical

mechanics | Thermodynamics

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Static universe

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Jump to: navigation, search

Physical cosmology

Age of the universe

Big Bang

Comoving distance

Cosmic microwave background

Dark energy

Dark matter

FLRW metric

Friedmann equations

Galaxy formation

Hubble's law

Inflation

Large-scale structure

Lambda-CDM model

Nucleosynthesis

Observable universe

Redshift

Shape of the universe

Timeline of the Big Bang

Timeline of cosmology

Ultimate fate of the universe

Universe

Related topics

Astrophysics

General relativity

Particle physics

Quantum gravity

edit

The idea of a static universe is one which demands that space is not expanding nor contracting but rather is dynamically stable. Albert Einstein proposed such a model as his preferred cosmology by adding a cosmological constant to his equations of general relativity to counteract the dynamical effects of gravity which in a universe of matter would cause the universe to collapse. After the discovery by Edwin Hubble that there was a relationship between redshift and distance, Einstein declared this formulation to be his "biggest blunder".[1]

Even after Hubble's observations, Fritz Zwicky proposed that a static universe could still be viable if there was an alternative explanation of redshift due to a mechanism that would cause light to lose energy as it traveled through space, a concept that would come to be known as "tired light". Subsequent cosmological observations have shown such a model to be an unviable alternative, leading most astrophysicists to conclude that the static universe is essentially falsified.

[edit]

Nonstandard cosmologies

A very small number of proponents of the static universe continue to promote nonstandard cosmologies in defiance of scientific consensus, though the term "static universe" has fallen somewhat out of favor since it is recognized by, for example, advocates of plasma cosmology that the universe is "dynamically evolving".

[edit]

See also

Steady state theory

[edit]

References

^ In George Gamow's autobiography, *My World Line* (1970) he quotes Einstein: "Much later, when I was discussing cosmological problems with Einstein, he remarked that the introduction of the cosmological term was the biggest blunder of his life."

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THE ALTERNATIVE THEORY

THE BIG BANG THEORY

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Big Bang

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According to the **Big Bang theory**, the universe emerged from an extremely dense and hot state (bottom). Since then, space itself has expanded with the passage of time, carrying the galaxies with it. In physical cosmology, the **Big Bang** is the scientific theory that the universe emerged from an enormously dense and hot state about 13.7 billion years ago. The Big Bang theory is based on the observed Hubble's law redshift of distant galaxies that when taken together with the cosmological principle indicate that space is expanding according to the Friedmann-Lemaître model of general relativity. Extrapolated into the past, these observations show that the universe has expanded from a state in which all the matter and energy in the universe was at an immense temperature and density. Physicists do not widely agree on what happened before this, although general

relativity predicts a gravitational singularity (for reporting on some of the more notable speculation on this issue, see cosmogony).

The term **Big Bang** is used both in a narrow sense to refer to a point in time when the observed expansion of the universe (Hubble's law) began - calculated to be 13.7 billion (1.37×10^{10}) years ago ($\pm 2\%$) - and in a more general sense to refer to the prevailing cosmological paradigm explaining the origin and expansion of the universe, as well as the composition of primordial matter through nucleosynthesis as predicted by the Alpher-Bethe-Gamow theory [1].

One consequence of the Big Bang is that the conditions of today's universe are different from the conditions in the past or in the future. From this model, George Gamow in 1948 was able to predict, at least qualitatively, the existence of cosmic microwave background radiation (CMB) [2]. The CMB was discovered in the 1960s and further validated the Big Bang theory over its chief rival, the steady state theory.

Physical cosmology

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Observable universe

Redshift

Shape of the universe

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Timeline of cosmology
Ultimate fate of the universe
Universe

Related topics
Astrophysics
General relativity
Particle physics
Quantum gravity

edit

Contents [hide]

1 History
2 Overview
3 Theoretical underpinnings
4 Observational evidence
4.1 Hubble's law expansion
4.2 Cosmic microwave background radiation
4.3 Abundance of primordial elements
4.4 Galactic evolution and distribution
5 Features, issues and problems
5.1 Horizon problem
5.2 Flatness problem
5.3 Magnetic monopoles
5.4 Baryon asymmetry
5.5 Globular cluster age
5.6 Dark matter
5.7 Dark energy
6 The future according to the Big Bang theory
7 Speculative physics beyond the Big Bang
8 Philosophical and religious interpretations
9 Notes
10 External links and references
10.1 Big Bang overviews
10.2 Some primary sources
10.3 Religion and philosophy
10.4 WMAP results

10.5 Research articles

[edit]

History

Main article: History of the Big Bang

The Big Bang theory developed from observations and theoretical considerations. Observationally, it was determined that most spiral nebulae were receding from Earth, but those who made the observation weren't aware of the cosmological implications, nor that the supposed nebulae were actually galaxies outside our own Milky Way[3]. In 1927, the Belgian Catholic priest Georges Lemaître independently derived the Friedmann-Lemaître-Robertson-Walker equations from Albert Einstein's equations of general relativity and proposed, on the basis of the recession of spiral nebulae, that the universe began with the "explosion" of a "primeval atom"-what was later called the Big Bang[4].

In 1929, Edwin Hubble provided an observational basis for Lemaître's theory. He discovered that, relative to the Earth, the galaxies are receding in every direction at speeds directly proportional to their distance from the Earth. This fact is now known as Hubble's law [5]. Given the cosmological principle whereby the universe, when viewed on sufficiently large distance scales, has no preferred directions or preferred places, Hubble's law suggested that the universe was expanding contradicting the infinite and unchanging static universe scenario developed by Einstein.

This idea allowed for two opposing possibilities. One was Lemaître's Big Bang theory, advocated and developed by George Gamow. The other possibility was Fred Hoyle's steady state model in which new matter would be created as the galaxies moved away from each other. In this model, the universe is roughly the same at any point in time[6]. It was actually Hoyle who coined the name of Lemaître's theory, referring to it sarcastically as "this big bang idea" during a program broadcast on March 28, 1949 by the BBC Third Programme. Hoyle repeated the term in further broadcasts in early 1950, as part of a series of five lectures entitled The Nature of

Things. The text of each lecture was published in The Listener a week after the broadcast, the first time that the term "big bang" appeared in print. [7]

For a number of years the support for these theories was evenly divided. However, the observational evidence began to support the idea that the universe evolved from a hot dense state. Since the discovery of the cosmic microwave background radiation in 1965 it has been regarded as the best theory of the origin and evolution of the cosmos. Virtually all theoretical work in cosmology now involves extensions and refinements to the basic Big Bang theory. Much of the current work in cosmology includes understanding how galaxies form in the context of the Big Bang, understanding what happened at the Big Bang, and reconciling observations with the basic theory.

Huge advances in Big Bang cosmology were made in the late 1990s and the early 21st century as a result of major advances in telescope technology in combination with large amounts of satellite data such as that from COBE, the Hubble Space Telescope and WMAP. Such data has allowed cosmologists to calculate many of the parameters of the Big Bang to a new level of precision and led to the unexpected discovery that the expansion of the universe appears to be accelerating. (See dark energy.)

See also: Timeline of cosmology

[edit]

Overview

A graphical timeline is available here:

Graphical timeline of the Big BangBased on measurements of the expansion of the universe using Type Ia supernovae, measurements of the lumpiness of the cosmic microwave background, and measurements of the correlation function of galaxies, the universe has a calculated age of 13.7 ± 0.2 billion years. The agreement of these three independent measurements is considered strong evidence for the so-called Λ CDM model that describes the detailed nature of the contents of the universe.

The early universe was filled homogeneously and isotropically with an incredibly high energy density and concomitantly huge temperatures and pressures. It expanded and cooled, going through phase transitions analogous to the condensation of steam or freezing of water as it cools, but related to elementary particles.

Approximately 10-35 seconds after the Planck epoch a phase transition caused the universe to experience exponential growth during a period called cosmic inflation. After inflation stopped, the material components of the universe were in the form of a quark-gluon plasma (also including all other particles-and perhaps experimentally produced recently as a quark-gluon liquid [8]) in which the constituent particles were all moving relativistically. As the universe continued growing in size, the temperature dropped. At a certain temperature, by an as-yet-unknown transition called baryogenesis, the quarks and gluons combined into baryons such as protons and neutrons, somehow producing the observed asymmetry between matter and antimatter. Still lower temperatures led to further symmetry breaking phase transitions that put the forces of physics and elementary particles into their present form. Later, some protons and neutrons combined to form the universe's deuterium and helium nuclei in a process called Big Bang nucleosynthesis. As the universe cooled, matter gradually stopped moving relativistically and its rest mass energy density came to gravitationally dominate that of radiation. After about 300,000 years the electrons and nuclei combined into atoms (mostly hydrogen); hence the radiation decoupled from matter and continued through space largely unimpeded. This relic radiation is the cosmic microwave background.

Over time, the slightly denser regions of the nearly uniformly distributed matter gravitationally attracted nearby matter and thus grew even denser, forming gas clouds, stars, galaxies, and the other astronomical structures observable today. The details of this process depend on the amount and type of matter in the universe. The three possible types are known as cold dark matter, hot dark matter, and baryonic matter. The best measurements available (from WMAP) show that the dominant form of matter in the universe is cold dark

matter. The other two types of matter make up less than 20% of the matter in the universe.

The universe today appears to be dominated by a mysterious form of energy known as dark energy. Approximately 70% of the total energy density of today's universe is in this form. This component of the universe's composition is revealed by its property of causing the expansion of the universe to deviate from a linear velocity-distance relationship by causing spacetime to expand faster than expected at very large distances. Dark energy in its simplest formation takes the form of a cosmological constant term in Einstein's field equations of general relativity, but its composition is unknown and, more generally, the details of its equation of state and relationship with the standard model of particle physics continue to be investigated both observationally and theoretically.

All these observations are encapsulated in the Λ CDM model of cosmology, which is a mathematical model of the Big Bang with six free parameters. Mysteries appear as one looks closer to the beginning, when particle energies were higher than can yet be studied by experiment. There is no compelling physical model for the first 10⁻³³ seconds of the universe, before the phase transition called for by grand unification theory. At the "first instant", Einstein's theory of gravitation predicts a gravitational singularity where densities become infinite. To resolve this paradox, a theory of quantum gravitation is needed. Understanding this period of the history of the universe is one of the greatest unsolved problems in physics.

See also: Timeline of the Big Bang

[edit]

Theoretical underpinnings

As it stands today, the Big Bang is dependent on three assumptions:

The universality of physical laws

The cosmological principle

The Copernican principle

When first developed, these ideas were simply taken as postulates, but today there are efforts underway to test each of them. Tests of the universality of physical laws have found that the largest possible deviation of the fine structure constant over the age of the universe is of order 10^{-5} [9]. The isotropy of the universe that defines the Cosmological Principle has been tested to a level of 10^{-5} and the universe has been measured to be homogeneous on the largest scales to the 10% level[10]. There are efforts underway to test the Copernican Principle by means of looking at the interaction of galaxy groups and clusters with the CMB through the Sunyaev-Zel'dovich effect to a level of 1% accuracy[11].

The Big Bang theory uses Weyl's postulate to unambiguously measure time at any point as the "time since the Planck epoch". Measurements in this system rely on conformal coordinates in which so-called comoving distances and conformal times remove the expansion of the universe, parameterized by the cosmological scale factor, from consideration of spacetime measurements. The comoving distances and conformal times are defined so that objects moving with the cosmological flow are always the same comoving distance apart and the particle horizon or observational limit of the local universe is set by the conformal time.

As the universe can be described by such coordinates, the Big Bang is not an explosion of matter moving outward to fill an empty universe; what is expanding is spacetime itself. It is this expansion that causes the physical distance between any two fixed points in our universe to increase. Objects that are bound together (for example, by gravity) do not expand with spacetime's expansion because the physical laws that govern them are assumed to be uniform and independent of the metric expansion. Moreover, the expansion of the universe on today's local scales is so small that any dependence of physical laws on the expansion is unmeasurable by current techniques.

[edit]

Observational evidence

It is generally stated that there are three observational pillars that support the Big Bang theory of cosmology. These are the Hubble-

type expansion seen in the redshifts of galaxies, the detailed measurements of the cosmic microwave background, and the abundance of light elements. (See Big Bang nucleosynthesis.) Additionally, the observed correlation function of large-scale structure of the cosmos fits well with standard Big Bang theory.

[edit]

Hubble's law expansion

Main article: Hubble's law

Observations of distant galaxies and quasars show that these objects are redshifted, meaning that the light emitted from them has been shifted to longer wavelengths. This is seen by taking a frequency spectrum of the objects and then matching the spectroscopic pattern of emission lines or absorption lines corresponding to atoms of the chemical elements interacting with the light. From this analysis, a redshift corresponding to a Doppler shift for the radiation can be measured which is explained by a recessional velocity. When the recessional velocities are plotted against the distances to the objects, a linear relationship, known as Hubble's law, is observed:

where

v is the recessional velocity of the galaxy or other distant object

D is the distance to the object and

H₀ is Hubble's constant, measured to be (71 ± 4) km/s/Mpc by the WMAP probe [12].

The Hubble's law observation has two possible explanations. One is that we are at the center of an explosion of galaxies, a position which is untenable given the Copernican principle. The second explanation is that the universe is uniformly expanding everywhere as a unique property of spacetime. This type of universal expansion was developed mathematically in the context of general relativity well before Hubble made his analysis and observations, and it remains the cornerstone of the Big Bang theory as developed by Friedmann-Lemaître-Robertson-Walker.

[edit]

Cosmic microwave background radiation

Main article: Cosmic microwave background radiation

WMAP image of the cosmic microwave background radiation
The Big Bang theory predicted the existence of the cosmic microwave background radiation or CMB which is composed of photons emitted during baryogenesis. Because the early universe was in thermal equilibrium, the temperature of the radiation and the plasma were equal until the plasma recombined. Before atoms formed, radiation was constantly absorbed and reemitted in a process called Compton scattering: the early universe was opaque to light. However, cooling due to the expansion of the universe allowed the temperature to eventually fall below 3,000 K at which point electrons and nuclei combined to form atoms and the primordial plasma turned into a neutral gas. This is known as photon decoupling. A universe with only neutral atoms allows radiation to travel largely unimpeded.

Because the early universe was in thermal equilibrium, the radiation from this time had a blackbody spectrum and freely streamed through space until today, becoming redshifted because of the Hubble expansion. This reduces the high temperature of the blackbody spectrum. The radiation should be observable at every point in the universe to come from all directions of space.

In 1964, Arno Penzias and Robert Wilson, while conducting a series of diagnostic observations using a new microwave receiver owned by Bell Laboratories, discovered the cosmic background radiation. Their discovery provided substantial confirmation of the general CMB predictions-the radiation was found to be isotropic and consistent with a blackbody spectrum of about 3 K -and it pitched the balance of opinion in favor of the Big Bang hypothesis. Penzias and Wilson were awarded the Nobel Prize for their discovery.

In 1989, NASA launched the Cosmic Background Explorer satellite (COBE), and the initial findings, released in 1990, were consistent with the Big Bang's predictions regarding the CMB. COBE found a residual temperature of 2.726 K and determined that the CMB was isotropic to about one part in 10⁵[13]. During the 1990s, CMB anisotropies were further investigated by a large number of ground-

based experiments and the universe was shown to be almost geometrically flat by measuring the typical angular size (the size on the sky) of the anisotropies. (See shape of the universe.)

In early 2003 the results of the Wilkinson Microwave Anisotropy satellite (WMAP) were released, yielding what were at the time the most accurate values for some of the cosmological parameters. (see cosmic microwave background radiation experiments). This satellite also disproved several specific cosmic inflation models, but the results were consistent with the inflation theory in general.

[edit]

Abundance of primordial elements

Main article: Big Bang nucleosynthesis

Using the Big Bang model it is possible to calculate the concentration of helium-4, helium-3, deuterium and lithium-7 in the universe as ratios to the amount of ordinary hydrogen, H. All the abundances depend on a single parameter, the ratio of photons to baryons. The ratios predicted (by mass, not by number) are about 0.25 for $4\text{He}/\text{H}$, about 10^{-3} for $2\text{H}/\text{H}$, about 10^{-4} for $3\text{He}/\text{H}$ and about 10^{-9} for $7\text{Li}/\text{H}$.

The measured abundances all agree with those predicted from a single value of the baryon-to-photon ratio. The agreement is relatively poor for 7Li and 4He , the two elements for which the systematic uncertainties are least understood. This is considered strong evidence for the Big Bang, as the theory is the only known explanation for the relative abundances of light elements. Indeed there is no obvious reason outside of the Big Bang that, for example, the young universe (i.e. before star formation, as determined by studying matter essentially free of stellar nucleosynthesis products) should have more helium than deuterium or more deuterium than 3He , and in constant ratios, too.

[edit]

Galactic evolution and distribution

Main article: Large-scale structure of the cosmos

Detailed observations of the morphology and distribution of galaxies and quasars provide strong evidence for the Big Bang. A combination of observations and theory suggest that the first

quasars and galaxies formed about a billion years after the Big Bang, and since then larger structures have been forming, such as galaxy clusters and superclusters. Populations of stars have been aging and evolving, so that distant galaxies (which are observed as they were in the early universe) appear very different from nearby galaxies (observed in a more recent state). Moreover, galaxies that formed relatively recently appear markedly different from galaxies formed at similar distances but shortly after the Big Bang. These observations are strong arguments against the steady-state model. Observations of star formation, galaxy and quasar distributions, and larger structures agree well with Big Bang simulations of the formation of structure in the universe and are helping to complete details of the theory.

[edit]

Features, issues and problems

A number of problems have arisen within the Big Bang theory throughout its history. Some of them are mainly of historical interest today, and have been avoided either through modifications to the theory or as the result of better observations. Other issues, such as the cuspy halo problem and the dwarf galaxy problem of cold dark matter, are not considered to be fatal as they can be addressed through refinements of the theory.

There are a small number of proponents of non-standard cosmologies who doubt that there was a Big Bang at all. They claim that solutions to standard problems in the Big Bang theory involve ad hoc modifications and addenda to the theory. Most often attacked are the parts of standard cosmology that include dark matter, dark energy, and cosmic inflation. However, while explanations for these features remain at the frontiers of inquiry in physics, together they are suggested by independent observations of Big Bang nucleosynthesis, the cosmic microwave background, large scale structure and Type Ia supernovae. The gravitational effects of these features are understood observationally and theoretically but they have not yet been successfully incorporated into the Standard Model of particle physics. Though some aspects of the theory remain inadequately explained by fundamental physics, almost all astronomers and physicists accept that the close agreement between

Big Bang theory and observation have firmly established all the basic parts of the theory.

The following is a short list of Big Bang "problems" and puzzles:

[edit]

Horizon problem

Main article: horizon problem

The horizon problem results from the premise that information cannot travel faster than light, and hence two regions of space which are separated by a greater distance than the speed of light multiplied by the age of the universe cannot be in causal contact. The observed isotropy of the cosmic microwave background (CMB) is problematic in this regard, because the horizon size at that time corresponds to a size that is about 2 degrees on the sky. If the universe has had the same expansion history since the Planck epoch, there is no mechanism to cause these regions to have the same temperature.

A resolution to this apparent inconsistency is offered by inflationary theory in which a homogeneous and isotropic scalar energy field dominates the universe at a time 10⁻³⁵ seconds after the Planck epoch. During inflation, the universe undergoes exponential expansion, and regions in causal contact expand so as to be beyond each other's horizons. Heisenberg's uncertainty principle predicts that during the inflationary phase there would be quantum thermal fluctuations, which would be magnified to cosmic scale. These fluctuations serve as the seeds of all current structure in the universe. After inflation, the universe expands according to Hubble's law, and regions that were out of causal contact come back into the horizon. This explains the observed isotropy of the CMB. Inflation predicts that the primordial fluctuations are nearly scale invariant and Gaussian which has been accurately confirmed by measurements of the CMB.

[edit]

Flatness problem

Main article: flatness problem

The flatness problem is an observational problem that results from considerations of the geometry associated with a Friedmann-

Lemaître-Robertson-Walker metric. In general, the universe can have three different kinds of geometries: hyperbolic geometry, Euclidean geometry, or elliptic geometry. The geometry is determined by the total energy density of the universe (as measured by means of the stress-energy tensor): hyperbolic results from a density less than the critical density, elliptic from a density greater than the critical density, and Euclidean from exactly the critical density. The universe is required to be within one part in 10^{15} of the critical density in its earliest stages. Any greater deviation would have caused either a Heat Death or a Big Crunch, and the universe would not exist as it does today.

A possible resolution to this problem is again offered by inflationary theory. During the inflationary period, spacetime expanded to such an extent that any residual curvature associated with it would have been smoothed out to a high degree of precision. Thus, it is believed that inflation drove the universe to be very nearly spatially flat.

[edit]

Magnetic monopoles

The magnetic monopole objection was raised in the late 1970s. Grand unification theories predicted point defects in space that would manifest as magnetic monopoles with a density much higher than was consistent with observations, given that searches have never found any monopoles. This problem is also resolvable by cosmic inflation, which removes all point defects from the observable universe in the same way that it drives the geometry to flatness.

[edit]

Baryon asymmetry

It is not yet understood why the universe has more matter than antimatter. It is generally assumed that when the universe was young and very hot, it was in statistical equilibrium and contained equal numbers of baryons and anti-baryons. However, observations suggest that the universe, including its most distant parts, is made almost entirely of matter. An unknown process called baryogenesis created the asymmetry. For baryogenesis to occur, the Sakharov conditions, which were laid out by Andrei Sakharov, must be satisfied. They require that baryon number be not conserved, that C-

symmetry and CP-symmetry be violated, and that the universe depart from thermodynamic equilibrium. All these conditions occur in the Standard Model, but the effect is not strong enough to explain the present baryon asymmetry. Experiments taking place at CERN near Geneva seek to trap enough anti-hydrogen to compare its spectrum with hydrogen. Any difference would be evidence of a CPT symmetry violation and therefore a Lorentz violation.

[edit]

Globular cluster age

In the mid-1990s, observations of globular clusters appeared to be inconsistent with the Big Bang. Computer simulations that matched the observations of the stellar populations of globular clusters suggested that they were about 15 billion years old, which conflicted with the 13.7-billion-year age of the universe. This issue was generally resolved in the late 1990s when new computer simulations, which included the effects of mass loss due to stellar winds, indicated a much younger age for globular clusters [14]. There still remain some questions as to how accurately the ages of the clusters are measured, but it is clear that these objects are some of the oldest in the universe.

[edit]

Dark matter

Main article: dark matter

During the 1970s and 1980s various observations (notably of galactic rotation curves) showed that there was not sufficient visible matter in the universe to account for the apparent strength of gravitational forces within and between galaxies. This led to the idea that up to 90% of the matter in the universe is not normal or baryonic matter but rather dark matter. In addition, assuming that the universe was mostly normal matter led to predictions that were strongly inconsistent with observations. In particular, the universe is far less lumpy and contains far less deuterium than can be accounted for without dark matter. While dark matter was initially controversial, it is now a widely accepted part of standard cosmology due to observations of the anisotropies in the CMB, galaxy cluster velocity dispersions, large-scale structure distributions, gravitational lensing studies, and x-ray measurements from galaxy clusters. Dark matter

has only been detected through its gravitational signature; no particles that might make it up have yet been observed in laboratories. However, there are many particle physics candidates for dark matter, and several projects to detect them are underway.

[edit]

Dark energy

Main article: dark energy

In the 1990s, detailed measurements of the mass density of the universe revealed a value that was 30% that of the critical density. Since the universe is very nearly spatially flat, as is indicated by measurements of the cosmic microwave background, about 70% of the energy density of the universe was left unaccounted for. This mystery now appears to be connected to another one: Independent measurements of Type Ia supernovae have revealed that the expansion of the universe is undergoing a non-linear acceleration rather than following strictly Hubble's law. To explain this acceleration, general relativity requires that much of the universe consist of an energy component with large negative pressure. This dark energy is now thought to make up the missing 70%. Its nature remains one of the great mysteries of the Big Bang. Possible candidates include a scalar cosmological constant and quintessence. Observations to help understand this are ongoing. Results from WMAP in 2006 indicate that the universe is 74% dark energy, 22% dark matter, and 4% regular matter (see external link).

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The future according to the Big Bang theory

Before observations of dark energy, cosmologists considered two scenarios for the future of the universe. If the mass density of the universe is above the critical density, then the universe would reach a maximum size and then begin to collapse. It would become denser and hotter again, ending with a state that was similar to that in which it started—a Big Crunch. Alternatively, if the density in the universe is equal to or below the critical density, the expansion would slow down, but never stop. Star formation would cease as the universe grows less dense. The average temperature of the universe would asymptotically approach absolute zero. Black holes would evaporate. The entropy of the universe would increase to the point

where no organized form of energy could be extracted from it, a scenario known as heat death. Moreover, if proton decay exists, then hydrogen, the predominant form of baryonic matter in the universe today, would disappear, leaving only radiation.

Modern observations of accelerated expansion imply that more and more of the currently visible universe will pass beyond our event horizon and out of contact with us. The eventual result is not known. The Λ CDM model of the universe contains dark energy in the form of a cosmological constant. This theory suggests that only gravitationally bound systems, such as galaxies, would remain together, and they too would be subject to heat death, as the universe cools and expands. Other explanations of dark energy - so-called phantom energy theories - suggest that ultimately galaxy clusters and eventually galaxies themselves will be torn apart by the ever-increasing expansion in a so-called Big Rip.

See also Ultimate fate of the universe.

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Speculative physics beyond the Big Bang

While the Big Bang model is well established in cosmology, it is likely to be refined in the future. Little is known about the earliest universe, when inflation is hypothesized to have occurred. There may also be parts of the universe well beyond what can be observed in principle. In the case of inflation this is required: exponential expansion has pushed large regions of space beyond our observable horizon. It may be possible to deduce what happened when we better understand physics at very high energy scales. Speculations about this often involve theories of quantum gravitation.

Some proposals are:

chaotic inflation

brane cosmology models, including the ekpyrotic model in which the Big Bang is the result of a collision between branes

an oscillatory universe in which the early universe's hot, dense state resulted from the Big Crunch of a universe similar to ours. The universe could have gone through an infinite number of big bangs

and big crunches. The cyclic extension of the ekpyrotic model is a modern version of such a scenario. (The chief outstanding problem is that entropy would apparently be carried over to each new cycle, resulting in a condition of heat death in the remote past). models including the Hartle-Hawking boundary condition in which the whole of space-time is finite. Some of these scenarios are qualitatively compatible with one another. Each entails untested hypotheses.

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Philosophical and religious interpretations

There are a number of interpretations of the Big Bang theory that are extra-scientific. Some of these ideas purport to explain the cause of the Big Bang itself (first cause), although science cannot possibly show a first cause, so they have been criticized by some naturalist philosophers as being modern creation myths. Some people believe that the Big Bang theory lends support to traditional views of creation as given in Genesis, for example, while others believe that the Big Bang theory is inconsistent with such views.

The Big Bang, as a scientific theory, is not based on any religion. While some religious interpretations conflict with the Big Bang story of the universe, there are many other interpretations that do not.

The following is a list of various religious interpretations of the Big Bang theory:

A number of Christian churches, the Roman Catholic Church in particular, have accepted the Big Bang as a possible description of the origin of the universe, interpreting it to allow for a philosophical first cause. Pope Pius XII was an enthusiastic proponent of the Big Bang even before the theory was scientifically well established. Some students of Kabbalah, deism and other non-anthropomorphic faiths concord with the Big Bang theory, for example connecting it with the theory of "divine retraction" (tzimtzum) as explained by the Jewish scholar Moses Maimonides.

Some modern Islamic scholars believe that the Qur'an parallels the Big Bang in its account of creation, described as follows: "Have not the disbelievers seen that the heavens and the earth were sewn

[together] then we ripped them [apart]? (Ch:21,Ver:30). The claim has also been made that the Qur'an describes an expanding universe: "The heaven, We have built it with power. And verily, We are expanding it." (Ch:51,Ver:47). Parallels with the Big Crunch and an oscillating universe have also been suggested: "On the day when We will roll up the heavens like the rolling up of the scroll for writings, as We originated the first creation, (so) We shall reproduce it; a promise (binding on Us); surely We will bring it about." (Ch:21,Ver:104).

Certain theistic branches of Hinduism, such as in Vaishnavism, conceive of a theory of creation with similarities to the theory of the Big Bang. The Hindu mythos, narrated for example in the third book of the Bhagavata Purana (primarily, chapters 10 and 26), describes a primordial state which bursts forth as the Great Vishnu glances over it, transforming into the active state of the sum-total of matter ("prakriti"). Other forms of Hinduism assert a universe without beginning or end.

Buddhism has a concept of a universe that has no creation event, but instead goes through infinitely repeated cycles of expansion, stability, contraction, and quiescence. The Big Bang, however, is not seen to be in conflict with this since there are ways to conceive an eternal universe within the paradigm. A number of popular Zen philosophers were intrigued, in particular, by the concept of the oscillating universe.

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Retrieved from "http://en.wikipedia.org/wiki/Big_Bang"
Categories: Cosmology | Astrophysics

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Want to live to 113 years old ? " Bee pollen contains all the essential components of life " ?

" Bee pollen contains all the essential components of life " ?

Hi

In my area , the oldest man in North America lived , to 113 , he said his secret was eating BEE POLLEN

that most likey was his life prolongiing secret

remember , DNA does nothing but make protein , this extra body work could be bypassed with the intake of those DNA proteins

also mammals have a thymus that stops at puberty, if that could be re started you should re grow at a rate close to when you where a child , maybe stem cells are just part of immortality of the body on earth

remember we all started out in life on earth as a single cell , obtained food and oxygen from just food /

oxygen exchange fed to the cell egg this size (.) then grow into a baby within nine months time.

I don't know if stem cells are essential for reviving the aged body , but that science sounds hopeful , adding new dna cells to revive old body cells and functions

good luck , and maybe buy a 8 oz bottle of Cod Liver Oil with omega 3 essential food oil and remember Bee Pollen when you get older...and remember some mice lived 3x longer on a " starvation " diet...it was the lack of radioactive potasium 40...as it destroys 35 million of our body cells every minute

SO: starvation diets with Bee Pollen , some Cod Liver Oil , (an unknown body wax for cell walls ?) and normals vitamins minerals (I need to drink Milk or I get weak)

Healing Power of Bee Pollen - Apitherapy

"Bee pollen is often referred to as nature's most complete food. Human consumption of bee pollen is praised in the Bible, other religious books, and ancient Chinese and Egyptian texts. It has long been prescribed by traditional health practitioners- including the fathers of Western medicine Hippocrates, Pliny the Elder, and Pythagoras-for its healing properties. Bee pollen rejuvenates your body, stimulates organs and glands, enhances vitality, and brings about a longer life span. Bee pollen's ability to consistently and noticeably increase energy levels makes it a favorite substance among many world

class athletes and those interested in sustaining and enhancing quality performance." Steve Schechter N.D. Welcome to...Bee Pollen's Medical Miracles

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Bee pollen contains all the essential components of life. The percentage of rejuvenating elements in bee pollen remarkably exceeds those present in brewer's yeast and wheat germ. Bee pollen corrects the deficient or unbalanced nutrition, common in the customs of our present-day civilization of consuming incomplete foods, often with added chemical ingredients, which expose us to physiological problems as various as they are numerous.

Alicia McWatters, Ph.D - "Bee pollens popularity is increasing as more and more dog owners and breeders are recognizing its great potential. Bee pollen contains many healing components and has been used for centuries as a source of nourishment. Today it is used not only for achieving better human health, but also to improve the health of our canine friends."

Complete Nutrition --- Medical Miracles --- Infertility Problems --- Bee Products Also Treats Allergies!

**Bee Pollen and Weight Control --- Health and Beauty -
-- Longevity and the Aging Process --- How to Use Bee
Pollen**

**Bee Pollen for your Pets -- Where to purchase bee
products --- Free E-book "Healing From the Hive ---
Bee venom therapy**

The page is loading. Please wait...

**The Use of Bee Pollen as a Superfood
By Dr. Joseph Mercola
What Is Pollen?**

Pollen is the male seed of flowers. It is required for the fertilization of the plant. The tiny particles consist of 50/1,000-millimeter corpuscles, formed at the free end of the stamen in the heart of the blossom. Every variety of flower in the universe puts forth a dusting of pollen. Many orchard fruits and agricultural food crops do, too.

Bee pollen is the food of the young bee and it is approximately 40% protein. It is considered one of nature's most completely nourishing foods. It contains nearly all nutrients required by humans. About half of its protein is in the form of free amino acids that are ready to be used directly by the body. Such highly assimilable protein can contribute significantly to one's protein needs.

Gathering pollen is not as easy as it sounds. Once a honeybee arrives at a flower, she settles herself in and nimbly scrapes off the powdery loose pollen from the stamen with her jaws and front legs, moistening it with a dab of the honey she brought with her from the hive. The enlarged and broadened tarsal segments of her legs have a thick trimming of bristles, called pollen combs. The bee uses these combs to brush the

gold powder from her coat and legs in mid-flight. With a skillful pressing movement of her auricle, which is used as a hammer, she pushes the gathered gold into her baskets. Her pollen baskets, surrounded by a fringe of long hairs, are simply concave areas located on the outside of her tibiae. When the bee's baskets are fully loaded, the microscopic golden dust has been tamped down into a single golden grain, or granule.

One of the most interesting facts about bee pollen is that it cannot be synthesized in a laboratory. When researchers take away a bee's pollen-filled comb and feed her manmade pollen, the bee dies even though all the known nutrients are present in the lab-produced synthesized food. Many thousands of chemical analyses of bee pollen have been made with the very latest diagnostic equipment, but there are still some elements present in bee pollen that science cannot identify. The bees add some mysterious "extra" of their own. These unidentifiable elements may very well be the reason bee pollen works so spectacularly against so many diverse conditions of ill health.

Honeybees do double duty. They are programmed to gather pollen and carry it back to the hive as food for the colony. However, even more important as far as humans are concerned, they are also responsible for the pollination of more than 80 percent of green growing things. As bees buzz from blossom to blossom, microscopic pollen particles coat their stubby little bodies so densely that they sometimes look like little yellow fuzz balls. When they arrive at the next flower, a portion of the live golden dust is transferred to that blossom and pollination is accomplished.

It is important to recognize that a one teaspoon dose of pollen takes one bee working eight hours a day for one month to gather. Each bee pollen pellet, contains over two million flower pollen grains and one teaspoonful contains over 2.5 billion grains of flower pollen.

Complete Nutrition

Bee pollen contains all the essential components of life. The percentage of rejuvenating elements in bee pollen remarkably exceeds those present in brewer's yeast and wheat germ. Bee pollen corrects the deficient or unbalanced nutrition, common in the customs of our present-day civilization of consuming incomplete foods, often with added chemical ingredients, which expose us to physiological problems as various as they are numerous.

Pollen is considered an energy and nutritive tonic in Chinese medicine. Cultures throughout the world use it in a surprising number of applications: for improving endurance and vitality, extending longevity, aiding recovery from chronic illness, adding weight during convalescence, reducing cravings and addictions, regulating the intestines, building new blood, preventing infectious diseases such as the cold and flue (it has antibiotic type properties), and helping overcome retardation and other developmental problems in children. It is thought to protect against radiation and to have anti-cancer qualities.

Nutrient deficiencies and all the health problems they cause are recognized worldwide as a growing problem. Because bee pollen contains all the nutrients needed to sustain life, it is being used on an ever larger scale for human nourishment and health.

Science teaches that bee pollen contains many substances that combine to make it a healthy, nutritious, complete food. There are numerous reports from medical experience that conclusively show the benefits of bee pollen exceed that of a simple food item. And the bees do most of the work.

Bee-gathered pollens are rich in proteins, free amino acids, vitamins, including B-complex, and folic acid.

According to researchers at the Institute of Apiculture, Taranov, Russia, "Honeybee pollen is the richest source of vitamins found in Nature in a single food. Even if bee pollen had none of its other vital ingredients, its content of rutin alone would justify taking at least a teaspoon daily, if for no other reason than strengthening the capillaries. Pollen is extremely rich in rutin and may have the highest content of any source, plus it provides a high content of the nucleics RNA [ribonucleic acid] and DNA [deoxyribonucleic acid]."

Bee pollen is a complete food and contains many elements that products of animal origin do not possess. Bee pollen is more rich in proteins than any animal source. It contains more amino acids than beef, eggs, or cheese of equal weight. Bee pollen is particularly concentrated in all elements necessary for life.

Medical Miracles

Researchers have demonstrated that there is a substance in bee pollen that inhibits the development of numerous harmful bacteria. Experiments have shown bee pollen contains an antibiotic factor effective against salmonella and some strains of

bacteria. On the clinical level, studies have shown that a regulatory effect on intestinal function can be attributed to bee pollen. The presence of a high proportion of cellulose and fiber in pollen, as well as the existence of antibiotic factors, all contribute to an explanation for this efficacious effect.

Working with lab animals has demonstrated that the ingestion of bee pollen has a good effect on the composition of blood. A considerable and simultaneous increase of both white and red blood cells is observed. When bee pollen is given to anemic patients, their levels of hemoglobin [oxygen-carrying red blood cells] increase considerably.

It is reported that bee pollen in the diet acts to normalize cholesterol and triglyceride levels in the blood: Upon the regular ingestion of bee pollen, a reduction of cholesterol and triglycerides was observed. High-density lipoproteins (HDL) increased, while low-density lipoproteins (LDL) decreased. A normalization of blood serum cholesterol levels is also seen.

One of the most important articles ever published on bee pollen comes from our own United States Department of Agriculture. This article, entitled "Delay in the Appearance of Palpable Mammary Tumors in C3H Mice Following the Ingestion of Pollenized Food," is the work of William Robinson of the Bureau of Entomology, Agriculture Research Administration. It was published in the Journal of the National Cancer Institute way back in October 1948, five decades ago. According to the article, Dr. Robinson started with mice that had been specially bred to develop and subsequently die from tumors. He explains, "The age at which mice of this strain developed tumors ranged from 18 to 57 weeks, with

an average appearance at 33 weeks. Tumor incidence was 100 percent."

The pollen used in this study was supplied by the Division of Bee Culture and, according to the report, "was the bee-gathered type." One group of mice was fed mice chow only; another group was fed mice chow with the addition of bee pollen at a ratio of 1 part bee pollen to 10,000 parts food. Dr. Robinson's article states, "Particular attention was given to the weight of the treated animals, since underweight can in itself bring about a delay in tumor development. No decrease in weight occurred in the animals receiving the pollenized food. Instead, a slight but fairly uniform increase was noted, possibly due to a nutritional factor in pollen."

In his summary, Dr. Robinson reveals the dramatic results: "In the untreated mice [the mice not given bee pollen], mammary tumors appeared as expected at an average of 31.3 weeks. Tumor incidence was 100 percent. In the postponement series, [the mice given bee pollen], the average [onset of tumors] was 41.1 weeks, a delay of 9.8 weeks being obtained. Seven mice in this series were still tumor-free at 56 to 62 weeks of age, when the tests were terminated. I would like to emphasize that these mice were especially bred to die from cancerous tumors. Without the protection of bee pollen in their food, the mice developed tumors and died right on schedule.

Given the fact that cancer is the number-two killer in the United States (heart disease is number one), we can all certainly agree that this is an electrifying article. What happened from it? Nothing. Even the National Cancer Institute, which published it, failed to follow up on this very promising line of research. It was dropped with no explanation.

More good news comes from the University of Vienna, where Dr. Peter Hernuss and colleagues conducted a study of twenty-five women suffering from inoperable uterine cancer. Because surgery was impossible, the women were treated with chemotherapy. The lucky women given bee pollen with their food quickly exhibited a higher concentration of cancer-fighting immune-system cells, increased antibody production, and a markedly improved level of infection-fighting and oxygen carrying red blood cells (hemoglobin). These women suffered less from the awful side effects of chemotherapy as well. Bee pollen lessened the terrible nausea that commonly accompanies the treatment and helped keep hair loss to a minimum. The women also slept better at night. The control group receiving a placebo did not experience comparable relief.

A report from the Agronomic Institute, Faculty of Zootechnics, Romania, showed the immune-strengthening effects of bee pollen. According to the report, "Comparative Studies Concerning Biochemical Characteristics of Beebread as Related to the Pollen Preserved in Honey" by Drs. E. Palos, Z. Voiculescu, and C. Andrei, "An increase has been recorded in the level of blood lymphocytes, gamma globulins, and proteins in those subjects given pollen in comparison with control groups. The most significant difference occurred in lymphocytes. These results thus signify a strengthening in the resistance of the organic system."

Lymphocytes are the white blood cells that are the "soldiers" of the immune system. They are responsible for ridding the body of injurious and harmful substances, including infected or diseased cells, mutant and cancerous cells, viruses, metabolic

trash, and so on. Gamma globulin is a protein formed in the blood, and our ability to resist infection is closely related to this protein's activity.

Infertility Problems

Pollen stimulates ovarian function. The best results were obtained with a pollen supplementation of 2 parts per 100 in the ration, and with the substitution of animal proteins with pollen in a proportion of 5 parts per 100. The intensity of ovulation increased. Parallel to this increase in ovulation, pollen also improves the ability of eggs to withstand the incubation period. The best results were obtained with a quantity of 4 parts per 100 of pollen added to the ration, resulting in an increase in the percentage of eggs in respect to the control group. The application of pollen is recommended whenever the end result is obtaining eggs for reproduction.

Bee Products Also Treats Allergies!

Pollen is also a remedy for hay fever and allergies. However it must be taken at least six weeks before the season begins and then continued throughout the season if it going to work.

Bee pollen has been effectively used down through the ages to rid allergy sufferers of their afflictions. This technique, called desensitization, was developed at St. Mary's Hospital Medical School in London soon after the turn of the century. The treatment consists of administering small amounts of the allergen to stimulate the patient's own immune system to produce antibodies that will eliminate the allergic reaction. It works rather like a vaccination does

against childhood diseases. Desensitization is based on the premise that the administration of the allergen will cause the body to produce antibodies that will cancel out the effects of the offending substance when the patient is again exposed to it.

Leo Conway, M.D., of Denver Colorado, treated his patients with pollen. Dr. Conway reported: "All patients who had taken the antigen [pollen] for three years remained free from all allergy symptoms, no matter where they lived and regardless of diet. Control has been achieved in 100 percent of my earlier cases and the field is ever-expanding. Since oral feeding of pollen for this use was first perfected in his laboratory, astounding results were obtained. No ill consequences have resulted. Ninety-four percent of all his patients were completely free from allergy symptoms. Of the other six percent, not one followed directions, but even this small percentage were nonetheless partially relieved".

Relief of hay fever, pollen-induced asthma, with ever increasing control of bronchitis, ulcers of the digestive tract, colitis, migraine headaches, and urinary disorders were all totally successful. Unfortunately, Dr. Conway, an early pioneer in the field of allergies, is now deceased. What we did not know was just how lightning-fast it could bring relief. It actually eliminated long-standing symptoms in minutes. Everything from asthma to allergies to sinus problems cleared. These trials confirmed that bee pollen is wonderfully effective against a very wide range of respiratory distress.

Bee Products and Physical Activity

The British Sports Council recorded increases in strength of as high as 40 to 50 percent in those taking bee pollen regularly. Even more astounding, the British Royal Society has reported height increases in adults who take pollen. Antti Lananaki, coach of the Finnish track team that swept the Olympics in 1972, revealed, "Most of our athletes take pollen food supplements. Our studies show it significantly improves their performance. There have been no negative results since we have been supplying pollen to our athletes."

Alex Woodyly, then executive director of the prestigious Education Athletic Club in Philadelphia, said, "Bee pollen works, and it works perfectly. Pollen allows super-stars to increase their strength and stamina up to 25 percent. This increase in strength and endurance may be the key to the secret regenerative power of bee pollen. Bee pollen causes a definite decrease in pulse rate. The whole beauty of bee pollen is that it's as natural as you can get. No chemicals. No steroids." Renowned German naturalist Francis Huber was a great proponent of this miraculous food from the hive. Huber called bee pollen "the greatest body builder on Earth."

Bee Pollen and Weight Control

Bee pollen works wonders in a weight-control or weight-stabilization regimen by correcting a possible chemical imbalance in body metabolism that may be involved in either abnormal weight gain or loss. The normalizing and stabilizing effects of this perfect food from the bees are phenomenal.

In weight-loss programs, bee pollen stimulates the metabolic processes. It speeds caloric burn by lighting and stoking the metabolic fires. Honeybee pollen is

coming to be recognized as Nature's true weight-loss food. Bee pollen is a low-calorie food. It contains only ninety calories per ounce. (An ounce is about two heaping tablespoons.) It offers 15 percent lecithin by volume. Lecithin is a substance that helps dissolve and flush fat from the body. This is one reason why bee pollen lowers low-density lipoproteins (LDL) surer and faster than any other food while helping increase the helpful high-density lipoproteins (HDL), which science says protect against cholesterol and heart disease.

By boosting the value of each nutrient present in the food you eat, bee pollen also eliminates cravings. Its natural phenylalanine content acts as an appetite suppressant. Phenylalanine is a natural amino acid that the body requires. It acts on your appetat, the control center that signals fullness and hunger. Mother Nature knows what she's about. You just plain won't want to eat as much when you take bee pollen regularly. When you are overweight, phenylalanine exerts a natural appetite suppressant effect. When you need to gain weight, the phenylalanine in bee pollen works in reverse.

The chemical drug in over-the-counter weight-loss products is a manmade cousin of phenylalanine called phenylpropanolamine, which chemically depresses the appetite whether you are fat, thin, or just right. It can also give you the jitters and leave you with a drug-induced "hangover" and can be addictive. Phenylpropanolamine is a common ingredient in many decongestants, explaining why one of the side effects of these products is loss of appetite. Products that include phenylpropanolamine as an ingredient must by law carry a warning that they should not be taken by persons with certain conditions, including thyroid problems and high blood pressure.

Health and Beauty

Basic beauty begins with the glow of good health, which shines from within. A scrubbed and radiant complexion transforms any woman (or man) into a singularly attractive person. On the other hand, dull, muddy skin, often caused by poor nutrition or personal hygiene, can detract from even the most attractive. Studies have shown that unhealthy or aging skin can be dramatically improved by the consumption of honeybee pollen.

When bee pollen is included daily in the diet, it not only gives you the glow of health and aids in safe, permanent weight loss, but it can also be blended into seemingly "magic potions" to smooth, soothe, and rejuvenate every inch of the outside of your body. Several relatively inexpensive mixtures of hive products, used externally, can revitalize and rejuvenate the complexion and may even eliminate acne.

Dr. Lars-Erik Essen, a dermatologist in Halsinborg, Sweden, pioneered the use of bee products for skin conditions. He treated many of his patients successfully for acne. Dr. Essen says, "Through transcutaneous nutrition, bee pollen exerts a profound biological effect. It seems to prevent premature aging of the cells and stimulates growth of new skin tissue. It offers effective protection against dehydration and injects new life into dry cells. It smooths away wrinkles and stimulates a life-giving blood supply to all skin cells.

The skin becomes younger looking, less vulnerable to wrinkles, smoother, and healthier with the use of honeybee pollen," Dr. Essen says. "Taken internally or

used externally, bee pollen exercises a suppressive effect on facial acne. It is also an important skin rejuvenator, primarily because it contains a high concentration of the nucleic acids RNA and DNA as well as a natural antibiotic factor."

The French, long noted for their preoccupation with all things beautiful, have done a great deal of research on the use of bee pollen and other hive products in cosmetic preparations. Dr. M. Esperrois of the French Institute of Chemistry notes that honeybee pollen contains potent antibiotics that can act to reverse the effects normal aging exerts on skin, correcting darkening, wrinkles, and blemishes.

Professors N. Mankovsky and D. G. Chebotarev, two Russian scientists, confirm honeybee pollen stimulates cell renewal. They say, "The rejuvenation of skin and body cells can be encouraged by the administration of the poly-vitamins, microelements, enzymes, hormones, and amino acids present in bee pollen. These nutrients are needed by the body to form new tissue." These professors go on to praise the properties of bee pollen, calling them "vital to a form of internal and external rejuvenation at the cellular level.

Longevity and the Aging Process

According to G. Liebold, a holistic physician and psychologist of Karlsruhe, Germany, "Bee pollen is an excellent prophylaxis and therapeutic treatment against all the precocious symptoms of old age. It should be considered a universal geriatric treatment in the form of a natural remedy.

"Bee pollen causes an increase in physical and mental abilities, especially of concentration and memory

ability, activates sluggish metabolic functions, and strengthens the cardiovascular and respiratory systems. This natural nutriment from the bees removes the causes of cardiovascular symptoms, such as arteriosclerosis, cerebral insufficiency, and other sequelae. It prevents nutrient deficiency during old age, gravidity [pregnancy], and the lactation [nursing] period. Bee pollen accelerates convalescence after serious illness and/or an operation, increases the body's physical defensive powers of the immune system stimulates mental and psychological resistance to stress, and creates a harmonizing of vegetative and hormonal disorders."

Dr. Nicolai Vasilievich Tsitsin, the USSR's chief biologist (and botanist) and an acknowledged expert on geriatrics, spent quite a few years pursuing the secrets of the many in what was the Soviet Union who live extraordinarily long lives. He visited the numerous small villages that dot the landscape high up in the Caucasus mountains, where the air is always clear and sweet. In summer, the breezes there are perfumed with the scent of thousands of wild flowers. The villagers work their small farms and tend their kitchen gardens without the dubious "benefits" of the space-age technologies employed by agribiz conglomerates. This is one of the few areas left in the world where the old ways still prevail.

The stalwart families who make their homes in the mountainous regions of the former Soviet Union are some of the most long-lived people in the world. On examination, many exhibit signs of "silent" heart disease, scars of "silent" heart attacks that would have almost certainly been lethal to a modern man or woman. The hard physical work they do every day well into what some of us in the so-called civilized

world consider old age plays a part in their remarkably healthy lifestyle.

Dr. Tsitsin was amazed to find more than 200 individuals over 125 years of age, all still working every day and participating actively in village life. The hard facts of their daily existence partially explained the extended life span they achieved, but Dr. Tsitsin remained puzzled. He knew there had to be some other factor entering into the equation. He set himself the task of finding the common denominator. Then he stumbled upon it.

These people kept bees. Beekeeping is a profession that in itself a historically confers some sort of "magical" life protection on its members, a fact validated by today's scientific research. Still, only very well informed, modern beekeepers are knowledgeable about the many health-promoting benefits of bee pollen and regularly serve it at table. The villagers didn't fit the profile. Dr. Tsitsin dug deeper.

He found the answer. These beekeepers, happy and fulfilled though they were with their almost idyllic pastoral existence, were very poor. Bartering among themselves to exchange homegrown or handmade products for services was the accepted way of life. They had little cash available to them, so they regularly harvested-and either sold or bartered away the pure, clear honey from the combs of their beehives. What they kept for themselves and ate regularly was the thick residue that accumulated on the bottoms of their hives.

When he was served some of the sweet, sticky stuff in the home of one of the villagers, Dr. Tsitsin realized that this was the magic elixir that contributed to the remarkable longevity. The tasty but unattractive glob

was rich with golden granules of bee pollen. Dr. Tsitsin attributed the remarkable health and extended life spans of these particular Russians to the scientifically documented action of bee pollen. He concluded his report by saying, "Taken regularly and in sufficient amounts, bee pollen will prolong the life span of man for many years."

Another Russian scientist, Naum Petrovich Ioyrish, chief of the Academy of July 26, 1997Vladivostok and author of Bees and People, agrees. In 1975, Dr. Ioyrish reported without any qualification, "Long lives are attained by bee pollen users. It is one of the original treasure houses of nutrition and medicine. Each grain contains every important substance necessary to life."

**Scientifically Established Miracles of Bee Pollen
Medical Miracles of Bee Pollen from Gary Null's
website**

A doctor wrote about a five year old child: "This is a severely developmentally delayed floppy child whose differential includes a structural abnormality in the brain or a genetic abnormality, some of which may be diagnosed by chromosome analysis or genetic screen." Parent's tried every possible approach with no improvement. The Easter Seals Rehab Center listed the child as "(1) Severe receptive and expressive speech/language delay; (2) Immature neuromotor functioning; (3) Delay in development of play/cognitive skills; (4) Questionable hearing acuity/perception; (5) Severe delays in all areas of development; (6) Severe hypotonia."

Her mother began to give Bee-Young tablets, and slow progress began: lost rag-doll floppiness, clung to mother when held. Later noted that her eyes fixed on

colorful objects with interest; able to scoot body forward while sitting on couch; rolled over for the first time; reached with operational arm for articles; skin color better; able to drink from cup. Improvement continued onward: Colleen is alert and interested in things around her -- this fact alone is "medically impossible" -- and is beginning to speak -- she smiles and laughs, loves hugs and kisses. more

How to Use Bee Pollen

Each golden granule is densely packed with live enzymes, just about every nutrient that has a name, and some elements that science has not yet identified or labeled. Your digestive system may not be accustomed to such intensely rich food. If you are a beginner, introduce bee pollen into your diet slowly, a granule or two at a time. Don't cook with the granules or add powdered granules to anything that requires heat. Heat destroys the live enzymes and reduces the nutrient value. Otherwise, the sky's the limit.

You can: Powder an ounce or two of granules and add cinnamon to taste. Cinnamon adds a delightful spiciness and aroma to the sweetness of pollen Stir powdered granules into vegetable juices, or even into water sweetened with raw honey. Whirl the powder into salad dressings. Sprinkle whole or powdered granules on toast topped with peanut butter.

Before taking a full dose of pollen it is very important to test for a possible extreme allergic reaction by ingesting just one pellet. Then gradually build up over a week or so to the correct dose.

The optimal dose of pollen varies with individual needs. For allergy prevention all that is required is about one teaspoon per day. You should gradually

increase your dose to one tablespoon. It will give about five grams of protein which is a good addition if you already have some proteins in your meal, such as a legume dish.

Since your pollen is really a type of food and there are some fats in it. It is important to keep it refrigerated.

Bee Pollen for your Pets

Bee pollen was fed to hundreds of animals over a period of two years by scientist-researcher Dr. Remy Chauvin of the Institute for Bee Culture in Bures-sur-Yvette, France. Reporting to the French Academy of Medicine in 1956, Chauvin said, there were no side effects in the test animals. Furthermore, the use of bee pollen gave the animals increased vitality and improved "powers of reproduction" because of boosted fertility.

Beware of imported bee pollen: Virtually all of the major U.S. manufacturers of Bee Pollen have switched from selling domestic U.S. Bee Pollen to inexpensive imported pollen from China and Spain. These pollen are often heat processed and dehydrated to facilitate easy storage and increased shelf life. Unfortunately, heat destroys the bioactivity of nutrients and enzymes which are an important component of Bee Pollen. Granules of fresh bee pollen are semi-moist. When you buy Bee Pollen it is important to refrigerate the product.

In the USA (will ship internationally too)

The Natural Shopper's beehive's products are processed naturally. They do not use heat, rather a lyophilizing process that retains nutritional integrity

and keeps some moisture present. Their bee products index includes references on the main beehive products - royal jelly, bee pollen, bee propolis and honey, along with some unique combination blends that make Bee products power-packed alternatives to herbal supplements.

Organic Bee Pollen Granules - 16 oz. Fresh American Bee Pollen and other bee products. (Keep refrigerated.)

Royal Jelly, 1000mg - 60 Softgels Royal Jelly is a natural source of many nutrients. Royal Jelly is the only food for the Queen Bee, and it enables her to outlive worker bees thirty fold.

The Royal Bee Products website carries a complete line of health, beauty, skin and hair care, nutritional products and dietary supplements 100% natural, all containing no artificial ingredients, chemicals, preservatives or additives. Their products contain bee products which are locally harvested from remote areas of North America. Their bee products are harvested, processed without the use of heat, and packaged the very same day. This guarantees you the freshest, most nutritious product your money can buy. Free shipping on all orders placed within the continental United States and Canada.

Royal Jelly - The exclusive food of the queen bee is often referred to as the longevity food since the queen bee, although genetically identical to worker bees, outlives them by a factor of 40 to 1. This mysterious food contains the greatest known concentration of pantothenic acid, the anti aging vitamin, which reverses imbalances in the body's chemistry.

Hormonal and chemical imbalances are causes of stress, anxiety, and overeating.

Bee Propolis - A rich source of B vitamins, minerals and bioflavonoids. As a natural antibiotic it has no equal. It stimulates the thymus gland to produce more white blood cells, which the body uses to rid itself of

viruses, poisons and other metabolic waste products. When our immune system is strong, the result is health rather than illness.

Bee Pollen - Often referred to as nature's perfect food. With 96 known nutrients, it is a rich dietary source of zinc, calcium, magnesium and iron. It can energize you, give you a sense of well being, increase your intellectual capacity and close any nutritional gaps in your diet.

**Enter the The Royal Bee Products website
Free Ebook**

'Healing from the Hive' provides valuable information on bee products, their safe usage and supporting research, and includes information on their primary applications. Bee products are among some of the most remarkable and versatile nutrients of the natural world. They have fascinated cultures for generations and are now experiencing a renaissance as more information surfaces supporting their healing properties. In this book, Rita Elkins discusses how bee products can aid healing, boost immunity and slow the aging process, as well as increasing energy and stamina. Read this captivating book and see just how you can change your life by improving your health inexpensively. Simplify your supplements! (you'll see the clickable free ebook link on your right in that page)

Books: Bee Well - Bee Wise : with bee pollen, propolis, and royal jelly and Bees Don't Get Arthritis

**Learn more about the Medical Miracles of Bee Pollen from Gary Null's website
Bee Products FAQ by Trina Nowak, B.Sc.Agr.**

BEE VENOM THERAPY by Glenn Rothfeld M.D
Apitherapy, the medicinal use of honey bee products, has been practiced since ancient times. In the modern world honey bee venom has found wide uses in treating arthritis and other inflammatory and degenerative diseases. The world scientific literature contains more than 1500 articles on bee venom. The French and Russian equivalents of the N.I.H. have been involved in clinical studies of honey bee venom, and in the U.S. the Army has looked extensively at the chemical compounds in bee venom.

Honey bee venom contains at least 18 active substances. Melittin, the most prevalent substance, is one of the most potent anti-inflammatory agents known (100 times more potent than hydrocortisol). Adolapin is another strong anti-inflammatory substance, and inhibits cyclooxygenase; it thus has analgesic activity as well. Apamin inhibits complement C3 activity, and blocks calcium-dependent potassium channels, thus enhancing nerve transmission. Other substances, such as Compound X, Hyaluronidase, Phospholipase A2, Histamine, and Mast Cell Degranulating Protein (MSDP), are involved in the inflammatory response of venom, with the softening of tissue and the facilitation of flow of the other substances. Finally, there are measurable amounts of the neurotransmitters Dopamine, Norepinephrine and Serotonin.

Bee Venom therapy can be useful in a wide variety of medical situations. Charles Mraz, a beekeeper in Middlebury, Vermont who has popularized bee venom therapy for the past 60 years, says that it is reasonable to try bee venom therapy in any clinical

situation where nothing else works. However, there are four situations which are most frequent:

1. Arthritis and other systemic inflammations. Bee venom therapy can be useful in both rheumatoid and osteoarthritis, helping with both pain and swelling. In the case of rheumatoid arthritis, rheumatoid nodules can lessen in size. Other connective tissue diseases such as scleroderma have been (anecdotally) helped by BVT. Even systemic inflammations not related to joints, such as ulcerative colitis or even asthma, may warrant a trial of bee venom. This is presumedly due to stimulation of endogenous cortisol through the hypothalamus-pituitary-adrenal axis.

2. Acute and chronic injuries. Bursitis, tendonitis and other areas of injury respond well to bee venom therapy. In this case, the effect is probably a local anti-inflammatory effect, involving the humoral and cellular immune responses to a foreign protein. Chronic back and neck pain may respond, as can other aches and pains.

3. Scar tissue. Keloids and other scar tissue are broken down and softened by the substances in the venom, and can flatten out and fade in color. Internal scar tissue, such as adhesions from previous surgery, may respond to treatment over the area.

4. Multiple Sclerosis. This use of bee venom is poorly understood, and needs to be studied further. Recently, the MS Association of America awarded a grant to an immunologist, Dr. John Santilli, to prepare the venom in extract form to study its effect on MS patients. Hundreds of patients with MS currently seek out bee venom therapists and beekeepers. The treatment is prolonged and not for the squeamish, but the common responses are increased stability, less fatigue, and less spasm. Learn more about Bee Venom Therapy

American Apitherapy Society

Bee Venom Therapy Journal The Apitherapy Reference Data Base

Other Natural Health Enhancers and Detoxifiers that you should know about:

Salt Deficiency: the cause of many serious diseases
When organic, unrefined salt lack in your diet, weakness and sickness follow.

An abundance of the ingredients in unrefined real salt (not common table salt) are as synonymous with life today as they were a billion years ago before single cells appeared here. Lack of them is synonymous with birth defects, organ failure, decay, diseases, premature aging and death at a young age. more about real salt

Healing Clay - Healing Earth

Clay is renowned to have many uses in promoting health in plants, animals and humans. Bentonite, Pascalite, as well as other types of healing clays, have been used by indigenous cultures since before recorded history.

"The Native Americans call it "Ee-Wah-Kee" meaning "The-Mud-That-Heals" Bentonite, as well as other types of healing clay, has been used by indigenous cultures since before recorded history. "The Amargosians (predecessors to the Aztecs), the Aborigines, and natives of Mexico and South America all recognized the benefit of clays. " "...healing mud not only draws toxic material out of the body if taken internally, but also reduces pain and infection in open wounds on both humans and animals." Eaton Earth

Marine Plants To Nourish, Boost Immunity and Detoxify

Sea Vegetables (Spirulina - Kelp - Chlorella) have been acknowledged as a detoxifier, a balanced nourishment and a miraculous healing plant. Ocean/Sea algae are the richest natural source of minerals, trace minerals and rare earth elements.

"There is no family of foods more protective against radiation and environmental pollutants than sea vegetables ... sea vegetables can prevent assimilation of different radionuclides, heavy metals such as cadmium, and other environmental toxins." Steven Schecter, N.D.

Many kinds of seaweed are eaten by people because they are full of vitamins and iodine. Asian cultures use seaweed like green beans and carrots are used in the United States. One of seaweed's most prominent health benefits is its ability to remove radioactive strontium and other heavy metals from our bodies. Whole brown seaweeds (not granulated) such as kelp contain alginic acid which binds with the toxins in the intestines rendering them indigestible and carries them out of the system. More about Marine Plants To Boost Immunity and Detoxify

A further look at healing with nature. Nature provides us with a simple, straightforward system for regaining and maintaining superb human health and beauty.

Healing with Food: Most human illnesses and diseases are due to a deficiency of vital nutrients. When you supply your body with the proper nutrients, in a form that your body can use, it knows how to repair itself.

Healing through Fasting: Fasting is the world's most ancient and natural healing mechanism.

Healing with Water: Hydrotherapy has been used for centuries to heal the sick

Healing with the Sea: There is no family of foods more protective against radiation and environmental pollutants than sea vegetables.

Healing with Sunlight: Sunlight helps the body heal wounds and injuries and overcome virtually any illness.

Healing with Earth: Clay is renowned to have many uses in promoting health in plants, animals and humans.

Healing with Plants: Plants have the power to supply the bodies life force with the energies it needs to restore and maintain health.

Healing with Urine: One of the most powerful, most researched and most medically proven natural cures ever discovered.

Basic Healing Principles: The body has an innate capacity to heal itself. Self-healing can only occur once the cause of the illness has been eliminated.

Why elimination of the symptom is NOT the same as elimination of the disease? Physicians and surgeons palliate symptoms instead of removing causes

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Home: ShirleysWellnessCafe.com (aka: MyWellnessHouse.com) is a free educational site site dedicated to help promote holistic health for you, your family, and your animals.

DARK DAYS:

The lights of natural medicine are being put out around the world Stop the EU ban on supplements NOW!

The Food Supplements Directive will effectively ban around 5000 products currently available in EU supplement markets. The Alliance for Natural Health, (ANH) on behalf of the natural healthcare industry, files lawsuit against the EU Food Supplements Directive ban and needs donations. Download ANH flyer, print it and distribute it as widely as you can. Read why US companies and consumers need to support the ANH lawsuit NOW! BLOWING THE WHISTLE ON THE COVER-UP An Interview with John Hammell of International Advocates For Health Freedom.

"The Corporation" is a documentary film that will assist us in our efforts to defend consumer access to dietary supplements as multinational pharmaceutical companies attempt to railroad our access via CODEX and the EU Food Supplement Directive.

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Tonic Herbs for Longevity, Rejuvenation, Immunity
Mother Nature has devised a marvelous system of nutrition and nurture for us. Tonic herbs strengthen and improve specific organs, systems, weaknesses or**

the body as a whole. They are generally gentle herbs that are used to stimulate and increase the function of organs that are not operating at their highest level and to prevent a decline in the function of organs.

Free Ebook

'Healing from the Hive' provides valuable information on bee products, their safe usage and supporting research, and includes information on their primary applications.

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Natural Health for Women

Natural Health for Men

Guide to natural eyesight treatments

Natural Health for Diabetes

Health Issues: Consumer Alert!

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What is Homeopathy?

Urine therapy: medically proven natural cure

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Water: the great healer

Amazing healing power of clay

Bee Pollen's Medical Miracles

Marine plants to enhance health

Guide to natural treatments for Fibromyalgia

Immune system: the body's defense department

Sunlight to restore health

Cayenne Pepper: the great healer

Wheatgrass juice: nectar of health and rejuvenation

Healing Earth: Fulvic Acid & Shilajit

A healing crisis: what is it?
Transfer Factor for people and animals
Emotional Freedom: overcoming stress naturally
Overcoming The Sugar Blues & Getting Off Prozac
Healing shingles/herpes zoster naturally and rapidly
Flaxseed Oil The Wonder Healer
Cholesterol Myth - Fats that Heal, Fats that Kill!
Salt Deficiency: the cause of many serious disease
Radiant, healthy skin: the natural way
Dangers of Modern Medicine: Iatrogenic Diseases
Healing asthma: a drugless approach
Healing eczema: a drugless approach
Healing psoriasis: a drugless approach
Parasites Infections: Symptoms and Natural Treatment (humans & pets)
Basic Healing Principles
AIDS/HIV/AZT: truth behind the propaganda
The bitter truth about nutrasweet
Canola oil: how toxic is it?
Bovine Growth Hormones in your milk
Beware of Genetically Engineered Foods
Radiation Emergencies: Protecting The Thyroid Gland
Weight Loss: natural and healthy solutions
West Nile Virus - what the media won't tell you
About the author of this website
Vaccines:
Vaccines Overview/Index
Vaccines and Sudden Infant Death Syndrome (SIDS)
Shaken Baby Syndrome or Vaccine-Induced Encephalitis?
Misdiagnosed Shaken Baby Syndrome: A Criminal Consequence of Vaccine Injury
AUTISM: is there a vaccine connection?
Criminal Consequence of Vaccine Injury
Anthrax Vaccine Facts & Gulf War Syndrome
Government Enforced Vaccinations: Vaccination Tracking Registry

How To Legally Avoid Unwanted Immunizations Of All Kinds

Vaccine Support Groups & Organizations

Animals: chronic dis-ease caused by vaccines

Nosodes: alternative to conventional vaccines

Library: Vaccine Controversy books

Holistic Children's Health :

Holistic Pediatrics (general)

Holistic Pediatrics (general)

Nutrition for Babies & Children

Attachment Parenting

Ear infections: alternative to tubes and antibiotics

Childhood vaccinations: are they really safe and effective?

Sudden Infant Death Syndrome: astonishing facts

Autism: is there a vaccine connection?

The Circumcision Decision: what I wish I had known...

Understanding your baby's needs

Natural Birth & Home Birth

Ritalin Free Kids: Helping Children, Not Drugging Them

Homeopathy for Children & Infants

Forced Drugging of Children Parents facing jail over compulsory drug orders.

No longer blind: the story of Shirley's baby born blind & brain-injured

Holistic Animal health

Do You Really Know What's In Your Pet's Food? by Dr. Jane Bicks DVM

Why RAW food?

Food Unfit For Pets

All Natural Healthy Pet Food

Animal Nutritional Therapy

Natural Animal Health

Homeopathy for animals

Pet Allergies, skin problems, obsessive biting self, chewing paws

Rearing healthy pups & kittens

Saving Shasta's life: a holistic approach
Sample RAW pet food recipes
Toxic environment and your pet's illness
Alternative to antibiotics
Testimonials of amazing animal healing.
Preventing & Healing Animal Cancer without drugs or surgery
Holistic Health for Horses
Feline Holistic Health
Natural diet for pet birds
Vaccinosis: chronic dis-ease caused by vaccines
Nosodes: alternative to conventional vaccines
List of holistic veterinarians
Managing flea bites and hotspots naturally
Improving your animal's health with kelp
Books & video: holistic animal health
Training Shasta for personal protection
Gift Shop: pet toys, supplies & unusual gifts
Non-toxic health products and supplies for your pets
Free Online Easy Health Guide

Ready to use formulated herbal remedies for conditions and ailments. You can use the online health guide to select products that target your health and nutritional goals: circulatory system - digestive system - lymphatic system - muscular/skeletal system - nervous system - respiratory system - reproductive/endocrine system, urinary system. Learn more: Medicinal & Nutritional Rainforest Herbs for People & Pets

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Natural Herbal Solutions just for Infants, Children & Teens: Help your child stay healthy naturally: Cold / Flu - Prevention / Treatments - Ear / Nose / Throat - ADD / ADHD / Attention disorder - Acne / Pimples / Blackheads and much more**

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**Natural Herbal Solution just for Men: Herbs: Prostate Protector - Natural Male Sexual Enhancer - Sports / Strength / Lifting - Athletes Foot / Jock Itch - Baldness / Hair Loss / Alopecia - and much more
Ayurvedic herbal remedies Ayurveda, the science of life, prevention and longevity, is the oldest and most holistic and comprehensive medical system available. Its fundamentals can be found in Hindu scriptures called the Vedas - the ancient Indian books of wisdom written over 5,000 years ago. Ayurveda uses the inherent principles of nature to help maintain health in a person by keeping the individual's body, mind and spirit in perfect equilibrium with nature. more**

Dr. Sears' SeaHealth Plus contains up to 74 naturally occurring plant source minerals grown in the cold, pristine waters of the North Atlantic and Pacific oceans. Also includes aloe vera. Up to 10 times the antioxidant value of many sea vegetable products.

Natural remedies for anxiety, worry and panic attack: Scientific research suggests that anxiety is the result of biochemical imbalance in the brains alarm center, the amygdala, and a psychological imbalance in thinking that in combination cause an exaggerated and persistent stress response.

Magnetic Therapy Research at the Baylor College of Medicine in Houston indicated that magnetic therapy could provide significant relief for pain from post polio syndrome. There are many applications claimed for magnetics from the reduction of scar tissue to the treatment of internal organs. The predominant use of magnetic devices is the treatment of musculoskeletal pain and myofacial pain. [learn more](#)

Natural herbal remedies for a Healthy Heart - Hypertention - High Cholesterol

Natural Plant Medicine

Cold and Flu Remedy

Herpes and Cold Sores Remedy

Shingles/Zoster Remedy

Chronic Fatigue/EBV/Fibromyalgia

PMS, Menopause, Peri-Menopause

and more

Smoking Dependency & Nicotine Addiction Natural supplements and herbal remedies to help relieve the craving for nicotine.

Alcoholism / Addictions Alcohol is causes metabolic damage to every cell and depresses the immune system. Since alcohol is broken down in the liver, it can cause severe damage to the liver, ultimately leading to the death of the liver cells. Furthermore, the body's ability to absorb nutrients is impaired, resulting in malnutrition. Withdrawal symptoms may include: insomnia, hallucinations, convulsions, fever, and profuse sweating. Supplements for alcoholism for assistance with physical and psychological aspects of recovery

Natural Homeopathic formulas: Medicine from Nature, homeopathic formulas are based on a natural medical science that works with your body to stimulate your own natural defenses. For chronic and serious medical conditions, a consultation with a skilled homeopath is highly recommended. Learn about the incredible healing power of homeopathy

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What's new at Shirley's Wellness Cafe: Check the updated list

Thank you for your visit. I hope you enjoyed this site. There's more, take a look...

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Do You Really Know What's In Your Pet's Food?

Healing animals without drugs.

Vaccinations adverse effects.

Skin problems, pet allergies, fleas

Cancer: protecting & healing your animals.

List of holistic veterinarians

Holistic Health for Horses, for dogs, for Pet Birds, for Ferrets and for Cats

and much more...

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Candida: Conquering Yeast Infections: The Non-Drug Solution

Infertility & Miscarriage

Treating Menopause Naturally.

Autoimmune low-thyroid can cause fatigue, depression, excess weight.

Estrogen's Deadly Truth: a story of deception, betrayal, hidden agendas, propaganda and misinformation.

Lifting the Curse of PMS

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The Male Andropause (like menopause)

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Learn about alternatives to ritalin and other drugs**

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gotten so out of hand that America is waking up to
this. This is a national catastrophe." more**

**Julian Whitaker M.D - "Class action lawsuits have
been filed in Texas, California and New Jersey
charging Swiss pharmaceutical giant Novartis, maker
of Ritalin, with conspiracy to create the psychiatric
disorder known as ADHD in order to fuel the market
for their product."**

Ailment Guide A-Z

**Search for Conditions & Ailments (listed in
alphabetical order along with natural treatments)**

**"We can solve well over 90% of the all chronic
diseases with simple, inexpensive natural therapies."
Dr. Mercola**

Cod Liver Oil is Close to an Elixir as We May Ever Find More Than Any Other Single Supplement, Cod Liver Oil Helps Reverse Disease and Build Health
by Ron Schmid, N.D.

**"elixira preparation supposedly able to prolong life indefinitely a supposed remedy for all ills."
The Oxford Encyclopedic English Dictionary**

Cod liver oil is the richest source of several nutrients in which most people are deficient. These nutrients include EPA (eicosapentaenoic acid), DHA (docosahexaenoic acid), and natural vitamins A and D. Deficiencies are a major contributing factor in the development of nearly all of the illnesses that plague human beings eating refined foods. Evidence substantiating these statements is presented in other articles posted on this web site.

When people start taking cod liver oil, the body basically says, "Good God, where have you been all my life?" Things often start to change quickly, particularly when the cod liver oil is part of the overall program I've described. The omega-3 fatty acids (EPA and DHA) influence prostaglandins that regulate every system, every cell, in the body. Natural vitamins A and D from fish oil and animal sources have their own profound effects. Everything may be effected, from the immune system to the brain, from skin problems to PMS.

The chloroplasts in land and sea plants contain alpha linolenic acid. Fish and land animals convert it into EPA and DHA. Humans are able to make this conversion, but not very efficiently. That is one

explanation for why people in every hunter-gatherer culture in the history of the world ate all the animals they could get their hands on. Fish, grass-fed animals (corn doesn't have alpha linolenic acid), and raw dairy products from grass-fed animals are our natural sources of these crucial nutrients. People living on modern, carbohydrate-rich diets (not to mention vegetarians) just don't get enough of these foods. Health problems are the inevitable result. I've found that cod liver oil is the single most important supplement my patients can take.

Even those of us who do eat according to the principles Weston Price discovered in his studies of traditional cultures do well to take cod liver oil. However well one may eat, it's hard to get enough of the nutrients cod liver oil provides. I've taken it daily for nearly thirty years, and I believe it is a cornerstone in the excellent health and vitality I enjoy.

I use and recommend from one to three tablespoons per day of lemon-flavored cod liver oil. Quality is a real issue when it comes to cod liver oil; a lot of what is available is to one degree or another rancid, in part because it is imported into this country in barrels and then bottled here. The best cod liver oil is bottled in Norway when it is freshly made, and that is what I use. The oil comes from the livers of fresh cod fish. Because the liver oil content is highest in the winter and early spring, only cod caught at that time of the year are used. The oil is separated from the liver tissues without the use of chemicals. To insure the freshness of the oil, the air inside the bottle is replaced with nitrogen. Regular independent testing insures that the oil is free of detectable levels of mercury, cadmium, lead, PCBs, and 28 other contaminants. The result is the best cod liver oil you

can buy, and the lemon flavor makes it quite palatable for most people.

Our 500 milliliter (16.8 fluid ounces) bottles of lemon-flavored Norwegian cod liver oil cost \$19.50. We also have 1000-milligram capsules, 250 per bottle, at the same price.

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Imagine - a utopia where some have the ability to live outside of the shadow of death. Would it really be utopian for them? Or for others who still live then as we do, obliged to come to terms with our own mortal fate? How plausible is the prospect of life eternal, an ancient dream of anxious mortals? What unprecedented problems might follow if science soon offered some humans life eternal? How do rapid advances in the biosciences, and the esoteric like, bear on this? What, in the last analysis, is the relationship of our fear of death to our musings about a more perfect life ... and how well have we really thought through this complex matter? Considerable help is offered by the unusual brow-raising essay below.

Immortality Closer Than You Think* [Stanley Shostak](http://www.utopianideas.net/1st%20edition/Contributors.htm)

[http://www.utopianideas.net/1st edition/Contributors.htm](http://www.utopianideas.net/1st%20edition/Contributors.htm) What if some of us could live forever? What might immortals be like, and what might life be like in a world shared with immortals?

Immortal human beings would resemble preadolescent human beings of about eleven years of age, with an individual appearance (phenotype) acquired through the interaction of hereditary material (genotype) with a physico-psycho-social structure known as the "environment." Indeed, the only physical difference between mortal preadolescents and immortals would be that the immortals would be of different chronological ages. Because the immortals's tissues, organs, and systems would be maintained and repaired eternally through the differentiation of self-renewing, pluripotential exotic stem (es) cells released by an internal generator, immortals would not mature or age. The principles for making Homo sapiens forma immortalis are well established in canonical biology. (1) Biology prescribes that an individual organism, such as any one of us, consists of two parts: the germplasm, or nuclear genes, made of heredity units, and the somatoplasm made of cytoplasm, including organelles. Germplasm flows immortally from generation to generation through germ lines of eggs and spermatozoa, while somatoplasm branches off the germ line at nodes of fertilization or points of recombination, forming somatic lines, or cell lineages that comprise mortal individuals.

From the point of view of biologists, achieving immortality depends simply on reversing these roles, creating an endless flow in the somatic line at the expense of the germ line. The problem for making immortal human beings is that nothing in our Darwinian evolution or normal course of development offers the remotest possibility of performing the sea change of somatic and germ lines. (2)

Prospects for Immortalization. Biological change, however, is not limited to evolution and development, and a window of opportunity would seem open in preadolescence for stabilizing individuals around the positive process of life. At that stage of development, degenerative changes would not yet have taken the upper hand in the balance with growth, differentiation, and sculpturing.

Ways of affecting the desired sea-change are suggested by the exceptional changes thought to have occurred in early life-forms. (3) Early-life on Earth may have produced cells with nuclei (eukaryotes), sex, death, and multicellular organisms through devolution, the fusion

and/or fission of life forms. A new organ, the generator, might be engineered by mimicking these devolutionary processes.

The generator would begin as a cloned blastocyst and turn into a perpetual source of immunologically and genetically compatible es cells dwelling within the organism. The generator would wholly replace gonads, and es cells would permanently supplant germ line, and hence juvenilize the human being for ever .

Only two questions remain: What are the realistic prospects for immortalization? What adjustments will be required for life among and with immortals?

Not on the Agenda, But... The realistic prospects for immortality are hard to judge simply because immortality research is not presently on the agenda of any national agency, nonprofit enterprise, or even biotech startup company. Rather, "human-machine synthesis is seen as the next stage of human evolution" and the avant-garde of research devotes itself to work on cyborgified longevity.(4)

I expect that the cyborgification of human beings will continue, since it is profitable and efficacious in many circumstances. My guess is that cyborgian replacement therapy will become the mode for mortal human beings, and the human-machine synthesis will only be enhanced if mortals ever attempt to compete in longevity with truly immortal beings.

The human-machine lobby will probably attempt to dampen enthusiasm for immortality, but the growth of an immortality lobby will ultimately overwhelm resistance. I imagine that such a lobby will emerge rapidly once the first immortal mammals are produced. These mammals, probably sheep to begin with, will undoubtedly be generated for all the same reasons that clones are presently being generated - to perpetuate organisms with unique and valuable qualities.

If, for example, one would like to have a clone of sheep producing human clotting factor IX, one would like to have such sheep producing the factor in perpetuity. Inevitably, it will be cheaper to produce one or another factor from immortal animals than suffer the uncertainty and expense of producing mortal animals. I predict that the same commercial forces presently encouraging research on cloning will shortly be promoting research on immortality.

Frankly, I cannot imagine that the successful immortalization of other mammals will not be followed swiftly by pleas for the immortalization of human beings. The frustrations precipitated by the inevitability of

death presently confronting mortals will not go away, and will only be exacerbated by the immortality of other animals-our cousins.

Adjustments Required by Immortalization. No mortal can presently have any idea what life will be like for the immortals, the kind of social life the immortals will establish, or the society mortals and immortals will create. One can be sure, however, that initially the immortals' problems will seem endless.

Some problems can be anticipated and should be met with adequate prophylaxis. The genome of immortals would initially encompass a small part of the human genetic pool, a fraction of the biodiversity represented by human beings. Such a pool should be expanded as quickly as possible to offset the possibility of new diseases spreading rapidly among immortals. In the absence of adequate counter measures, new diseases might wipe out the first immortals in a single pandemic.

Other problems will be unforeseeable. Will the immortals bond together, identify with each other as a group, seek their own protection and mutual advantage in clans? Would the immortals perform the same sorts of antisocial behavior performed by mortals? Would the death penalty have to be invoked to "deter" murder by immortals? How would immortals deal with the death of mortal loved ones? Denied the comfort of going to paradise themselves, where loved ones are reunited, what comfort could be offered to immortals doomed to live forever bereft of parents, mortal siblings and friends - even immortals killed by accident?

Moreover, how will ordinary mortals react to immortals? Will mortals grant them "minority status" and attempt to suppress them. Will mortals objectify immortals and tend to place them in the category of artifact, "something manufactured" rather than a "natural human being" entitled to all the protections granted by law and permitted by fair play?

Contemplating Immortal Life. I may be worrying needlessly. Chances are, the immortals's problems will not be that different from ours. For example, pressure on traditional families and kinship structures will certainly continue following immortalization.

Immortal children will outlive their parents, and the problems of immortality will move on to the kinds of adjustments immortals and mortals will have to make to each other. Will this world of the immortals be recognizable to extant mortals? I have only a faint idea of just how different it will be, and can only offer conjectures about what

mortals, like ourselves, will learn from this new world-about ourselves and about immortals.

Probably, in much the same way that children have adjusted to talking toys and reasoning computers, immortal human beings will adjust to their situation and find new and novel ways to cope with their reality. My guess is that the immortals will make an adjustment to immortal life, while mortals will find it too cyborgian for comfort.

The World of Immortals. I should say something about what I think the world may look like to immortals. I approach this task with trepidation, not only because I appreciate how utterly speculative my opinion must be, but because I feel uncomfortable in the immortal's world as I see it. I imagine that the most glaring difference in the world of immortals in contrast to my world will be the experience of time in the sense of past, present, and future. Everything about life as I know it, having lived my life in a modern, developed, and still developing Western culture, is predicated on this sense of time, and it is precisely this sense will be radically different for people who live forever.

Instead of "living by the clock," time will be immaterial for the immortals. It will be infinitely accessible, neither running down nor running out. The difference will not be how an infinity of time affects the immortal's values - whether the immortals will be lazy by today's standards (I imagine they will acquire a work ethic through nurture, and will be as interested in completing tasks than we are) - but how an infinity of time will affect everything about perception and the experience of life.

In Western culture, time is ubiquitous. It permeates everything. Even language, our chief means of communicating, requires conjugation, and one can hardly conceive of a sentence in any European language (certainly English) that does not have time already built into it. For the immortals, however, time will be replaced by infinite duration, the present expanded to eternity. Even familiar terms, such as lifetime, will cease to have their familiar meaning. Rather than a finite duration, or a period before death, a lifetime will stretch outward forever from the beginning of consciousness.

Ordinarily, one believes one lives in the present because the transition of future and past passes through it without any bump. This passage will make no sense for the immortals. For the immortals, an infinite present will rupture the transition of future and past, or, put another way, the present will spread infinitely into the past and future.

And what about time's creations: mortal life and experience? Of course, the sun will rise on immortals just as it does on mortals, and immortals and mortals will feel its warmth. They will share the same admiration for a beautiful, bright day and experience the same joy at the coming of a verdant springtime. But the immortal's sun will not be the same as the mortal's sun, nor will anything else perceived by the immortals be the same as that perceived by mortals.

What is crucial to the difference in perception is that the senses will not define the present for the immortals. The senses will identify moments, and life for the immortals will be a cornucopia of sensory perceptions, but moments will not be recalled in seriatim, akin to the passage of time. When the present is no longer pierced by the arrow of time, by the coming future and the receding past, then perception will implode and time will disintegrate.

Time Without End. Here is where the world of the mortals will differ most sharply from the world of the immortals, because what a mortal perceives as movement, an immortal will perceive as time. And what an immortal perceives as movement, a mortal will perceive as time.

Ironically, the same physiology of persistence shared by immortals and mortals will present a barrier to communication and understanding - one that will be overcome only with utmost difficulty.

The persistence of senses may illuminate another difference between the world of mortals and immortals. For me, as for many others over 60 years of age, time has sped up acutely as it moves toward its one and only end. Memory thus changes, and, occasionally, a persistent remnant of an early experience comes thundering out of the past and back to life. It may even strike with its original force.

But the truth is that our present should not be defined as that which is more intense: it is that which acts on us and which makes us act. It is sensory and it is motor - our present is, above all, the state of our body. Our past, on the contrary, is that which acts no longer, but which might act, and will act by inserting itself into a present sensation from which it borrows the vitality.

The immortals will, no doubt, also have memory. But it will not speed up or slow down while life and time stand still. For the immortals, none of the faults and pains of memory that come with age will materialize. Immortality has its compensations.

At What Cost? It has never been my intention to pretend that immortality could be achieved without sacrifice. Beyond all the

problems of communication, the simple pleasures offered by birth, if not death, will be increasingly rare as more and more people enter the population as sterile immortals. Moreover, the preference some of us have for human diversity may not be rewarded as richly as it is today, since some human traits will, no doubt, not be represented among the immortals.

How the immortal humans will look and behave is a matter of conjecture, but some consequences of the indwelling generator would seem inevitable, most conspicuously, the morphological and physiological juvenilization of the immortals. Unquestionably, the immortals will be in unbelievably good physiological shape. They will be ballet dancers, gymnasts, and karate experts with great stamina and grace.

Immortals will not resemble the Eloi envisaged by H. G. Wells in *The Time Machine*, - fragile, easily fatigued, of slight stature, "a hairless visage, and the same girlish rotundity of limb." They will appear neither masculine nor feminine and remain sexually immature forever, but these side effects would not be handicaps in a society where everyone lives forever.

Under the new conditions of perfect comfort and security, that restless energy, that with us is strength, would become weakness. For such a life, what we should call the weak are as well equipped as the strong, and indeed no longer weak.

Forever prepubescent, the immortals will not suffer from the inevitable, deleterious effects of aging that follow sexual maturity, but unlike the rather dull witted, "five year olds" discovered by the Time Traveler in *Time Machine*, the preadolescent immortals will be in a perpetual "learning mode." They will be capable of acquiring languages flawlessly and without effort. They will never exhaust their mental potential, and will always be at their peak of poetic and mathematical creativity.

In other words, a world of immortals will be filled with intellectual excitement, and dedicated to creative enterprise. Even chronologically older immortals would not lose their intellectual edge, and society might very well return to esteeming the "ancients" without the biting edge of resentment.

Those spiritual and intellectual values which remain untouched by the process of aging, together with the values of the next stage of life [will no longer have to] compensate for what has been lost. Only if this

happens can we cheerfully relive the values of our past in memory, without envy for the young to whom they are still accessible. Furthermore, although immortals will not exhibit secondary sexual dimorphism, they will be polymorphous and will enjoy uninhibited preadolescent sexuality without the complications of pregnancy. In all likelihood, immortals will quickly evolve socially and spawn a culture without sexism, without homophobia, without stigma attached to sterility, and without the threat of a population explosion resulting from unrestrained sexual reproduction.

On balance, the cost of immortality would seem acceptable, and Homo sapiens forma immortalis should "live happily ever after." The biggest challenge would be convincing the remaining, adult Homo sapiens forma mortalis to permit, by and large, the disappearance of that part of their culture built on sexuality and reproduction. If Homo sapiens f. mortalis cannot be convinced to yield gracefully, I foresee a disastrous schism developing in the species.

***Adapted by the editor from a much longer and richer epilogue in Stanley Shostak, *Becoming Immortal: Combining Cloning and Stem-cell Therapy*. Albany: SUNY Press; 2002.**

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**DNA Can Be Influenced And Reprogrammed By Words And
Frequencies Russian DNA Discoveries**

The human DNA is a biological Internet and superior in many aspects to the artificial one. The latest Russian scientific research directly or indirectly explains phenomena such as clairvoyance, intuition, spontaneous and remote acts of healing, self healing, affirmation techniques, unusual light/auras around people (namely spiritual masters), the mind's influence on weather patterns and much more.

In addition, there is evidence for a whole new type of medicine in which DNA can be influenced and reprogrammed by words and frequencies WITHOUT cutting out and replacing single genes.

Only 10% of our DNA is being used for building proteins. It is this subset of DNA that is of interest to western researchers and is being examined and categorized. The other 90% are considered "junk DNA". The Russian researchers, however, convinced that nature was not dumb, joined linguists and geneticists in a venture to explore those 90% of "junk DNA". Their results, findings and conclusions are simply revolutionary!

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According to them, our DNA is not only responsible for the construction of our body but also serves as data storage and communication. The Russian linguists found that the genetic code, especially in the apparently useless 90%, follows the same rules as all our human languages. To this end they compared the rules of syntax (the way in which words are put together to form phrases and sentences), semantics (the study of meaning in language forms) and the basic rules of grammar.

They found that the alkalines of our DNA follow regular grammar and do have set rules just like our languages. So human languages did not appear coincidentally but are a reflection of our inherent DNA.

The Russian biophysicist and molecular biologist Pjotr Garjajev and his colleagues also explored the vibrational behavior of the DNA. [For the sake of brevity I will give only a summary here. For further exploration please refer to the appendix at the end of this article.]

The bottom line was:

"Living chromosomes function just like solitonic/holographic computers using the endogenous DNA laser radiation."

This means that they managed, for example, to modulate certain frequency patterns onto a laser ray and with it influenced the DNA frequency and thus the genetic information itself. Since the basic structure of DNA-alkaline pairs and of language (as explained earlier) are of the same structure, no DNA decoding is necessary. One can simply use words and sentences of the human language!

This, too, was experimentally proven! Living DNA substance (in living tissue, not in vitro) will always react to language-modulated laser rays and even to radio waves, if the proper frequencies are being used. This finally and scientifically explains why affirmations, autogenous training, hypnosis and the like can have such strong effects on humans and their bodies. It is entirely normal and natural for our DNA to react to language. While western researcher cut single genes from the DNA strands and insert them elsewhere, the Russians enthusiastically worked on devices that can influence the cellular metabolism through suitable modulated radio and light frequencies and thus repair genetic defects.

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Garjajev's research group succeeded in proving that with this method chromosomes damaged by x-rays for example can be repaired. They even captured information patterns of a particular DNA and transmitted it onto another, thus reprogramming cells to another genome. So they successfully transformed, for example, frog embryos to

salamander embryos simply by transmitting the DNA information patterns!

This way the entire information was transmitted without any of the side effects or disharmonies encountered when cutting out and re-introducing single genes from the DNA. This represents an unbelievable, world-transforming revolution and sensation! All this by simply applying vibration and language instead of the archaic cutting-out procedure! This experiment points to the immense power of wave genetics, which obviously has a greater influence on the formation of organisms than the biochemical processes of alkaline sequences.

Esoteric and spiritual teachers have known for ages that our body is programmable by language, words and thought. This has now been scientifically proven and explained. Of course the frequency has to be correct. And this is why not everybody is equally successful or can do it with always the same strength. The individual person must work on the inner processes and maturity in order to establish a conscious communication with the DNA. The Russian researchers work on a method that is not dependent on these factors but will ALWAYS work, provided one uses the correct frequency.

But the higher developed an individual's consciousness is, the less need is there for any type of device! One can achieve these results by oneself, and science will finally stop laughing at such ideas and will confirm and explain the results. And it doesn't end there. The Russian scientists also found out that our DNA can cause disturbing patterns in the vacuum, thus producing magnetized wormholes! Wormholes are the microscopic equivalents of the so-called Einstein-Rosen bridges in the vicinity of black holes (left by burned-out stars).

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These are tunnel connections between entirely different areas in the universe through which information can be transmitted outside of space

and time. The DNA attracts these bits of information and passes them on to our consciousness. This process of hypercommunication is most effective in a state of relaxation. Stress, worries or a hyperactive intellect prevent successful hypercommunication or the information will be totally distorted and useless. In nature, hypercommunication has been successfully applied for millions of years. The organized flow of life in insect states proves this dramatically. Modern man knows it only on a much more subtle level as "intuition". But we, too, can regain full use of it.

An example from Nature: When a queen ant is spatially separated from her colony, building still continues fervently and according to plan. If the queen is killed, however, all work in the colony stops. No ant knows what to do. Apparently the queen sends the "building plans" also from far away via the group consciousness of her subjects. She can be as far away as she wants, as long as she is alive. In man hypercommunication is most often encountered when one suddenly gains access to information that is outside one's knowledge base.

Such hypercommunication is then experienced as inspiration or intuition. The Italian composer Giuseppe Tartini for instance dreamt one night that a devil sat at his bedside playing the violin. The next morning Tartini was able to note down the piece exactly from memory, he called it the Devil's Trill Sonata.

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For years, a 42-year old male nurse dreamt of a situation in which he was hooked up to a kind of knowledge CD-ROM. Verifiable knowledge from all imaginable fields was then transmitted to him that he was able to recall in the morning. There was such a flood of information that it seemed a whole encyclopedia was transmitted at night. The majority of facts were outside his personal knowledge base and reached technical details about which he knew absolutely nothing.

When hypercommunication occurs, one can observe in the DNA as well as in the human being special phenomena. The Russian scientists irradiated DNA samples with laser light. On screen a typical wave pattern was formed. When they removed the DNA sample, the wave pattern did not disappear, it remained. Many control experiments showed that the pattern still came from the removed sample, whose energy field apparently remained by itself. This effect is now called phantom DNA effect.

It is surmised that energy from outside of space and time still flows through the activated wormholes after the DNA was removed. The side effect encountered most often in hypercommunication also in human beings are inexplicable electromagnetic fields in the vicinity of the persons concerned.

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Electronic devices like CD players and the like can be irritated and cease to function for hours. When the electromagnetic field slowly dissipates, the devices function normally again. Many healers and psychics know this effect from their work. The better the atmosphere and the energy, the more frustrating it is that the recording device stops functioning and recording exactly at that moment. And repeated switching on and off after the session does not restore function yet, but next morning all is back to normal. Perhaps this is reassuring to read for many, as it has nothing to do with them being technically inept, it means they are good at hypercommunication.

In their book "Vernetzte Intelligenz" (Networked Intelligence), Grazyna Gosar and Franz Bludorf explain these connections precisely and clearly.

The authors also quote sources presuming that in earlier times humanity had been, just like the animals, very strongly connected to the group consciousness and acted as a group. To develop and experience individuality we humans however had to forget hypercommunication almost completely.

Now that we are fairly stable in our individual consciousness, we can create a new form of group consciousness, namely one, in which we attain access to all information via our DNA without being forced or remotely controlled about what to do with that information. We now know that just as on the internet our DNA can feed its proper data into the network, can call up data from the network and can establish contact with other participants in the network.

Remote healing, telepathy or "remote sensing" about the state of relatives etc. can thus be explained. Some animals know also from afar when their owners plan to return home. That can be freshly interpreted and explained via the concepts of group consciousness and hypercommunication. Any collective consciousness cannot be sensibly used over any period of time without a distinctive individuality. Otherwise we would revert to a primitive herd instinct that is easily manipulated.

Hypercommunication in the new millennium means something quite different: Researchers think that if humans with full individuality would regain group consciousness, they would have a god-like power to create, alter and shape things on Earth! AND humanity is collectively moving toward such a group consciousness of the new kind. Fifty percent of today's children will be problem children as soon as they go to school. The system lumps everyone together and demands adjustment. But the individuality of today's children is so strong that they refuse this adjustment and giving up their idiosyncrasies in the most diverse ways.

At the same time more and more clairvoyant children are born [see the book "China's Indigo Children" by Paul Dong or the chapter about Indigos in my book "Nutze die taeglichen Wunder"(Make Use of the Daily Wonders)]. Something in those children is striving more and more towards the group consciousness of the new kind, and it will no

longer be suppressed! . As a rule weather, for example, is rather difficult to influence by a single individual. But it may be influenced by a group consciousness (nothing new to some tribes doing it in their rain dances). Weather is strongly influenced by Earth resonance frequencies, the so-called Schumann frequencies. But those same frequencies are also produced in our brains, and when many people synchronize their thinking or individuals (spiritual masters, for instance) focus their thoughts in a laser-like fashion, then it is scientifically speaking not at all surprising if they can thus influence weather.

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Researchers in group consciousness have formulated the theory of Type I civilizations. A humanity that developed a group consciousness of the new kind would have neither environmental problems nor scarcity of energy. For if it were to use its mental power as a unified civilization, it would have control of the energies of its home planet as a natural consequence. And that includes all natural catastrophes!!! A theoretical Type II civilization would even be able to control all energies of their home galaxy.

In my book "Nutze die taeglichen Wunder", I have described an example of this: Whenever a great many people focus their attention or consciousness on something similar like Christmas time, football world championship or the funeral of Lady Diana in England then certain random number generators in computers start to deliver ordered numbers instead of the random ones. An ordered group consciousness creates order in its whole surroundings!!!

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When a great number of people get together very closely, potentials of violence also dissolve. It looks as if here, too, a kind of humanitarian consciousness of all humanity is created. At the Love Parade, for example, where every year about one million of young people congregate, there has never been any brutal riots as they occur for instance at sports events. The name of the event alone is not seen as the cause here. The result of an analysis indicated rather that the number of people was TOO GREAT to allow a tipping over to violence.

To come back to the DNA: It apparently is also an organic superconductor that can work at normal body temperature. Artificial superconductors require extremely low temperatures of between 200 and 140°C to function.

As one recently learned, all superconductors are able to store light and thus information. This is a further explanation of how the DNA can store information. There is another phenomenon linked to DNA and wormholes. Normally, these super small wormholes are highly unstable and are maintained only for the tiniest fractions of a second. Under certain conditions (read about it in the Fosar/Bludorf book above) stable wormholes can organize themselves which then form distinctive vacuum domains in which, for example, gravity can transform into electricity. Vacuum domains are self-radiant balls of ionized gas that contain considerable amounts of energy.

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There are regions in Russia where such radiant balls appear very often. Following the ensuing confusion the Russians started massive research programs leading finally to some of the discoveries mentions above. Many people know vacuum domains as shiny balls in the sky. The attentive look at them in wonder and ask themselves, what they could be. I thought once: "Hello up there. If you happen to be a UFO, fly in a

triangle." And suddenly, the light balls moved in a triangle. Or they shot across the sky like ice hockey pucks. They accelerated from zero to crazy speeds while sliding gently across the sky.

One is left gawking and I have, as many others, too, thought them to be UFOs. Friendly ones, apparently, as they flew in triangles just to please me. Now the Russians found in the regions where vacuum domains appear often that sometimes fly as balls of light from the ground upwards into the sky, that these balls can be guided by thought. One has found out since that vacuum domains emit waves of low frequency as they are also produced in our brains. And because of this similarity of waves they are able to react to our thoughts.

To run excitedly into one that is on ground level might not be such a great idea, because those balls of light can contain immense energies and are able to mutate our genes. They can, they don't necessarily have to, one has to say. For many spiritual teachers also produce such visible balls or columns of light in deep meditation or during energy work which trigger decidedly pleasant feelings and do not cause any harm. Apparently this is also dependent on some inner order and on the quality and provenance of the vacuum domain.

There are some spiritual teachers (the young Englishman Ananda, for example) with whom nothing is seen at first, but when one tries to take a photograph while they sit and speak or meditate in hypercommunication, one gets only a picture of a white cloud on a chair. In some Earth healing projects such light effects also appear on photographs.

Simply put, these phenomena have to do with gravity and anti-gravity forces that are also exactly described in the book and with ever more stable wormholes and hyper-communication and thus with energies from outside our time and space structure. Earlier generations that got in contact with such hypercommunication experiences and visible vacuum domains were convinced that an angel had appeared before them.

And we cannot be too sure to what forms of consciousness we can get access when using hypercommunication. Not having scientific proof for

their actual existence (people having had such experiences do NOT all suffer from hallucinations) does not mean that there is no metaphysical background to it. We have simply made another giant step towards understanding our reality.

Official science also knows of gravity anomalies on Earth (that contribute to the formation of vacuum domains), but only of ones of below one percent. But recently gravity anomalies have been found of between three and four percent. One of these places is Rocca di Papa, south of Rome (exact location in the book "Vernetzte Intelligenz" plus several others). Round objects of all kinds, from balls to full buses, roll uphill. But the stretch in Rocca di Papa is rather short, and defying logic sceptics still flee to the theory of optical illusion (which it cannot be due to several features of the location).

All informations are from the book "Vernetzte Intelligenz" von Grazyna Fosar und Franz Bludorf, ISBN 3930243237, summarized and commented by Baerbel. The book is unfortunately only available in German so far. You can reach the authors here:

**[www.fosar-bludorf.com]
[2]; Transmitted by Vitae Bergman
[www.ryze.com/view.php?who=vitaeb]
[3]**

===References:===

- 1. <http://noosphere.princeton.edu/fristwall2.html>**
- 2. <http://www.fosar-bludorf.com>**
- 3. <http://www.ryze.com/view.php?who=vitaeb>**

<center>

**

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**-----
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OK Jesus was a virgin

that was how Jesus was powerful

and good , other famous virgins,

and Celibates include

Mother Theresa

Isaac Newton ,

I

Queen Elizabeth I

Rome's vestal virgins ,

the Essenes Jews

and American Shakers and Apostles

and most of the saints and holy souls

sadly the most evil man in the world

Adolph Hitler was proportedly a Virgin too

the power of virginity can be turned to evil also

old post

The Shroud of Turin is real ,

and an old Photograph

Heat created the image ,

Was Jesus in a Coma ?

**the torture of Jesus it was people's evil arousal that killed him
after Jesus tipped over the money changer's bench at the temple**

blame it on organized nudity

people a real security from death

a preservation box and crypt

for hope in a medical resurrection not fairy tales

The Above is a blinking model of Jesus of the Shroud

(God visited me in June 2001 right after I told God I could NOT go to heaven for one million years

because I would fight with God

I asked it how long it had been here (the world)

it said THE WHOLE TIME

and it left

like it was decribed in Revelations Chapter 4 vs 1-6

is this my pic on this thing?

Modern Pagan Rome , Holy Rome now Robot's Rome ?

you can download free text to speech software at

READPLEASE.COM

**

No one is better than the Bodhisattva in bed.

A bodhisattva is an enlightened being who having no further need to be reincarnated into the physical, decides to do so to help others achieve enlightenment.

The point of giving her sexual pleasure is to awaken the bliss that she will then combine with meditation on emptiness in order to attain enlightenment. - Miranda Shaw, Ph.D. Passionate Enlightenment: Women in Tantric Buddhism - (Princeton University Press)

SURRENDER

The paradox of sex is that the same act can both liberate and imprison, depending upon one's intent, state of mind, and conditioning. Sex can drive you either towards or away from Enlightenment. The great enigma is, how can we transform the trap of addictive physical appetite to the ecstatic realization of Divine Union?

It all depends on your true and underlying purpose. It calls for constancy and commitment to the ultimate goal of Enlightenment. Why is the divine gift of lovemaking so often little more than a desperate groping for glandular stimulation in dark rooms, accompanied by feelings of hunger and shame? Ironically, and all too often - when people use each other uncaringly - this most universally accessible mystical experience of orgasm is debased into something dishonorable and dirty. But anti-sex admonitions in turn only give rise to guilt, when - despite heroic efforts to curb our "lower appetites" - we find ourselves indulging in what is, after all, the single most compelling human urge after breathing and eating. We might even say that repression of this primal biological imperative creates rapists and pedophiles.

Shame is taught by "authorities" who can embrace neither their animal nor their spiritual nature. They fear one and fake the other, and call this "correct." Certain religions contend that sex must be solely for insemination and procreation, or it is devil-worship. By that logic, one should certainly refrain from using one's hands (not to mention lips and tongue), and get it over with as quickly as possible. Obviously the Good Lord made this procreational pleasure-drive far more powerful than most individual's (and any church's) power to control.

A truly relevant and realistic religion would teach us how to consecrate our sexuality, not deny it. We need to unlearn our guilt about wanting sex, even as we realize what a gilded cage it could very well become. Of course men and women compromise their morality and good judgment all the time for sex (although probably no more than for love, money, power, or fame). But the inherent dangers are hardly reason to avoid the experience. Respect for that very danger should make us take care as we take pleasure. Let us celebrate and make sacred our natural, innate sexuality. Copulation as high communion? Is there any better way?

SEXUAL SPIRITUALITY

Many in today's generation are beginning to re-learn the sacred approach to lovemaking, as in indigenous tribal customs, mystical rituals, Sufi and tantric couples practices, and post-sexual-revolution "high monogamy." Cultures much older than ours have evolved ways for seekers to include their physical bodies within the context of spiritual practice and the enlightened life. Meditation, invocations, breathing exercises, incense, candlelight, ceremonial objects, rituals, music, and potent libations have been used to create a special environment and mind-state in which to sanctify sexual union. Such careful preparations tend to quiet the neurotic mind and increase sensitivity and sensuality, while at the same time engendering the proper reverence.

The essence of this conscious sex approach is to transform the very energy of your appetite for personal pleasure into one of cosmic realization, by harnessing your own desire to the happiness, the thrill,

and the total fulfillment of your partner. Thus you achieve Unity through duality, by making her (or his) ecstasy your own. Giving and taking merge, and you two become One. The transformation from ordinary mechanical, confused, guilt-ridden sex to the profound gift of natural/spiritual lovemaking depends upon a broadening of one's focus from the genitals to the heart, from passion to compassion.

Spiritualized sex opens you at all centers at once, animal to divine. Transcendent love is a religious experience. Every touch is The First, and time stands still. The senses are magnified a thousand times. Your partner becomes a Goddess or God, whom you worship in awe. You notice everything, and it all conveys tremendous meaning and potency. Foreplay is truly playful, breathtakingly tender. The pleasure is immediately and continuously perfect, the passion intense and profound. Time itself disappears and the Holy Universe becomes self-evident. Opening all your centers, engaging all your faculties, the animal/emotional/spiritual crescendo of love lasts forever, and the climax is an exquisite release of the body, the heart and the soul in a spectacular shared revelation of the Universal Self. The after-glow of such a cosmic physical union endures for days.. weeks. The experience is healing and unifying in every way.

HOW TO MAKE ENLIGHTENED LOVE.

- * Consecrate the setting. Make it Holy.**
- * Wait for the perfect moment.**
- * Purify yourself in body and mind.**
- * Meditate.**
- * Dedicate the experience to your highest purpose.**
- * Invoke the Goddesses of Love.**
- * Begin motionless and in silence.**
- * Gaze into each other's eyes, long and deep.**
- * Breathe together.**
- * Fall in love. stay in love. die into love.**
- * Listen for Inner Guidance.**
- * Reside always at the beginning.**
- * Move in slow motion, with reverence.**

- * **Worship your lover. Touch only in awe.**
- * **Trust your body's deepest impulses.**
- * **Give voice to your feelings.**
- * **Make love with your whole being.**
- * **Transpose taking and giving.**
- * **Decelerate until time stands still.**
- * **Abandon all gain and control.**
- *

Die as a personality. Be born as pure Love in the Universe.

EXQUISITE LOVE

To lose the self in love, look always to the beginning and keep to the beginning. Worship each other's pure essence as Goddess and God. Everything matters.

Use all senses Read your beloved's mind/body.

In slow motion abandonment of time itself, Give only pleasure and love, letting hers become yours, ours.

Surrender continuously, unconditionally, to the sacred fire within, all consuming, all purifying, all fulfilling.

**<img
src=http://www.antoineart.com/photos/nude_figure_photography/images/nude-embrace.jpg>**

From "Enlightenment in Our Time." by Lonny J. Brown, Ph.D.

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The Tao of Celebacytopic posted Thu, August 4, 2005 - 10:17 AM by Sobey

Advertisement

Having taken a vow of celebacy for a while I am seeing Taoist sex practices as a timely thing to deepen and assist me in managing sexual energies as they rise. I learned the belly-butt breath from a taoist sex practice coach once which is useful for handling excess energies.

To do this one gets into standing shoulder width apart with bent knees and then pushing down with hands to push out excess energies with a "pah" sound. This is repeated as necessary. I find it helps tonnes.

If anyone has any tips they use during times of celebacy i'd love to hear them.

s.

posted by:

Sobey

Canada
1091 friends

join to post
davi...

222 Re: The Tao of CelebacyThu, August 4, 2005 - 10:49 AM
hi sobey,

i'm curious... what does a vow of celebacy actually entail?

does this mean you have vowed not to engage in all sexual activities including selfplay?

how does such a vow work? is it for a specific amount of time or until you feel like it or...?

thanks,
join to post

mourad

20 Re: The Tao of CelebacyWed, August 10, 2005 - 12:26 AM
in the past year i can count with my fingers how many times i have ejaculated. i have been able to go comfortably up to two months at a time without ejaculating.

i did not eradicate my self-play. what i did was alter it completely from the way it used to be. whereas self-play used to be a release, it was now a sort of exercise, where i would not ejaculate but would instead observe myself and my actions, reactions. after this i would always massage my testes and the whole penis area, with special focus on massaging out all the excess energy in the root.

lately, apart from simply becoming easier to withstand, i have been cutting out on the self-play. but this had to do in part with finding a partner for myself. my partner knew about my practice before we got too deep in the relationship.

as for benefits, to me they are obvious. i can feel stronger, lighter and clearer. also, worth mentioning is the magnetism it brings and health. i haven't felt better.

peace.

m

join to post

JC

59 Re: The Tao of CelebacyWed, August 10, 2005 - 9:46 AM

Speak more on the magnetism Mourad... this is not something that I've observed as a part of this practice though many speak of it. I've found more magnetism from other sources...

join to post

davi...

222 Re: The Tao of CelebacyWed, August 10, 2005 - 10:12 AM

mourad, your practice and benefits are nearly identical to my own.. tho i've had a partner through this but since we don't see each other that often, i've had plenty of time to practice on my own.

yeah.. i know exactly what you mean about the magnetism.

JC, i believe you are on the cabalah techniques tribe.. but if not... you might check it out as it deals exactly with this magnetism or synchronicity.

join to post

JC

59 Re: The Tao of CelebacyWed, August 10, 2005 - 12:03 PM

Thanks David... sounds interesting but I'm not sure what you mean.

Could you provide a direct link? (URL?)

join to post

davi...

222 Re: The Tao of CelebacyWed, August 10, 2005 - 12:21 PM

you bet,

shininghands.tribe.net/
join to post

AJ

17 Re: The Tao of CelebacyWed, August 10, 2005 - 2:54 PM

I'm confused about your use of 'magnetism'. Surely you're not talking about having to brush iron filings off your unit all the time.

?

join to post

JC

59 Re: The Tao of CelebacyWed, August 10, 2005 - 4:45 PM

Well, um, actually yes... and the worst case is when you walk into a kitchen store and all the pots and pans start flying right at you!

join to post

mourad

20 Re: The Tao of CelebacyFri, August 12, 2005 - 9:05 AM

magnetism, what did i mean? ok...

we are talking here of energies and vibrations. higher vibrational energies are attracted to similar energy levels. through magnetism i mean that i am able to attract toward myself energies similar to my own.

i was reading a lot in tantra books, and similar, that someone who practices a spiritual way like tantra (as example) should try to find a partner who is a similar stage in their spiritual development. it would be awkward, at least, if a master yogi were to practice with someone who has no idea or interest in tantra. see where i'm going?

these energies, being all around, are in a cosmic dance. when i practice and purify and raise my energies, I also attract similar energies to myself. this is what i consider my magnetism, although it is not limited only to this. magnetism also is exactly what its name means. i know from my personal experience that the more i practice and stay in touch with myself the more magnetic my Being is. when I feel spiritually high and in touch, i watch in awe as everything i need and search for crosses my path and right before my eyes. this is magnetism. like magnets.

sometimes a magnetic draw is so intense that there seems to be no way to stop (for example) to people from meeting, if they really need to meet.

peace.

m

join to post

Star

89 Re: The Tao of CelibacyTue, August 16, 2005 - 7:11 PM

i see no women have posted on this thread, but i was celibate for over 12 years fully with only occasional self play. It was not always a conscious spiritual practice, though it became that for me, and it became a "seed time" when i changed and transformed to the fullness of my self intellectually, emotionally, physically, spiritually and sexually. i am amazed even today at my continuing development, though when i first really became "aware" i looked at the celibacy as a kind of handicap, with sadness. What i realize is that, yes, it was a kind of death, but the death of my shadow self into the Light of consciousness, the birth of my self from the shadow into Reality of being. Namaste and in humility, star.

join to post

star...

153 Re: The Tao of CelibacyWed, August 17, 2005 - 9:47 AM

thanks for pointing that out star, i though it was strictly directed towards male celibacy, altho i'm not too sure if there is a difference...i don't have a penis :-)

i personally do not like to practice celibacy. i feel that when i do my creative process is cut off, stifled. then i feel blocked.

altho i've found other ways to release it, like through movement and dance, and creating art when i needed to. energy cannot be destroyed it can only be changed...into something else. it can also be stored...but i prefer not to do that as it really does cause blocks in me, especially my muscular system.

but then again it all depends on why have sex in the first place. for me, personally speaking, sex is a result of a creative or intimate experience

that asks to be honored by it. it's not a selfish thing, does not belong to me, it just flows through me, empowering the moment and myself and partner.

i've known people who have fasted for weeks and people who have engaged in celibacy and altho it seemed to have strenghten their discipline i can also argue that it did the exactly opposite! it made them unnaturally obsessed with it and unhealthy in mind and emotions, yet they kept denying it.

i am somwhat divided on this subject and will leave these thoughts:

- to attain balance sometimes it's necessary to add or subtract whatever element we are missing in the equation.**
- there is a law of overcompensation (for example: acting out something to the extreme because they are overcompensating for exactly the opposite)**
- other times energy just needs to be released, set free, let go of. holding something for too long can become stagnant and toxic! release brings clarity and a healing reaction.**

blessings.....

join to post

Dan

**14 Re: The Tao of Celebacy Wed, August 17, 2005 - 11:30 AM
I was reading through a random tantra book and the author had a curious spin on the urge for sexual activity.**

Instead of it being a need to express (accomplishable in other ways), or a need to stimulate (also other ways) or procreate (.0001% of the time), it's a need for maleness or femaleness.

Our state of being (not our gender, as exhibited by homosexual, and more creatively gendered relationships) tends to be imbalanced in certain ways. This imbalance will promote a desire for balance, which desires some flavor of maleness/femaleness, or to break from the dichotomy, some flavor of presence.

In the Indian tradition, a male's ojas is depleted with each ejaculation. Lower levels of ojas deplete radiance, over-all energy and spiritual aspiration. Taoist practices just make sense, if this is true.

But celibacy denies the sexual outlet for natural energy balancing. And I don't think anything's wrong with that, if you are living an exceptionally balanced lifestyle, with an abundance of presence (maleness or femaleness as needed) from the inner, or socially platonic experience.

I experience this at times.

And at other times I experience a beautiful, intimate relationship where my partner and I exchange the role of providing for the other's energetic needs through sexual contact.

Like EVERYTHING in life (I hope this may aid your inner wisdom in healing your division Star), the act itself has no essence. The essence is in the impetus (the attitude, the angle, the idea, everything from the VERY beginning, the BIRTH of the direction).

So sure, some people engage in celibacy and they don't find any solutions. No clarity. They may re-examine their intentions and find a release. Which provides a starting over. Fresh ground on which to plant a new impetus.

And this same process is true for those in sexual engagements.

I read somewhere that the fault of femaleness is not being able to "let energy go", and the fault of maleness is not being able to "keep it in."

Anyway, all this dichotomy, celibacy/sex, male/female, gobbledygook is silly.

Every decision has repercussions. Every intention has a path.

It's only to ourselves that we know whether or not we are acting in the name of ultimate freedom and the greatest good, or not.

**whew, I'm happy about that.
join to post**

**This is the maximum depth. Additional responses will not be threaded.
star...**

**153 Re: The Tao of Celebacy Wed, August 17, 2005 - 12:40 PM
hi dan, there are two stars here, to whom are you referring?**

**what i meant by division, if you are indeed speaking to me and i have
not made my reply clearly, is that i'm divided on my views on 'this
topic' as i see 'both sides' of it:
the benefits of celebacy and the non benefits**

**...i think these depend on where the person who seeks the practice is
coming from and what they want to accomplish through it.**

**i will however dissagree that and act itself has no essence. an act is an
action...no matter how small, it is a vessel that carries the essence within
it.**

**an action has energy behind it even if the parties involved, or one of
them, are not presently aware of it...where and how the energy is
directed is a totally different thing all together in the sense that it can be
chanelled here or there...or nowhere....but the energy is still there where
there is an act of any kind.**

**and to make it even more complicated, even in stillness there is
action/motion.**

**simply speaking on a primal physical level now, heat energy is created
by rubbing two things together. it does not need some great spiritual
understanding of it - it is moving, and action.
essence simply seeks a vessel, a pathway, be it physical or spiritual.
you can harness it or you can channel it...or you can ostain from it.**

**also not sure about the 'women not being able to let go' of energy
statement. i can't speak for all women, but i have a hard time with**

exactly the opposite of this....currently a long monogamous relationship has been teaching me about that aspect of myself and a lifetime of poly. for those naturally poly, rather than naturally releasing and transforming is quite a lesson in itself...and i've been learning lots about myself through it - avenues and pathways of my psyche i would not explore otherwise or have the chance to explore. :-)

i don't know how celebacy would aid in that exactly, 'if' the goal of celebacy is to abstain from that energy all together.

blessings.....

join to post

Dan

**14 Re: The Tao of Celebacy Wed, August 17, 2005 - 2:13 PM
Oo, sorry Fish, I meant you.**

If you see both the assets and the liabilities of something, than you aren't divided by it. It's merits are clear to you, and you will use it appropriately.

<<i will however disagree that an act itself has no essence. an act is an action...no matter how small, it is a vessel that carries the essence within it.>>

I bet we'll agree to disagree here on this one. If anything, I see the essence carrying the act. Acts are byproducts of essence.

<<and to make it even more complicated, even in stillness there is action/motion.>>

"Stillness," for me, is a buzzword that implies "connection to essence." I don't think anyone could ever experience real stillness, for obvious reasons relating to the physical nature of our universe.

<<essence simply seeks a vessel, a pathway, be it physical or spiritual. you can harness it or you can channel it...or you can abstain from it.>>

Yes!

<<i don't know how celebacy would aid in that exactly, 'if' the goal of celebacy is to abstain from that energy all together.>>

My celebrate periods have been to experience the finest essence of that energy, and to engage in a lifestyle of self-respect and self-worth worthy of that fineness.

**Of course, people come up with as many goals for celebacy as they do for wearing make-up.
join to post**

star...

**153 Re: The Tao of CelebacyWed, August 17, 2005 - 2:33 PM
hi dan! good differences! :-)**

could you explain/clarify about 'the essence carrying the act' and why you view acts as a byproduct of essence?

are you speaking of a re-action?

and when you mean 'essence' do you mean the energy or the semen/fluids exactly?

**i'm just curious :-)
join to post**

Dan

**14 Re: The Tao of CelebacyTue, August 23, 2005 - 2:02 PM
Hey Fish,**

Consciousness underlies all phenomena. All phenomena is an outgrowth of consciousness.

The entire phenomenal universe from the STUFF (stars, planets, trees, tribe.nets) to the ACTS (big bangs, novas, childbirth, typing, thinking) all comes as a consequent of consciousness.

Theoretical physics, as well as the various mystical traditions of the world, both speak to the necessity of an "observer" for phenomenal experiences to actually "occur" in "reality."

Without an observer, as proven by Young's Double Slit experiment, ranges of possibility remain just that, a range of possibility, with no specific phenomenon "pinned down."

For me, that shows the arbitrary nature of all phenomenon. People just decide how things make them feel, or even, what things are at all.

This is captured in such pithy ageless wisdom as "You see what you want to see," among many many more cliches.

So, in essence, all forms of communication (including communication with oneself, such as in "scientific" observation) are bound by the rules of relativity, and require an agreement on basic terms.

But that very agreement is all bound up in relativity! We can't ever be certain we're meaning anything to anyone else the way we intend it! They're getting out of it whatever THEY want.

Most people can recognize this, after having been through experiences with others during difficult emotional times.

But, in the end, all acts turn out to be devoid of any "implicit" meaning.

A shrug... is just a shrug. A nod is a nod. A shake is a shake. A middle finger... just a middle finger.

They don't mean ANYTHING.

And even when someone means RUDENESS to you with a middle finger, you pick up whatever YOU put into it.

Now, I'm not saying we stop endeavoring to understand each other, or stop encouraging each other to express ourselves and communicate. It's not futile.

Nor am I saying we should live in some fantasy land and just LOVE everything and everyone and see and give only LOVE LOVE LOVE LOVE LOVE.

I'm saying, given this psychologic dynamic to our situation, it is that much MORE important for us to put more time and patience into understanding each other wholly, and learn how to grow up and take care of our own needs gracefully, in order to have a real interaction untainted by our own mind's desires.

This, and to deal with every moment with maximum lucidity. Really inquire into what's there, and allow it to fully be and share its message. Allow the roadblocks to bliss, that is, REAL transformational joy, to LET GO OF US, rather than constantly fighting with them, propogating the illusion that we have any semblance of control over them.

And then we have even more connection with 'essence.'

Which is probably why we had sex, became celebre, or for that matter, took our first breath in the first place.

join to post

star...

**153 Re: The Tao of CelebacyTue, August 23, 2005 - 5:58 PM
thank you for the awesome explanation.**

i see your point of view -

but to me it's like who came first

the chicken or the egg?

(on a bit off topic here i think it was the egg cause birds supposingly evolved from lizards! ;-)

i still don't think that an act has no essence.

why seperate the two?

an act comes from a motivation, which has essence

there is a great deal of responsibility on both

the person acting it and the person receiving it

**i don't think that it's only up to the person receiving information to be responsible for it
the person putting it forth should be aware of it too -
that way the act has essece and essence has act because it was decoded the way it was sent out
(the reverse of the broken telephone game)**

it takes a hell of a lot of unprogramming and reprogramming to speak the same language, or to at least understand each other cause english is so messed up, but we have a great, undying thrist to relate to one another on this planet, so it's all good! ;-)

i think we are really off topic here tho. sorry, didn't mean to hijack.

join to post

toit...

100 Re: The Tao of CelebacyFri, August 26, 2005 - 2:21 PM

I wonder, in circles where emotional involvement is seen more as a henderence than a blessing of sacred union, what is the objective purpose in tantric practice? This to me seems all rather cold and mechanical, but it is never the less a popular notion brandished about many tantra tribes. As for the spiritual practice of observing celibacy for any length of time one is almost affraid to admit to such a practice as it is typified right up there with all the negative notions attached to the idea of what it means to be free of thought, awake in the present moment or God forbid enlightened.

As far as I can tell there are at least two distinct forms of awakening there is the A. Crowley tantric sex magick trip and then there is the path of so called

immortality as put forth in taoism.

The question is do these lead to the same place? Is it the same present moment awareness or is this some place different?

I agree with the 'Talking Heads', I've seen sex and think it's Ok. We are creatures of love. And yet through tremendous hardships I have found that long periods of abstinence does create a space in clarity that could not exist otherwise and there is always that magnetic thing to contend with, when you tend to glow for no apparent reason. Who wants to stand out in crowd. Yea it is an energy that should be channeled to good use if you intend on storing it up. The longest I've ever gone was eight years, it is a long story.

"In substance they are always calm, like a lake without waves; in function they act like water, which conforms to its environment. Their calmness does not reach the point of losing mindfulness, and their activity does not reach the point of straying from essence. There is consistency about thier movement and stillness, adjusted appropriately according to events, not restricted to a single pattern. When the time comes to stop, they stop; encountering danger, they deal with it. When the time comes to go on, they go on; getting out of danger, they do not bring on danger. Going along with the time, they deal with everything unminding, and therefore can get beyond yin and yang, not being constrained by yin and yang.

"This is because heaven and earth can coerce what has form, but not what is formless; can coerce the minding but, but not the unminding. Discipline is not according to mind but according to the time; this is called discipline according to

the time. It is like the sections of bamboo; each section has a boundary, each section has a passage. In this way, how could one fail to develop?"

Taoist I-Ching

"He who bends to himself a Joy doth the winged life destory; But he who kisses the Joy as it flies Lives in Eternity's sunrise."

William Blake

**Happiness in an inner circumstance.
join to post**

Joey

**1 Re: The Tao of CelebacySun, September 11, 2005 - 7:54 PM
Here are some things about celibacy I've picked up in my Qigong studies. I make no claim that this is the one and only authoritative truth on the subject, so please do your own verification before taking any of this as the truth. If you want, I can point you to some sources I derived this from.**

- The name of the game is preserving Jing (essence). You slowly "burns up" Jing as your body produces chi, but you lose a good amount of it during orgasm, menses, and childbirth.

- Celibacy is a great way to hold on to your Jing, but you need to engage in the right cultivation practices (e.g. Yoga, Qigong, etc.). If you simply go celibate and don't cultivate the stored jing, which results in increased chi levels, you could actually cause a dampness or stagnation condition in your body. This could have a physiological and emotional impact.

- Jing has to be released. Women are forced to release some during menstruation, which should coincide with every lunar cycle. Men are forced to release some at a regular interval (which I can't seem to remember) even if they don't ejaculate. It will simply come out during night emissions or in the urine.

- Conserving Jing is a valuable practice and can increase one's vibration level, as described elsewhere in this thread. This is especially true if the right cultivation techniques are used with it.

- Joe
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The Importance of Initiating Contact with Extraterrestrials

thanks Dalibor for posting this:

Did you know: Cosmic Radio Signals can be polarized at 91mhz (fm); 160mhz (vhf); 610

mhz (on channel 78uhf-tv) by keying a cb microphone over a radio receiver set on these radio channels with your home equipment. These are known cosmic radio sources from outerspace from

Annual Review of Astrophysics and Astronomy 1966 editor Leo Goldberg.

Facts : A lot of the static snow that you receive is your non cable

uhf tv; is cosmic radio signals.....many elements naturally emitted

radio pulses when excited;

You can polarize these signals with CB radio Microphone

by keying the transmitting CB microphone over the speaker of a

receiving radio set at 91 mhz..(91fm)..160 mhz..(160 vhf radio)..and

transmit the spacey sound you hear to a receiving TV set at channel

78 UHF tv.....then you will see a ATT type of symbol..and see the

oscillations and fluctuations of the cosmic radio signal that has

been just polarized.....personally I think 160 vhf radio.....is

artificially generated.....since it oscillates odd.....if intelligent

life has learned to generate radio signals within our galaxy....the

odds are in our favor.we are receiving them.as they receive our

**signals from 50+ years ago.....that energy is
bouncing off our**

**heads now. I have recieved a strange CBS eye symbol
on my TV after I**

**did this, It wasn't CBS's thought..it was gold on the
edge, with a**

**green center eye and purple round about the eye..but
for this**

**happened a circular rainbow image formed.then out of
the cloud the**

**CBS eye appeared.the eye looked like a lizards
eye.....real spooky.I**

**called CBS in NY, and they don't know why they pick
that symbol..(~)**

**after some research.there was a " CBS" electron
gun.made for TV**

picture tubes in

**the 1950's..so maybe back in the early days of
television..tv**

engineers must have recieved this same signal.

Cosmic Magnetic Force and God Bless You

you most likely have the equipment now

you need a CB radio

a non cable tv

and a fm radio or vhf radio

turn everthing on..key the cb radio mic over the speaker of the fm radio set at 91 mhz or vhf radio at 160 vhf...turn the tv on to about channel 78...keep them all close by within 6 ft

then you'll have polarized the cosmic signals at 91 mhz or 160 mhz

----- Bulletin Message -----

**From: Dalibor
Date: Nov 30 2006 6:30 PM**

Thank you brother David

**The Importance of Initiating Contact with Extraterrestrials
By Angelika Whitecliff**

Initiating contact with ETs is not in and of itself necessary for one's own spiritual advancement. With that stated, there are several reasons why this particular subject is extremely important and I will take this opportunity to discuss a few.

The first looming issue is that there is a vast interaction taking place upon this planet between

humans and different ET groups. But why has there been perpetrated such a through job in maligning, debasing and dismissing almost all of the contactee accounts that report respectful, non-invasive and benevolent interactions, especially with humanoid beings who only promote our own spiritual growth as our real salvation? It is difficult to find such contactee books in our country (not as true in other countries such as Germany, Italy, Mexico and South America) and the media ignores these stories. Instead it cleverly peddles cases of abduction, terror and avid manipulations to promote fear, confusion and finally numbness and non-action. People are skillfully schooled toward a victim mentality in this way.

People not only need to be made aware of inspiring and uplifting cases that are happening now, such as the Sixto Paz Wells contacts in Peru, but people need to understand that the choice is theirs to put energy into creating more abduction coverage or to instead put this energy into opening the door wider for positive experiences to come through on all levels. Initiating empowered contact is one path to opening this door. We do not know many of the ET players yet, but we do know more than enough to begin our own journey of benevolent contact.

A second reason why the action of initiating contact with ETs is of considerable merit is because of the number of starseeds currently incarnated on this world. Not all but many feel a sense of loneliness or loss because of their seeming separation from those they once knew as a beloved family. (Generally - wherever the majority of your incarnational time is spent, at least until you obtain a significant enlightened mastery as a being, this is where you will identify on deep levels as home.) So there is a great longing in many hearts. Calling in your deepest star

family connections can be a powerful way to heal that inner rift and to create a bridge of support that can serve your spiritual goals as well as those of the planet.

Third, there are many paths to enlightenment and higher understanding. A spiritual master, such as an eastern guru can open your third eye for you to expedite your path. This is not necessary to achieving the goal, but many individuals seek out gurus and adepts to help them on their path because they can offer help in some form. There are spiritually advanced races here that can assist in the same way if you desire and accept this sort of assistance. They can act like an older brother or sister who is a little farther along the path. Because they have traveled the very path we are now on, they can hold up a light to illuminate the darkness of the unknown that we are entering. Again, this is not necessary, but it is available and the choice is ours to accept assistance or not.

There is the threat of mind control, black projects, alien abductions, this list goes on and on. How can people win a game so rigged? The answer is that through dedicated self-exploration; meditation and a personal commitment to the discipline of becoming one with your 'true' self. All these threats lose energy and are eventually rendered powerless as you connect with the one universal force, the divine oneness. Yet you do not have to be on the verge of achieving this ultimate goal to be safe, all you have to do is begin walking this path of refining your own energies and not look back. Your internal commitment will guide you to safety from within. Non-action, apathy, depression, a judgmental & dismissive attitude all leave you very vulnerable to the regressive energies.

GalacticDiplomacy.com is dedicated to the idea of empowered citizen based interactions with extraterrestrials. Many people come to this arena of information because they feel 'contact' is important to their lives in some way. For such people who are passionate about this field, for those who need to overcome experiences of feeling victimized by ETs, for those who know that this work is part of their individual purpose, and for many other reasons, this vision of initiating contact with benevolent ETs can be a valuable individual experience and manifestation for the planet.

We all can help each other and the planet by holding to our dreams of a better world and by doing something, anything, to help our vision manifest. Many who visit this web site will be the pioneers and courageous leaders who will actually create experiences of empowered and mutually edifying exchanges with our ET friends. In no way does this interaction have to remain upon the fringe or characterized by trauma or genetic engineering programs. When committed individuals and groups get together to promote a new vision, a better way, this influences our reality and offers hope and inspiration to others. This is how we step by step create a new system, one to replace the current one which does not express our highest expression of light and love upon this world.

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Outerspace .**

Polarization of Cosmic Radio Signals

Not only do we receive light photons from stars but we also can receive radio signals , like 91 mhz (91 FM radio) and 160 mhz (160 VHF radio near the old national weather channel) are Cosmic Radio Signals , 160 mhz could be artificial , to polarize cosmic radio signals , tune a radio to 91 mhz (91 FM radio) or 160 mhz (160 vhf radio) then if you have a CB radio , turn it on and key the microphone over the cosmic radio channel (91 mhz / 160 mhz and others) then you will hear spacey sounds , that sound like the original Star Trek , med scanner ...the engineers of Star Trek must have recorded those spacey sounds and used them on the show..

These Are Some amazing Pictures I found and the explanations for them below each picture. I find their cosmic beauty should be shared...Enjoy! :-)

Go Here to see many more!!!

<http://antwrp.gsfc.nasa.gov/apod/archivepix.html>

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Saturn at Night

Credit: Cassini Imaging Team, SSI, JPL, ESA, NASA

Explanation: This is what Saturn looks like at night. In contrast to the human-made lights that cause the nighttime side of Earth to glow faintly, Saturn's faint nighttime glow is primarily caused by sunlight reflecting off of its own majestic rings. The above image of Saturn at night was captured in July by the Cassini spacecraft now orbiting Saturn. The above image was taken when the Sun was far in front of the spacecraft. From this vantage point, the northern hemisphere of nighttime Saturn, visible on the left, appears eerily dark. Sunlit rings are visible ahead, but are abruptly cut off by Saturn's shadow. In Saturn's southern hemisphere, visible on the right, the dim reflected glow from the sunlit rings is most apparent. Imprinted on this diffuse glow, though, are thin black stripes not discernable to any Earth telescope -- the silhouetted C ring of Saturn. Cassini has been orbiting Saturn since 2004 and its mission is scheduled to continue until 2008.

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Colorful Moon Mosaic
Credit & Copyright: Noel Carboni

Explanation: No single exposure can easily capture faint stars along with the subtle colors of the Moon. But this dramatic composite view highlights both. The mosaic digitally stitches together fifteen carefully exposed high resolution images of a bright, gibbous Moon and a representative background star field. The fascinating color differences along the lunar surface are real, though highly exaggerated, corresponding to regions with different chemical compositions. And while these color differences are not visible to the eye even with a telescope, moon watchers can still see a dramatic lunar presentation tonight. A partial eclipse of the Moon will be visible from Europe, Africa, Asia, and Australia.

Explanation: Many stars form in clusters. Galactic or open star clusters are relatively young swarms of bright stars born together near the plane of our Milky Way Galaxy. Separated by about a degree on the sky, two nice examples are M46 (upper left) 5,400 light-years in the distance and M47 (lower right) only 1,600 light-years away toward the nautical constellation Puppis. Around 300 million years young M46 contains a few hundred stars in a region about 30 light-years across. Aged 80 million years, M47 is a smaller but looser cluster of about 50 stars spanning 10 light-years. But this portrait of stellar youth also contains an ancient interloper. The small, colorful patch of glowing gas in M46 is actually the planetary nebula

NGC 2438 - the final phase in the life of a sun-like star billions of years old. NGC 2438 is estimated to be only 3,000 light-years distant and likely represents a foreground object, only by chance appearing along our line of sight to youthful M46.

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 Eclipsed Moon Rising Over England
Credit & Copyright: Gain Lee**

Explanation: Last Thursday, part of our Moon turned dark. The cause, this time, was not a partial lunar phase -- the Moon was full -- but rather that part of the Moon went into Earth's shadow. The resulting partial lunar eclipse was visible from the eastern Atlantic Ocean through Europe, Africa, and Asia and into the western Pacific Ocean. The darkest part of the lunar eclipse, when part of the Moon was completely shielded from sunlight, lasted about 90 minutes. Pictured above, a partially eclipsed Moon is seen rising over an estate in Huddersfield, England. The above image was taken far away from the house in the foreground, as only this would allow it to appear as angularly small as the half-degree Moon far in the

background. A setting twilight Sun lit the foreground. The next eclipse of the Moon will occur in March 2007.

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**Green Aurora Over Lake Superior
Credit & Copyright: Jeff Hapeman**

Explanation: What if your horizon was green? If you've got a camera, take a picture! That was the experience of Jeff Hapeman last week when visiting the Pictured Rocks National Lakeshore in Michigan. On a quiet night toward the northern horizon over Lake Superior was a long lasting diffuse green aurora. The above image was taken in an effort to capture the sense of wonder one gets when watching an auroral display. Auroras are sparked by energetic particles from the Sun impacting the magnetic environment around the Earth. Resultant energetic particles such as electrons and protons rain down near the Earth's poles and impact the air. The impacted air molecules temporarily lose electrons, and when oxygen molecules among them reacquire these electrons, they emit green light. Auroras are known to have many shapes and colors.

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Dusty Spiral M66

Credit: M. Neeser (Univ.-Sternwarte Munchen), P. Barthel (Kapteyn Astron. Institute), H. Heyer, H. Boffin (ESO), ESO

Explanation: When morning twilight came to the Paranal Observatory in Chile, astronomers Mark Neeser and Peter Barthel interrupted their search for faint quasars, billions of light-years away. And just for a moment, they used Very Large Telescopes at the European Southern Observatory to appreciate the beauty of the nearby Universe. One result was this stunning view of beautiful spiral galaxy M66, a mere 35 million light-years away. About 100 thousand light-years across with striking dust lanes and bright star clusters along sweeping spiral arms, M66 is well known to astronomers as a member of the Leo Triplet of galaxies. Gravitational interactions with its neighborhood galaxies have likely influenced the shape of dusty spiral M66.

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Gemini South Star Trails
Credit & Copyright: Elke Schulz**

Explanation: Stars seem to arc through southern skies in this surrealistic time exposure -- recorded before moonrise from the Gemini South Observatory, Cerro Pachon, Chile, Planet Earth. During the one hour 40 minute exposure camera and tripod were fixed, so the concentric star trails are a reflection of Earth's daily rotation about its axis. The view looks to the south and includes the Gemini telescope enclosure in the foreground. At the apparent center of the curving trails, the South Celestial Pole lies just off the upper left edge. Two faint, wide streaks track the Magellanic Clouds, satellites of the Milky Way Galaxy, while a meteor flashes through the scene just left of the observatory.

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Extra Galaxies

**Credit & Copyright: 2006 Astr. Campers, Adam Block
(Caelum Obs.), CSS, U. Arizona Alum. Assoc.**

Explanation: Careful inspection of the full field of view for this sharp composite image reveals a surprising number of galaxies both near and far toward the constellation Ursa Major. The most striking is clearly NGC 3718, a warped spiral galaxy found near picture center. NGC 3718's faint spiral arms look twisted and extended, its bright central region crossed by obscuring dust lanes. A mere 150 thousand light-years to the right is another large spiral galaxy, NGC 3729. The two are likely interacting gravitationally, accounting for the peculiar appearance of NGC 3718. While this galaxy pair lies about 52 million light-years away, the remarkable Hickson Group 56 can also be seen clustered just below NGC 3718. Hickson Group 56 consists of five interacting galaxies and lies over 400 million light-years away.

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**Supernova Remnant E0102 from Hubble
Credit: Hubble Heritage Team, ESA, NASA**

Explanation: It's the blue wisp near the bottom that's the remnant of a tremendous recent supernova explosion. The large pink structure looming to the upper right is part of N76, a large star forming region in our neighboring Small Magellanic Cloud (SMC) galaxy. The supernova remnant wisp, with full coordinate name 1E0102.2-7219 and frequently abbreviated as E0102, also lies in the SMC, about 50 light years away from N76. The above image is a composite of several images taken by the Hubble Space Telescope. E0102 is of research interest because we see it as it appeared only 2,000 years after its explosion. Examination of E0102 therefore gives clues about how an enigmatic supernova works and what materials it dispersed into the surrounding interstellar medium.

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**Galactic Center Star Clusters
Credit: D. Wang (UMass) et al., CXC, NASA**

Explanation: If you had x-ray vision, the central regions of our Galaxy would not be hidden from view by cosmic dust clouds. Instead, the Milky Way toward Sagittarius might look something like this. Pleasing to look at, the gorgeous false-color representation of x-ray data from the Chandra Observatory shows high energies in blue, medium in green, and low energy x-rays in red. The mosaic spans about 130 light-years at the 26,000 light-year distance of the Galactic Center. It reveals massive, x-ray emitting star clusters in a crowded environment. In particular, the Galactic Center cluster and the enormous black hole Sagittarius A* are within the bright region near the bottom. Two other star clusters, the Arches, and the Quintuplet lie near the top. Cluster interactions with dense molecular clouds in the region may produce some of the diffuse emission detected in the Chandra x-ray view.

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**The Colorful Clouds of Rho Ophiuchi
Credit & Copyright: Jim Misti and Steve Mazlin,
(acquisition), Robert Gendler (processing)**

Explanation: This stunning mosaic of the sky around bright stars Antares (Alpha Scorpii) and Rho Ophiuchi reveals spectacular colors in a cosmic starscape. Near the top, Rho Ophiuchi and nearby stars are immersed in blue reflection nebulae - dust clouds that shine primarily by reflected starlight. Cool supergiant star Antares (lower left) is itself shedding the material that reflects the evolved star's yellowish hue. Characteristic of star forming regions, the telltale red emission from hydrogen gas also permeates the view along with dark, obscuring dust clouds seen in silhouette against the background stars and brighter nebulosities. About 500 light-years away, the Rho Ophiuchi star clouds, are well in front of the nearby globular star cluster M4, visible just below and right of center. The wide view spans about 6 degrees on the sky.

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 Tornado and Rainbow Over Kansas
Credit & Copyright: Eric Nguyen (Oklahoma U.),
www.mesoscale.ws

Explanation: The scene might have been considered serene if it weren't for the tornado. Last June in

Kansas, storm chaser Eric Nguyen photographed this budding twister in a different light -- the light of a rainbow. Pictured above, a white tornado cloud descends from a dark storm cloud. The Sun, peeking through a clear patch of sky to the left, illuminates some buildings in the foreground. Sunlight reflects off raindrops to form a rainbow. By coincidence, the tornado appears to end right over the rainbow. Streaks in the image are hail being swept about by the high swirling winds. Over 1,000 tornadoes, the most violent type of storm known, occur on Earth every year, many in tornado alley. If you see a tornado while driving, do not try to outrun it -- park your car safely, go to a storm cellar, or crouch under steps in a basement.

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**Sunrise Solstice at Stonehenge
Credit & Copyright: Pete Strasser (Tucson, Arizona, USA)**

Explanation: Today the Sun reaches its northernmost point in the planet Earth's sky. Called a solstice, the date traditionally marks a change of seasons -- from spring to summer in Earth's Northern Hemisphere and

from fall to winter in Earth's Southern Hemisphere. Pictured above is the 2005 Summer Solstice celebration at Stonehenge in England. The event was rare because Stonehenge was not always open to the public, and because recent summer solstices there had been annoyingly cloudy. In 2005, however, thousands of people gathered at sunrise to see the sun rise through the 4,000 year old solar monument. Even given the precession of the Earth's rotational axis over the millennia, the Sun continues to rise over Stonehenge in an astronomically significant way. In fact, the photographer was able to find a good spot where the rising Sun appeared over one of Stonehenge's massive standing stones.

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An Alaskan Volcano Erupts
Credit: J. N. Williams, International Space Station 13 Crew, NASA

Explanation: What is happening to that volcano? It's erupting! The first person to note that the Aleutian Cleveland Volcano was spewing ash was astronaut Jeffrey N. Williams aboard the International Space Station. Looking down on the Alaskan Aleutian Islands

two weeks ago, Williams noted, photographed, and reported a spectacular ash plume emanating from the Cleveland Volcano. Starting just before this image was taken, the Cleveland Volcano underwent a short eruption lasting only about two hours. The Cleveland stratovolcano is one of the most active in the Aleutian Island chain. The volcano is fueled by magma displaced by the subduction of the northwest-moving tectonic Pacific Plate under the tectonic North America Plate.

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 Star Clouds over Arizona
Credit & Copyright: Ulrich Beinert**

Explanation: The clouds in the foreground are much different than the clouds in the background. In the foreground are a photogenic deck of Earth-based water clouds. The long exposure used to create the above photograph makes the light from the left, reflected from Phoenix, Arizona, USA, appear like a sunset. Far in the distance, however, are star clouds from the disk of our Milky Way Galaxy. Billions of stars like our Sun live there, circling our Galactic center every 200 million years. Contrast between the water

clouds and the star clouds has been digitally enhanced. Between the two, visible on the upper right, is the planet Jupiter.

Tomorrow's picture: smoking galaxy

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 Z is for Mars
Credit & Copyright: Tunc Tezel**

Explanation: This composite of images spaced about a week apart - from late July 2005 (bottom right) through February 2006 (top left) - traces the retrograde motion of ruddy-colored Mars through planet Earth's night sky. On November 7th, 2005 the Red Planet was opposite the Sun in Earth's sky (at opposition). That date occurred at the center of this series with Mars near its closest and brightest. But Mars didn't actually reverse the direction of its orbit to trace out the Z-shape. Instead, the apparent backwards or retrograde motion with respect to the background stars is a reflection of the motion of the Earth itself. Retrograde motion can be seen each time Earth overtakes and laps planets orbiting farther from the Sun, the Earth moving more rapidly through its

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Galaxy Wars: M81 versus M82
Credit & Copyright: Johannes Schedler (Panther
Observatory)**

Explanation: In this stunning cosmic vista, galaxy M81 is on the left surrounded by blue spiral arms. On the right marked by massive gas and dust clouds, is M82. These two mammoth galaxies have been locked in gravitational combat for the past billion years. The gravity from each galaxy dramatically affects the other during each hundred million-year pass. Last go-round, M82's gravity likely raised density waves rippling around M81, resulting in the richness of M81's spiral arms. But M81 left M82 with violent star forming regions and colliding gas clouds so energetic the galaxy glows in X-rays. In a few billion years only one galaxy will remain.

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When Roses Aren't Red
Credit & Copyright: Jay Ballauer (All About Astro, 3RF)**

Explanation: Not all roses are red of course, but they can still be very pretty. Likewise, the beautiful Rosette Nebula and other star forming regions are often shown in astronomical images with a predominately red hue - in part because the dominant emission in the nebula is from hydrogen atoms. Hydrogen's strongest optical emission line, known as H-alpha, is in the red region of the spectrum, but the beauty of an emission nebula need not be appreciated in red light alone. Other atoms in the nebula are also excited by energetic starlight and produce narrow emission lines as well. In this gorgeous view of the Rosette's central regions, narrow band images are combined to show emission from sulfur atoms in red, hydrogen in blue, and oxygen in green. In fact, the scheme of mapping these narrow atomic emission lines into broader colors is adopted in many Hubble images of stellar nurseries. This image spans about 50 light-years in the constellation Monoceros, at the 3,000 light-year estimated distance of the Rosette Nebula.

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**The Flaming Star Nebula from CFHT
Credit & Copyright: Jean-Charles Cuillandre (CFHT),
Hawaiian Starlight, CFHT**

**Explanation: Rippling dust and gas lanes give the
Flaming Star Nebula its name. The red and purple
colors of the nebula are present in different regions
and are created by different processes. The bright star
AE Aurigae, visible toward the image left, is so hot it
is blue, emitting light so energetic it knocks electrons
away from surrounding gas. When a proton
recaptures an electron, red light is frequently emitted.
The purple region's color is a mix of this red light and
blue light emitted by AE Aurigae but reflected to us by
surrounding dust. The two regions are referred to as
emission nebula and reflection nebula, respectively.
Pictured above, the Flaming Star Nebula, officially
known as IC 405, lies about 1500 light years distant,
spans about 5 light years, and is visible with a small
telescope toward the constellation of the Charioteer
(Auriga).**

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Cosmic Tornado HH49/50

Credit: J. Bally (Univ. of Colorado) et al., JPL-Caltech, NASA

Explanation: Light-years in length, this cosmic tornado is actually a powerful jet cataloged as HH (Herbig-Haro) 49/50 blasting down from the top of a Spitzer Space Telescope view. Though such energetic outflows are well known to be associated with the formation of young stars, the exact cause of the spiraling structures apparent in this case is still mysterious. The embryonic star responsible for the 100-kilometer per second jet is located just off the top of the picture, while the bright star seen near the tip of the jet may just by chance lie along the line of sight. In the false-color infrared image, the tornado glows with infrared light generated as the outflow heats surrounding dust clouds. The color coding shows a trend from red to blue hues at the tornado's tip indicating a systematic increase in emission at shorter wavelengths. The trend is thought to indicate an increase in molecular excitation closer to where the head of the jet is impacting interstellar gas. HH49/50 is about 450 light-years distant, located in the Chamaeleon I molecular cloud.

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**Orion Nebula: The Hubble View
Credit: NASA, ESA, M. Robberto (STScI/ESA) and
The Hubble Space Telescope Orion Treasury Project
Team**

Explanation: Few cosmic vistas excite the imagination like the Orion Nebula. Also known as M42, the nebula's glowing gas surrounds hot young stars at the edge of an immense interstellar molecular cloud only 1,500 light-years away. The Orion Nebula offers one of the best opportunities to study how stars are born partly because it is the nearest large star-forming region, but also because the nebula's energetic stars have blown away obscuring gas and dust clouds that would otherwise block our view - providing an intimate look at a range of ongoing stages of starbirth and evolution. This detailed image of the Orion Nebula is the sharpest ever, constructed using data from the Hubble Space Telescope's Advanced Camera for Surveys and the European Southern Observatory's La Silla 2.2 meter telescope. The mosaic contains a billion pixels at full resolution and reveals about 3,000 stars. In apparent size, the picture is as large as the Full Moon. At the distance of M42 it spans thirteen light-years.

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Cat's Eye

Credit: NASA, ESA, HEIC, and The Hubble Heritage Team (STScI / (AURA)

Explanation: Staring across interstellar space, the alluring Cat's Eye nebula lies three thousand light-years from Earth. A classic planetary nebula, the Cat's Eye (NGC 6543) represents a final, brief yet glorious phase in the life of a sun-like star. This nebula's dying central star may have produced the simple, outer pattern of dusty concentric shells by shrugging off outer layers in a series of regular convulsions. But the formation of the beautiful, more complex inner structures is not well understood. Seen so clearly in this sharp Hubble Space Telescope image, the truly cosmic eye is over half a light-year across. Of course, gazing into the Cat's Eye, astronomers may well be seeing the fate of our sun, destined to enter its own planetary nebula phase of evolution ... in about 5 billion years.

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The Sagittarius (constellation) is at the galactic center and it is the source of the cosmic radio signal at 91 MHZ FR radio

science doesn't know what material when excited emits a radio signal at 91 MHZ or 160 MHZ

Scientists turn dead cells into live tissue

Antony Barnett and Robin McKie / London Observer | September 24 2006

Scientists working at a British laboratory have achieved one of the most controversial breakthroughs ever made in the field of stem cell science by taking cells from dead embryos and turning them into living tissue.

The technique could soon be used to create treatments for patients suffering from diseases such as Alzheimer's and Parkinson's, the researchers say. The breakthrough has been hailed by many scientists and ethical experts because it could circumvent opposition to stem cell experiments.

'This should get round opposition to stem cell science because live embryos will no longer need to be used in all experiments,' said

Professor Miodrag Stojkovic, the researcher who carried out the experiments at the Centre for Stem Cell Biology at Newcastle University last year.

But other experts last night warned that the use of dead embryo cells could lead to more ethical dilemmas, not fewer. 'How do you know when an embryo is dead?' said Eric Meslin, director of the Indiana University center of bioethics.

Stem cells extracted from embryos are prized by scientists because they are capable of turning into any cell or tissue type in the body. Ultimately they could be used as treatments for heart disease and diabetes and other diseases, researchers argue.

But the technology involves creating and destroying living embryos to extract stem cells. Usually these embryos are made at fertility clinics when couples go for in vitro fertilisation (IVF).

However, Stojkovic's work suggests it may be possible to avoid using live embryos; instead, scientists use those that have died naturally during IVF. It would also mean that many more embryos were available for research and eventual treatment of the diseases, speeding up advancements in the cutting-edge science.

Stojkovic's experiments were carried out while he was working at the Centre for Stem Cell Biology at Newcastle last year. In a paper, published last week online on the website of the journal Stem Cells, Stojkovic reveals he and his colleagues took 13 embryos, created by IVF. All 13 had stopped developing a few days after conception. 'They were in a very early stage of development,' said Stojkovic, now head of Sintocell, the Serbian medical research centre.

The team then waited 24 hours to check that the embryos were no longer dividing before beginning their experiments. 'These were all deemed to be arrested embryos,' said Stojkovic. 'In other words, they were dead. [But] they had the capacity to develop any different type of cell you could think of, including kidney cells, liver cells, and skin cells.'

'I think this is a very important development, although stem cells created this way should not be seen as an alternative to those made from live embryos. They should be seen as an additional source.'

Last night right-to-life campaigners called for caution. 'In theory if an embryo is obtained ethically and a stem cell can be derived after that embryo has died naturally, then that will remove all ethical objections as there is no destruction of a living organism,' said Josephine Quintavalle, of Comment on Reproductive Ethics, a Catholic campaign group. 'We do not have objections to the use of donated tissue and organs in other areas of medicine.'

But Quintavalle warned that the case for the use of dead embryo cells had not been proved. 'There is the critical question of how you know when an embryo is dead or not.'

George Daley, of the Harvard Stem Cell Institute, said the paper's approach raised scientific concerns. 'If there was something wrong with the embryo that made it arrest, isn't there something wrong with these cells? We don't know.'

However, Stojkovic's work was given strong backing by Donald Landry, at the Columbia University Medical Center in New York, who called the work an important addition to the field. 'Regardless of how you feel about personhood for embryos, if the embryo is dead, then the issue of personhood is resolved,' Landry said.

'This then reduces the ethics of human embryonic stem cell generation to the ethics of, say, organ donation. So now you're really saying, "Can we take live cells from dead embryos the way we take live organs from dead patients?"'

What they do

· Embryonic stem cells have the ability to develop into any type of cell in the human body, from brain cells to skin and kidney cells.

· By creating cloned embryos of patients, it might one day be possible to grow their stem cells in the laboratory, say scientists. These could use then be used as transplants.

· Diseases such as diabetes, Alzheimer's and Parkinson's - in which particular organs or pieces of tissue have been destroyed - are thought to be the best candidates for treatments

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-----Hello:

I was thinking about ways to preserve deceased people

better , maybe in wax for the hope of a medical resurrection one day, as cryonics is cold and expensive and not available for most of the people.

a copy and pasted site on grave wax

-ADIPOCERE

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few

ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

This woman drowned and was submerged for seven months. "Wet" adipocere formation throughout nearly all fatty tissue in her body.

Front

Introduction

Chemistry

History

Images2

Oh, look at this little angel's face! So precious. Sometimes adipocere formation, under the right circumstances (and with a little help from a friend- in this case an especially gifted embalmer), can create a masterpiece to withstand the tests of time and biology. This beautiful little three year old girl, passed away in 1920; the photo was taken in about 1995! Palermo, Italy.

Three studies of "dry" adipocere formation on human skulls. Top: eyes, brain and right cheek fat all turned into adipocere. Unknown burial time, but possibly many years. Right: extensive adipocere formation in and on skull. Corpse had been stuffed in a dry sewer for two years. Below: more adipocere in the usual places. Elapsed time between death and photo is unknown.

Perhaps the most famous example of adipocere formation in the world. "The Soap Lady" is thought to have passed away during the Yellow Fever epidemic of 1892, at Philadelphia USA. Some eighty years later she was exhumed, perhaps as the result of a redevelopment of an old graveyard. The Soap Lady has resided in the Mutter Museum ever since. Photo courtesy of Roadside America.

Julia Buccola Petta was an Italian-American housewife living in Chicago after World War One. On the occasion of the birth of her second child, she died. She was interred in famous Mount Carmel cemetery, site of the Chicago Archdiocese's Cardinal Crypts, Al Capone's grave, and many others. Buccola's ghost, legend has it, visited her mother and asked to have her corpse exhumed. For whatever actual reason, the corpse was disinterred six years after Mrs. Buccola's death; the photo plainly shows a corpse with a great deal of adipocere formation in the face- but also a corpse very well preserved. Note the stains (Mud? Mold? Body fluid purge?) which can be seen on the light

colored fabric of the casket lining. This occurred at some point during its six years in the ground. The alkaline soil at Mount Carmel is likely responsible for this so-called "miracle".

Concretions, like the three spherical

objects near the bottom of the picture on the right, are found in Ohio and

elsewhere. They are likely a result of adipocere falling to the bottom of a

long-since disappeared sea or lake.

Minerals and other organic debris

became attached to the adipocere,

which acted as a nucleus for the

concretion. These concretions, in the

right circumstances, could have gone

on to become coal, oil, or

natural gas; but these became shale.

This series of seven autopsy photographs are from the investigation of a tragic auto accident, whereupon a car drove into a Japanese lake in 1982. The car and its occupant, a 41 year-old woman, were missing for nine years. The automobile and driver were discovered by amateur divers on holiday in 1991. Clockwise from top left: the car being lifted from the bottom of

the lake. Top right: view inside the car- victim still clothed. Upper right: at the morgue. Victim's clothing removed. Skull

has detached from adipocere and lower jaw bone. Note how adipocere formation has preserved virtually all her body, with exception of scalp. Middle right: view of victim's back side. This woman may not have

been this stout in life; adipocere formation creates more volume than when flesh was alive. Lower right: it appears as though this victim may have died in a cadaveric spasm, owing to her posture; drowning victims often do. Bottom right: view of victim's lower half. Note panties (or

pantie crease marks on adipocere). Bottom left: close up of head,

with skull placed back into position. The adipocere has separated from the bone of the skull; quite understandable after nine years in water.

This death

was ruled a suicide.

This poor sailor drowned and was in the sea for some months before his adipocere-laden body was fished out of the briny deep. Note the condition of ear lobes and nose. Surprisingly, most of his corpse was not consumed by sea creatures, which is unusual in open water.

The whitish/yellow bits in this photo is very infamous adipocere indeed. That's the decomposed toothy smile of the late Lee Harvey Oswald, accused assassin of President John F. Kennedy. Oswald was himself gunned down by Dallas nightclub owner Jack Ruby on 23/11/1963, and was buried in a Texas cemetery. Nearly 18 years later, assassination conspiracy theorists' lingering doubts concerning exactly who was buried in Oswald's grave prompted an exhumation and a new autopsy. While no full facial photos were allowed by agreement with LHO's widow, a tight shot of his teeth was permitted, for identification purposes. The condition of the corpse was described as poor, due to the fact that the burial vault LHO's casket was deposited in had cracked open at some point, allowing water to fill it. The casket itself was full of putrid water. However, some adipocere still clung to parts of Oswald's remains, as evidenced in this image. Note the wire, used to secure the jaw for open casket display at the time of embalming in 1963. By the way, the remains were positively identified as being those of Lee Harvey Oswald. He was reburied in a new vault and casket, presumably in a dry grave. See Links page for LHO's official autopsy report.

About two years in another wet grave. The gentleman was disinterred

for reburial in a different cemetery. The vault and it's contents were

waterlogged. Just before reburial, the casket was opened for this photograph. During the transfer to the new cemetery, the water drained out of the porous receptacle. This grave had filled with ground water much as Lee Harvey Oswald's resting place had. Unfortunately, this is a rather common occurrence in cemeteries. Adipocere formation is complete.

Two years, 18 years....

how about 66 million years' burial? These two photos are of the now-famous fossilized dinosaur heart and other tissues. An extraordinary find, it will likely lead

to many more such fossils being located and recognised for what they are: just another manifestation of the amazing preservative powers of the substance

called adipocere....

"nature's own conservator".

Submissions

Return to the top of this page

Photo by Adipocere; from the Cemetery Monuments web site.

Notables

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Paraffin

**From Wikipedia, the free encyclopedia
(Redirected from Paraffin wax)**

Jump to: navigation, search

This article is about the waxy mildly combustible substance. For the highly flammable fuel called "paraffin" in Britain, see Kerosene. Paraffin is a common name for a group of alkane hydrocarbons with the general formula C_nH_{2n+2} , where n is greater than about 20, discovered by Carl Reichenbach. It is distinct from the fuel known in Britain as paraffin oil or just paraffin, which is called kerosene in American English. Usage of the term varies in other countries, leading to confusion about which substance is being referred to. The solid forms of paraffin are called paraffin wax. Paraffin is also a technical name for an alkane in general, but in most cases it refers specifically to a linear, or normal alkane, while branched, or isoalkane are also called isoparaffins. The name is derived from the Latin *parum* (= barely) + *affinis* with the meaning here of "lacking affinity", or "lacking reactivity").

Contents [hide]

- 1 Physical and chemical properties**
- 2 Liquid paraffin**
- 3 Uses**
- 4 See also**
- 5 References**

[edit] Physical and chemical properties

It is mostly found as a white, odorless, tasteless, waxy solid, with a typical melting point between about 47 °C and 65 °C. It is insoluble in water, but soluble in ether, benzene, and certain esters. Paraffin is unaffected by most common chemical reagents, but burns readily.

Pure paraffin is an extremely good electrical insulator, with an electrical resistivity of 10¹⁷ ohm meter. This is better than nearly all other materials except some plastics (notably teflon).

[edit] Liquid paraffin

Liquid paraffin has a number of names, including nujol, mineral spirits, adepsine oil, alboline, glymol, liquid paraffin, medicinal

paraffin, saxol, or USP mineral oil. It is often used in infrared spectroscopy, as it has a relatively uncomplicated IR spectrum. When the sample to be tested is made into a mull (a very thick solution), liquid paraffin is added so it can be spread on the disks to be tested. Liquid paraffin is also excellent for helping bowel movement in persons suffering chronic constipation.

[edit] Uses

Candlemaking

Coatings for waxed paper or cloth.

Food-grade paraffin wax

is used in some candies to make them look shiny. Although edible, it is nondigestible; it passes right through the body without being broken down.

Non-food grade paraffin wax can contain oils and other impurities which may be toxic or harmful.

Magic Shell

Coating for many kinds of hard cheese, like Edam cheese.

Sealing jars, cans, and bottles.

A key component in wax used for investment casting.

As anti-caking, moisture repellent, and dustbinding coatings for fertilizers.

Preparing specimens for histology.

Solid propellant for hybrid rocket motors.

In dermatology, as an emollient (moisturiser).

Surfing, for grip on surfboards as a component of surfwax.

The primary component of glide wax, used on skis and snowboards.

Microwax as a food additive, a glazing agent with E number E905.

The paraffin test is used in forensics to detect granules of gunpowder in the hand of a shooting suspect.

A fire performance fuel.

Blends of paraffin and micro waxes in rubber compounds as anti-ozonant agent, to prevent cracking of the rubber. The antiozonant waxes can today be produced from synthetic waxes, FT wax, and Fischer Tropsch wax.

Impure mixtures of mostly paraffin wax are used in wax baths for beauty and therapy purposes.

Paraffin wax is not used much to make original models for casting, as it is relatively brittle at room temperature and usually cannot be cold-carved without excessive chipping and breaking. Soft, pliable waxes such as beeswax are preferred for modeling.

[edit] See also
Paraffin oil
Mineral oil

[edit] References
Liquid paraffin / nujol information

v • d • eE numbers

Colours (E100-199) • Preservatives (E200-299) • Antioxidants & Acidity regulators (E300-399) • Thickeners, stabilisers & emulsifiers (E400-499) • pH regulators & anti-caking agents (E500-599) • Flavour enhancers (E600-699) • Miscellaneous (E900-999) • Additional chemicals (E1100-1599)

Waxes (E900-909) • Synthetic glazes (E910-919) • Improving agents (E920-929) • Packaging gases (E930-949) • Sweeteners (E950-969) • Foaming agents (E990-999)

Dimethyl polysiloxane (E900) • Beeswax (E901) • Candelilla wax (E902) • Carnauba wax (E903) • Shellac (E904) • Paraffins (E905) • Mineral oil (E905a) • Vaseline (E905b) • Microcrystalline wax (E905c) • Gum benzoic (E906) • Crystalline wax (E907) • Rice bran wax (E908)

Retrieved from "<http://en.wikipedia.org/wiki/Paraffin>"
Categories: Waxes | Alkanes | Petroleum products | Food additives

Views[Article Discussion](#) **Edit this page** [History](#) [Personal tools](#)[Sign in / create account](#) **Navigation**

Main page

Featured content

Current events

Portals

Categories

Random article

Recent changes

interaction

Help

Community portal

Questions

Contact Wikipedia

Donations

Search

Toolbox

What links here

Related changes

Upload file

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Printable version

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Wax

From Wikipedia, the free encyclopedia

Jump to: navigation, search

This page is about the substance. For other meanings see Wax (disambiguation).

Wax has traditionally referred to a substance that is secreted by bees (beeswax) and used by them in constructing their honeycombs.

It is an imprecisely defined term generally understood to be a substance with properties similar to beeswax, namely

plastic (malleable) at normal ambient temperatures

a melting point above approximately 45 °C (113 °F) (which differentiates waxes from fats and oils)

a relatively low viscosity when melted (unlike many plastics)

insoluble in water

hydrophobic

Waxes may be natural or artificial. In addition to beeswax, carnauba (a vegetable wax) and paraffin (a petroleum wax) are commonly encountered waxes which occur naturally. Earwax is an oily substance found in the human ear. Some artificial materials that exhibit similar properties are also described as wax or waxy.

Chemically, a wax may be an ester of ethylene glycol (ethan-1,2-diol) and two fatty acids, as opposed to a fat which is an ester of glycerin (propan-1,2,3-triol) and three fatty acids. It may also be a combination of other fatty alcohols with fatty acids. It is a type of lipid.

Contents [hide]

1 Wax types

1.1 Animal and insect waxes

1.2 Vegetable waxes

1.3 Mineral waxes

1.4 Petroleum waxes

1.5 Synthetic waxes

2 See also

3 External link

[edit] Wax types

[edit] Animal and insect waxes

Beeswax - produced by honeybees

Chinese wax - produced by scale insects *Coccus ceriferus*

Shellac wax - from the lac insect *Coccus lacca*

Spermaceti - from the head cavities and blubber of the Sperm Whale

Lanolin (wool wax) - from the sebaceous glands of sheep

[edit] Vegetable waxes

Bayberry wax - from the surface of the berries of the bayberry shrub

Candelilla wax - from the Mexican shrubs *Euphorbia cerifera* and *E. antisiphilitica*

Carnauba wax - from the leaves of the Carnauba Palm

Castor wax - catalytically hydrogenated castor oil

Esparto wax - a byproduct of making paper from esparto grass

Japan wax - a vegetable tallow (not a true wax), from the berries of *Rhus* and *Toxicodendron* species

Jojoba oil - pressed from the seeds of the jojoba bush, a replacement for spermaceti

Ouricury wax - from the Brazilian Feather Palm

Rice bran wax - obtained from rice bran

[edit] Mineral waxes

Ceresin waxes

Montan wax - extracted from lignite and brown coal

Ozocerite - found in lignite beds

Peat waxes

[edit] Petroleum waxes

Paraffin wax - made of long-chain alkane hydrocarbons

Microcrystalline wax - with very fine crystalline structure

[edit] Synthetic waxes

Polyethylene waxes - based on polyethylene

Fischer-Tropsch waxes

**Chemically modified waxes - usually esterified or saponified
substituted amide waxes**

polymerized α -olefins

[edit] See also

Adipocere (grave wax, mortuary wax)

Bayberry

Bikini wax

Candles

Earwax or cerumen

Hair wax

Hot wax

Ruby Wax

SC Johnson Company

Sealing wax

Ski wax

Surfwax

Wax play

Waxing for hair removal

Wax museum

Wood finishing

[edit] External link

Waxes

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Category: Waxes

Views **Article** **Discussion** **Edit this page** **History** **Personal tools** **Sign in /**
create account **Navigation**

Main Page

Community Portal

Featured content

Current events

Recent changes

Random article

Help

Contact Wikipedia

Donations

Search

Toolbox

What links here

Related changes

Upload file

Special pages

Printable version

Permanent link

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In other languages

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Deutsch

Español

Esperanto

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Italiano

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Polski

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Simple English
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Adipocere

From Wikipedia, the free encyclopedia

Jump to: [navigation](#), [search](#)

Adipocere or grave wax or mortuary wax is the insoluble fatty acids left as residue from pre-existing fats from decomposing material such as a human cadaver. It is formed by the slow hydrolysis of fats in wet ground and can occur in both embalmed and untreated bodies. It is generally believed to have first been discovered by the Frenchman Fourcroy in the 18th century; however, Sir Thomas Browne describes this substance in his discourse, Hydriotaphia, Urn Burial of 1658:

"In a Hydropicall body ten years buried in a Church-yard, we met with a fat concretion, where the nitre of the Earth, and the salt and lixivious liquor of the body, had coagulated large lumps of fat, into the consistence of the hardest castle-soap: wherof part remaineth with us." Adipocere inhibits the growth of bacteria, and can go some way to protecting a corpse against decomposition. It begins to form within about a month of death, and can persist on the remains for centuries. Since it forms through hydrolysis, it does so more readily in humid environments or even underwater. An exposed body is unlikely to form

deposits of adipocere. The process of adipocere formation is also known as saponification.

Adipocere is also the name of a French independent record label, specializing in metal (music).

[edit] Sources

J.S.Finch. A Doctor's life of Science and Faith. Princeton 1950

C.A.Patrides, ed. Sir Thomas Browne The Major Works. Penguin 1977

[edit] External links

Adipocere - A collection of resources on soap mummies and adipocere formation.

[1] - the official site of the record label

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Category: Lipids

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Saponification

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Jump to: navigation, search

Saponification of a lipid with potassium hydroxide. Saponification is the hydrolysis of an ester under basic conditions to form an alcohol and the salt of the acid. Saponification is commonly used to refer to the reaction of a metallic alkali (base) with a fat or oil to form soap. Saponifiable substances are those that can be converted into soap.

**CH₂-OOC-R - CH-OOC-R - CH₂-OOC-R (fat) + 3 NaOH (or KOH)
both heated ?**

**CH₂-OH -CH-OH - CH₂-OH (glycerol) + 3 R-CO₂-Na (soap)
R=(CH₂)₁₄CH₃ (for example)**

Lye is a form of sodium hydroxide (NaOH) which is a caustic base. If NaOH is used a hard soap is formed, whereas a soft soap is formed when potassium hydroxide (KOH) is used.

Vegetable oils and animal fats are fatty esters in the form of triglycerides. The alkali breaks the ester bond and releases the fatty acid and glycerol.

The soap is salted out by precipitating it with saturated sodium chloride.

Contents [hide]

1 Saponification in corpses

2 Saponification in fire extinguishers

3 See also

4 External links

[edit] Saponification in corpses

Saponification can also refer to the conversion of fat and other soft tissue in a corpse into adipocere, often called "grave wax." This process is more common where the amount of fatty tissue is high, the agents of decomposition absent or only minutely present, and the burial ground is particularly alkaline.

[edit] Saponification in fire extinguishers

Fires involving cooking fats and oils should be extinguished with a wet chemical extinguisher. Extinguishers of this type are designed to extinguish cooking fats and oils through saponification. The extinguishing agent rapidly converts the burning substance to a non-combustible soap. This process is endothermic, meaning it absorbs energy (in this case, thermal energy) from its surroundings, eliminating the fire and decreasing the temperature.

[edit] See also

Saponification value

Soapmaking

Unsaponifiable

[edit] External links

About Candle and Soap Making - Soap making projects, instructions, recipes, suppliers and more from About.com

Glossary for the Modern Soap Maker - A collection of terms, definitions and acronyms for today's soap maker.

Adipocere - A collection of resources on soap mummies and adipocere formation.

Create The Dream Magazine - Magazine for Artisans of Soap, Candle, and Herbal Products.

Creative Artisans Network.

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Categories: Organic chemistry | Chemical processes | Soaps

ViewsArticle Discussion Edit this page History Personal toolsSign in / create account Navigation

Main page

Featured content

Current events

Portals

Categories

Random article

Recent changes

interaction

Help

Community portal

Questions

Contact Wikipedia

Donations

Search

Toolbox

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Before visiting this web site, did you know about adipocere?

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No- I will still be buried or entombed as planned

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Yes- I now will be cremated as a result of visiting this site

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ADIPOCERE STORE

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The New World Of Adipocere Forums...

It's Not Just For Death Anymore.

Adipocere Standard Time Is: 12:24:43 AM on Wednesday, 20

December, 2006a site about the soapy, waxy substance many of us will one day become.

Chat at:

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Musical Interlude: LATHE OF HEAVEN

HELP NEW ORLEANS & THE GULF COAST

Click here to add text.

DOOM DEATH BURIAL

AND

OLDIES: GRAVEYARD SOAPBOX

RADIO BY ADIPOCERE

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Images1

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

This woman drowned and was submerged for seven months. "Wet" adipocere formation throughout nearly all fatty tissue in her body.

Front

Introduction

Chemistry

History

Images2

Oh, look at this little angel's face! So precious. Sometimes adipocere formation, under the right circumstances (and with a little help from a friend- in this case an especially gifted embalmer), can create a

masterpiece to withstand the tests of time and biology. This beautiful little three year old girl, passed away in 1920; the photo was taken in about 1995! Palermo, Italy.

Three studies of "dry" adipocere formation on human skulls. Top: eyes, brain and right cheek fat all turned into adipocere. Unknown burial time, but possibly many years. Right: extensive adipocere formation in and on skull. Corpse had been stuffed in a dry sewer for two years. Below: more adipocere in the usual places. Elapsed time between death and photo is unknown.

Perhaps the most famous example of adipocere formation in the world. "The Soap Lady" is thought to have passed away during the Yellow Fever epidemic of 1892, at Philadelphia USA. Some eighty years later she was exhumed, perhaps as the result of a redevelopment of an old graveyard. The Soap Lady has resided in the Mutter Museum ever since. Photo courtesy of Roadside America.

Julia Buccola Petta was an Italian-American housewife living in Chicago after World War One. On the occasion of the birth of her second child, she died. She was interred in famous Mount Carmel cemetery, site of the Chicago Archdiocese's Cardinal Crypts, Al Capone's grave, and many others. Buccola's ghost, legend has it, visited her mother and asked to have her corpse exhumed. For whatever actual reason, the corpse was disinterred six years after Mrs. Buccola's death; the photo plainly shows a corpse with a great deal of adipocere formation in the face- but also a corpse very well preserved. Note the stains (Mud? Mold? Body fluid purge?) which can be seen on the light colored fabric of the casket lining. This occurred at some point during its six years in the ground. The alkaline soil at Mount Carmel is likely responsible for this so-called "miracle".

Concretions, like the three spherical

objects near the bottom of the picture on the right, are found in Ohio and

elsewhere. They are likely a result of adipocere falling to the bottom of a

long-since disappeared sea or lake.

Minerals and other organic debris

became attached to the adipocere,
which acted as a nucleus for the
concretion. These concretions, in the
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on to become coal, oil, or

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This series of seven autopsy photographs are from the investigation of a tragic auto accident, whereupon a car drove into a Japanese lake in 1982. The car and its occupant, a 41 year-old woman, were missing for nine years. The automobile and driver were discovered by amateur divers on holiday in 1991. Clockwise from top left: the car being lifted from the bottom of

the lake. Top right: view inside the car- victim still clothed. Upper right: at the morgue. Victim's clothing removed. Skull

has detached from adipocere and lower jaw bone. Note how adipocere formation has preserved virtually all her body, with exception of scalp. Middle right: view of victim's back side. This woman may not have been this stout in life; adipocere formation creates more volume than when flesh was alive. Lower right: it appears as though this victim may have died in a cadaveric spasm, owing to her posture; drowning victims often do. Bottom right: view of victim's lower half. Note panties (or

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This poor sailor drowned and was in the sea for some months before his adipocere-laden body was fished out of the briny deep. Note the condition of ear lobes and nose. Surprisingly, most of his corpse was not consumed by sea creatures, which is unusual in open water.

The whitish/yellow bits in this photo is very infamous adipocere indeed. That's the decomposed toothy smile of the late Lee Harvey Oswald, accused assassin of President John F. Kennedy. Oswald was himself gunned down by Dallas nightclub owner Jack Ruby on 23/11/1963, and was buried in a Texas cemetery. Nearly 18 years later, assassination conspiracy theorists' lingering doubts concerning exactly who was buried in Oswald's grave prompted an exhumation and a new autopsy. While no full facial photos were allowed by agreement with LHO's widow, a tight shot of his teeth was permitted, for identification purposes. The condition of the corpse was described as poor, due to the fact that the burial vault LHO's casket was deposited in had cracked open at some point, allowing water to fill it. The casket itself was full of putrid water. However, some adipocere still clung to parts of Oswald's remains, as evidenced in this image. Note the wire, used to secure the jaw for open casket display at the time of embalming in 1963. By the way, the remains were positively identified as being those of Lee Harvey Oswald. He was reburied in a new vault and casket, presumably in a dry grave. See Links page for LHO's official autopsy report.

About two years in another wet grave. The gentleman was disinterred

for reburial in a different cemetery. The vault and it's contents were

waterlogged. Just before reburial, the casket was opened for this photograph. During the transfer to the new cemetery, the water drained out of the porous recepticle. This grave had filled with ground water much as Lee Harvey Oswald's resting place had. Unfortunately, this is a rather common occurance in cemeteries. Adipocere formation is complete.

Two years, 18 years....

how about 66 million years' burial? These two photos are of the now-famous fossilized dinosaur heart and other tissues. An extraordinary find, it will likely lead

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"nature's own conservator".

Submissions

Return to the top of this page

Photo by Adipocere; from the Cemetery Monuments web site.

Notables

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TO DISCUSS WITH FELLOW READERS.

Links

**-ADIPOCERE STORE-----Natural Grave Wax Processes
Paraffin Wax alkane hydrocarbons**

Hello:

I was thinking about ways to preserve deceased people

better , maybe in wax for the hope of a medical resurrection one day, as cryonics is cold and expensive and not available for most of the people.

a copy and pasted site on grave wax

rice wax paper

natural grave wax

-ADIPOCERE

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

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Return to the top of this page

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Notables

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Links

-ADIPOCERE STORE-

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Paraffin

From Wikipedia, the free encyclopedia

(Redirected from Paraffin wax)

Jump to: [navigation](#), [search](#)

This article is about the waxy mildly combustible substance. For the highly flammable fuel called "paraffin" in Britain, see Kerosene. Paraffin is a common name for a group of alkane hydrocarbons with the general formula C_nH_{2n+2} , where n is greater than about 20, discovered by Carl Reichenbach. It is distinct from the fuel known in Britain as paraffin oil or just paraffin, which is called kerosene in American English. Usage of the term varies in other countries, leading to confusion about which substance is being referred to. The solid forms of paraffin are called paraffin wax. Paraffin is also a technical name for an alkane in general, but in most cases it refers specifically to a linear, or normal alkane, while branched, or isoalkane are also called isoparaffins. The name is derived from the Latin *parum* (= barely) + *affinis* with the meaning here of "lacking affinity", or "lacking reactivity").

Contents [hide]

1 Physical and chemical properties

2 Liquid paraffin

3 Uses

4 See also

5 References

[edit] **Physical and chemical properties**

It is mostly found as a white, odorless, tasteless, waxy solid, with a typical melting point between about 47 °C and 65 °C. It is insoluble in

water, but soluble in ether, benzene, and certain esters. Paraffin is unaffected by most common chemical reagents, but burns readily.

Pure paraffin is an extremely good electrical insulator, with an electrical resistivity of 10¹⁷ ohm meter. This is better than nearly all other materials except some plastics (notably teflon).

[edit] Liquid paraffin

Liquid paraffin has a number of names, including nujol, mineral spirits, adepsine oil, alboline, glymol, liquid paraffin, medicinal paraffin, saxol, or USP mineral oil. It is often used in infrared spectroscopy, as it has a relatively uncomplicated IR spectrum. When the sample to be tested is made into a mull (a very thick solution), liquid paraffin is added so it can be spread on the disks to be tested. Liquid paraffin is also excellent for helping bowel movement in persons suffering chronic constipation.

[edit] Uses

Candlemaking

Coatings for waxed paper or cloth.

Food-grade paraffin wax

is used in some candies to make them look shiny. Although edible, it is nondigestible; it passes right through the body without being broken down.

Non-food grade paraffin wax can contain oils and other impurities which may be toxic or harmful.

Magic Shell

Coating for many kinds of hard cheese, like Edam cheese.

Sealing jars, cans, and bottles.

A key component in wax used for investment casting.

As anti-caking, moisture repellent, and dustbinding coatings for fertilizers.

Preparing specimens for histology.

Solid propellant for hybrid rocket motors.

In dermatology, as an emollient (moisturiser).

Surfing, for grip on surfboards as a component of surfwax.

The primary component of glide wax, used on skis and snowboards.

Microwax as a food additive, a glazing agent with E number E905. The paraffin test is used in forensics to detect granules of gunpowder in the hand of a shooting suspect.

A fire performance fuel.

Blends of paraffin and micro waxes in rubber compounds as anti-ozonant agent, to prevent cracking of the rubber. The antiozonant waxes can today be produced from synthetic waxes, FT wax, and Fischer Tropsch wax.

Impure mixtures of mostly paraffin wax are used in wax baths for beauty and therapy purposes.

Paraffin wax is not used much to make original models for casting, as it is relatively brittle at room temperature and usually cannot be cold-carved without excessive chipping and breaking. Soft, pliable waxes such as beeswax are preferred for modeling.

[edit] See also

Paraffin oil

Mineral oil

[edit] References

Liquid paraffin / nujol information

v • d • eE numbers

Colours (E100-199) • Preservatives (E200-299) • Antioxidants & Acidity regulators (E300-399) • Thickeners, stabilisers & emulsifiers (E400-499) • pH regulators & anti-caking agents (E500-599) • Flavour enhancers (E600-699) • Miscellaneous (E900-999) • Additional chemicals (E1100-1599)

Waxes (E900-909) • Synthetic glazes (E910-919) • Improving agents (E920-929) • Packaging gases (E930-949) • Sweeteners (E950-969) • Foaming agents (E990-999)

Dimethyl polysiloxane (E900) • Beeswax (E901) • Candelilla wax (E902) • Carnauba wax (E903) • Shellac (E904) • Paraffins (E905) • Mineral oil (E905a) • Vaseline (E905b) • Microcrystalline wax (E905c) • Gum benzoic (E906) • Crystalline wax (E907) • Rice bran wax (E908)

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Categories: Waxes | Alkanes | Petroleum products | Food additives

ViewsArticle Discussion Edit this page History Personal toolsSign in / create account Navigation

Main page

Featured content

Current events

Portals

Categories

Random article

Recent changes

interaction

Help

Community portal

Questions

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Search

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Wax

From Wikipedia, the free encyclopedia

Jump to: [navigation](#), [search](#)

This page is about the substance. For other meanings see [Wax](#) (disambiguation).

Wax has traditionally referred to a substance that is secreted by bees (beeswax) and used by them in constructing their honeycombs.

It is an imprecisely defined term generally understood to be a substance with properties similar to beeswax, namely

plastic (malleable) at normal ambient temperatures

a melting point above approximately 45 °C (113 °F) (which differentiates waxes from fats and oils)

a relatively low viscosity when melted (unlike many plastics)

insoluble in water

hydrophobic

Waxes may be natural or artificial. In addition to beeswax, carnauba (a vegetable wax) and paraffin (a petroleum wax) are commonly encountered waxes which occur naturally. Earwax is an oily substance found in the human ear. Some artificial materials that exhibit similar properties are also described as wax or waxy.

Chemically, a wax may be an ester of ethylene glycol (ethan-1,2-diol) and two fatty acids, as opposed to a fat which is an ester of glycerin (propan-1,2,3-triol) and three fatty acids. It may also be a combination of other fatty alcohols with fatty acids. It is a type of lipid.

Contents [hide]

1 Wax types

1.1 Animal and insect waxes

1.2 Vegetable waxes

1.3 Mineral waxes

1.4 Petroleum waxes

1.5 Synthetic waxes

2 See also

3 External link

[edit] Wax types

[edit] Animal and insect waxes

Beeswax - produced by honeybees

Chinese wax - produced by scale insects *Coccus ceriferus*

Shellac wax - from the lac insect *Coccus lacca*

Spermaceti - from the head cavities and blubber of the Sperm Whale

Lanolin (wool wax) - from the sebaceous glands of sheep

[edit] Vegetable waxes

Bayberry wax - from the surface of the berries of the bayberry shrub

Candelilla wax - from the Mexican shrubs *Euphorbia cerifera* and *E. antisyphilitica*

Carnauba wax - from the leaves of the Carnauba Palm

Castor wax - catalytically hydrogenated castor oil

Esparto wax - a byproduct of making paper from esparto grass

Japan wax - a vegetable tallow (not a true wax), from the berries of *Rhus* and *Toxicodendron* species

Jobba oil - pressed from the seeds of the jobba bush, a replacement for spermaceti

Ouricury wax - from the Brazilian Feather Palm

Rice bran wax - obtained from rice bran

[edit] Mineral waxes

Ceresin waxes

Montan wax - extracted from lignite and brown coal

Ozocerite - found in lignite beds

Peat waxes

[edit] Petroleum waxes

Paraffin wax - made of long-chain alkane hydrocarbons

Microcrystalline wax - with very fine crystalline structure

[edit] Synthetic waxes

Polyethylene waxes - based on polyethylene

Fischer-Tropsch waxes

Chemically modified waxes - usually esterified or saponified substituted amide waxes

polymerized α -olefins

[edit] See also

Adipocere (grave wax, mortuary wax)

Bayberry

Bikini wax

Candles

Earwax or cerumen

Hair wax

Hot wax

Ruby Wax

SC Johnson Company

Sealing wax
Ski wax
Surfwax
Wax play
Waxing for hair removal
Wax museum
Wood finishing

[edit] External link

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Category: Waxes

ViewsArticle Discussion Edit this page History Personal toolsSign in / create account Navigation

Main Page

Community Portal

Featured content

Current events

Recent changes

Random article

Help

Contact Wikipedia

Donations

Search

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Printable version

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Adipocere

From Wikipedia, the free encyclopedia

Jump to: navigation, search

Adipocere or grave wax or mortuary wax is the insoluble fatty acids left as residue from pre-existing fats from decomposing material such as a human cadaver. It is formed by the slow hydrolysis of fats in wet ground and can occur in both embalmed and untreated bodies. It is generally believed to have first been discovered by the Frenchman Fourcroy in the 18th century; however, Sir Thomas Browne describes this substance in his discourse, Hydriotaphia, Urn Burial of 1658:

"In a Hydropicall body ten years buried in a Church-yard, we met with a fat concretion, where the nitre of the Earth, and the salt and lixivious liquor of the body, had coagulated large lumps of fat, into the consistence of the hardest castle-soap: wherof part remaineth with us." Adipocere inhibits the growth of bacteria, and can go some way to protecting a corpse against decomposition. It begins to form within about a month of death, and can persist on the remains for centuries. Since it forms through hydrolysis, it does so more readily in humid environments or even underwater. An exposed body is unlikely to form deposits of adipocere. The process of adipocere formation is also known as saponification.

Adipocere is also the name of a French independent record label, specializing in metal (music).

[edit] Sources

J.S.Finch. A Doctor's life of Science and Faith. Princeton 1950

C.A.Patrides, ed. Sir Thomas Browne The Major Works. Penguin 1977

[edit] External links

Adipocere - A collection of resources on soap mummies and adipocere formation.

[1] - the official site of the record label

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Category: Lipids

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Saponification

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Jump to: navigation, search

Saponification of a lipid with potassium hydroxide.Saponification is the hydrolysis of an ester under basic conditions to form an alcohol and the salt of the acid. Saponification is commonly used to refer to the reaction

of a metallic alkali (base) with a fat or oil to form soap. Saponifiable substances are those that can be converted into soap.

$\text{CH}_2\text{-OOC-R - CH-OOC-R - CH}_2\text{-OOC-R (fat) + 3 NaOH (or KOH)}$
both heated ?

$\text{CH}_2\text{-OH -CH-OH - CH}_2\text{-OH (glycerol) + 3 R-CO}_2\text{-Na (soap)}$
 $\text{R}=(\text{CH}_2)_{14}\text{CH}_3$ (for example)

Lye is a form of sodium hydroxide (NaOH) which is a caustic base. If NaOH is used a hard soap is formed, whereas a soft soap is formed when potassium hydroxide (KOH) is used.

Vegetable oils and animal fats are fatty esters in the form of triglycerides. The alkali breaks the ester bond and releases the fatty acid and glycerol.

The soap is salted out by precipitating it with saturated sodium chloride.

Contents [hide]

- 1 Saponification in corpses
- 2 Saponification in fire extinguishers
- 3 See also
- 4 External links

[edit] Saponification in corpses

Saponification can also refer to the conversion of fat and other soft tissue in a corpse into adipocere, often called "grave wax." This process is more common where the amount of fatty tissue is high, the agents of decomposition absent or only minutely present, and the burial ground is particularly alkaline.

[edit] Saponification in fire extinguishers

Fires involving cooking fats and oils should be extinguished with a wet chemical extinguisher. Extinguishers of this type are designed to extinguish cooking fats and oils through saponification. The

extinguishing agent rapidly converts the burning substance to a non-combustible soap. This process is endothermic, meaning it absorbs energy (in this case, thermal energy) from its surroundings, eliminating the fire and decreasing the temperature.

[edit] See also
Saponification value
Soapmaking
Unsaponifiable

[edit] External links
About Candle and Soap Making - Soap making projects, instructions, recipes, suppliers and more from About.com
Glossary for the Modern Soap Maker - A collection of terms, definitions and acronyms for today's soap maker.
Adipocere - A collection of resources on soap mummies and adipocere formation.
Create The Dream Magazine - Magazine for Artisans of Soap, Candle, and Herbal Products.
Creative Artisans Network.
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ADIPOCERE

-Also Known By The Terms-

Grave Wax

Mortuary Fat

Saponified Flesh

-Which Create The Phenomenon Termed-

Soap Mummies

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Adipocere

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Before visiting this web site, did you know about adipocere?

Yes

No

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THIS SITE'S CREATOR.....**

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A question for those who had planned a traditional burial or entombment for themselves-- after reading and viewing this site, do you now wish to be cremated instead?

No- I will still be buried or entombed as planned

I am now unsure about my plans to be buried/entombed

Yes- I now will be cremated as a result of visiting this site

None of the above- I had planned to be cremated anyway

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for death-related news

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The New World Of Adipocere Forums...

It's Not Just For Death Anymore.

Adipocere Standard Time Is: 12:24:43 AM on Wednesday, 20

December, 2006a site about the soapy, waxy substance many of us will one day become.

Chat at:

AOL- AIM adipocere1066

or Yahoo- goointhecoffin

Musical Interlude: LATHE OF HEAVEN

HELP NEW ORLEANS & THE GULF COAST

Click here to add text.

DOOM DEATH BURIAL

AND

OLDIES: GRAVEYARD SOAPBOX

RADIO BY ADIPOCERE

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Images1

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

This woman drowned and was submerged for seven months. "Wet" adipocere formation throughout nearly all fatty tissue in her body.

Front

Introduction

Chemistry

History

Images2

Oh, look at this little angel's face! So precious. Sometimes adipocere formation, under the right circumstances (and with a little help from a friend- in this case an especially gifted embalmer), can create a masterpiece to withstand the tests of time and biology. This beautiful little three year old girl, passed away in 1920; the photo was taken in about 1995! Palermo, Italy.

Three studies of "dry" adipocere formation on human skulls. Top: eyes, brain and right cheek fat all turned into adipocere. Unknown burial time, but possibly many years. Right: extensive adipocere formation in and on skull. Corpse had been stuffed in a dry sewer for two years. Below: more adipocere in the usual places. Elapsed time between death and photo is unknown.

Perhaps the most famous example of adipocere formation in the world. "The Soap Lady" is thought to have passed away during the Yellow Fever epidemic of 1892, at Philadelphia USA. Some eighty years later she was exhumed, perhaps as the result of a redevelopment of an old graveyard. The Soap Lady has resided in the Mutter Museum ever since. Photo courtesy of Roadside America.

Julia Buccola Petta was an Italian-American housewife living in Chicago after World War One. On the occasion of the birth of her second child, she died. She was interred in famous Mount Carmel cemetery, site of the Chicago Archdiocese's Cardinal Crypts, Al Capone's grave, and many others. Buccola's ghost, legend has it, visited her mother and asked to have her corpse exhumed. For whatever actual reason, the corpse was disinterred six years after Mrs. Buccola's death; the photo plainly shows a corpse with a great deal of adipocere formation in the face- but also a corpse very well preserved. Note the stains (Mud? Mold? Body fluid purge?) which can be seen on the light colored fabric of the casket lining. This occurred at some point during its six years in the ground. The alkaline soil at Mount Carmel is likely responsible for this so-called "miracle".

Concretions, like the three spherical

objects near the bottom of the picture on the right, are found in Ohio and

elsewhere. They are likely a result of adipocere falling to the bottom of a

long-since disappeared sea or lake.

Minerals and other organic debris

became attached to the adipocere,

which acted as a nucleus for the

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This series of seven autopsy photographs are from the investigation of a tragic auto accident, whereupon a car drove into a Japanese lake in 1982. The car and its occupant, a 41 year-old woman, were missing for nine years. The automobile and driver were discovered by amateur divers on holiday in 1991. Clockwise from top left: the car being lifted from the bottom of

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This death

was ruled a suicide.

This poor sailor drowned and was in the sea for some months before his adipocere-laden body was fished out of the briny deep. Note the condition of ear lobes and nose. Surprisingly, most of his corpse was not consumed by sea creatures, which is unusual in open water.

The whitish/yellow bits in this photo is very infamous adipocere indeed. That's the decomposed toothy smile of the late Lee Harvey Oswald, accused assassin of President John F. Kennedy. Oswald was himself gunned down by Dallas nightclub owner Jack Ruby on 23/11/1963, and was buried in a Texas cemetery. Nearly 18 years later, assassination conspiracy theorists' lingering doubts concerning exactly who was buried in Oswald's grave prompted an exhumation and a new autopsy. While no full facial photos were allowed by agreement with LHO's widow, a tight shot of his teeth was permitted, for identification purposes. The condition of the corpse was described as poor, due to the fact that the burial vault LHO's casket was deposited in had cracked open at some point, allowing water to fill it. The casket itself was full of putrid water. However, some adipocere still clung to parts of Oswald's remains, as evidenced in this image. Note the wire, used to secure the jaw for open casket display at the time of embalming in 1963. By the way, the remains were positively identified as being those of Lee Harvey Oswald. He was reburied in a new vault and casket, presumably in a dry grave. See Links page for LHO's official autopsy report.

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waterlogged. Just before reburial, the casket was opened for this photograph. During the transfer to the new cemetery, the water drained out of the porous receptacle. This grave had filled with ground water much as Lee Harvey Oswald's resting place had. Unfortunately, this is a rather common occurrence in cemeteries. Adipocere formation is complete.

Two years, 18 years....

how about 66 million years' burial? These two photos are of the now-famous fossilized dinosaur heart and other tissues. An extraordinary find, it will likely lead

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"nature's own conservator".

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Return to the top of this page

Photo by Adipocere; from the Cemetery Monuments web site.

Notables

*****VISIT THE CHAT ROOM ON THE FRONT PAGE**

TO DISCUSS WITH FELLOW READERS.

Links

-ADIPOCERE STORE-----Natural Grave Wax Processes Paraffin Wax alkane hydrocarbons

Hello:

I was thinking about ways to preserve deceased people

better , maybe in wax for the hope of a medical resurrection one day, as cryonics is cold and expensive and not available for most of the people.

a copy and pasted site on grave wax

rice wax paper

natural grave wax

-ADIPOCERE

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

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Return to the top of this page

Photo by Adipocere; from the Cemetery Monuments web site.

Notables

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Links

-ADIPOCERE STORE-

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Paraffin

From Wikipedia, the free encyclopedia

(Redirected from Paraffin wax)

Jump to: navigation, search

This article is about the waxy mildly combustible substance. For the highly flammable fuel called "paraffin" in Britain, see Kerosene. Paraffin is a common name for a group of alkane hydrocarbons with the general formula C_nH_{2n+2} , where n is greater than about 20, discovered by Carl Reichenbach. It is distinct from the fuel known in Britain as paraffin oil or just paraffin, which is called kerosene in American English. Usage of the term varies in other countries, leading to confusion about which substance is being referred to. The solid forms of paraffin are called paraffin wax. Paraffin is also a technical name for an alkane in general, but in most cases it refers specifically to a linear, or normal alkane, while branched, or isoalkane are also called isoparaffins. The name is derived from the Latin parum (= barely) + affinis with the meaning here of "lacking affinity", or "lacking reactivity").

Contents [hide]

1 Physical and chemical properties

2 Liquid paraffin

3 Uses

4 See also

5 References

[edit] Physical and chemical properties

It is mostly found as a white, odorless, tasteless, waxy solid, with a typical melting point between about 47 °C and 65 °C. It is insoluble in water, but soluble in ether, benzene, and certain esters. Paraffin is unaffected by most common chemical reagents, but burns readily.

Pure paraffin is an extremely good electrical insulator, with an electrical resistivity of 10¹⁷ ohm meter. This is better than nearly all other materials except some plastics (notably teflon).

[edit] Liquid paraffin

Liquid paraffin has a number of names, including nujol, mineral spirits, adepsine oil, alboline, glymol, liquid paraffin, medicinal paraffin, saxol, or USP mineral oil. It is often used in infrared spectroscopy, as it has a relatively uncomplicated IR spectrum. When the sample to be tested is made into a mull (a very thick solution), liquid paraffin is added so it can be spread on the disks to be tested. Liquid paraffin is also excellent for helping bowel movement in persons suffering chronic constipation.

[edit] Uses

Candlemaking

Coatings for waxed paper or cloth.

Food-grade paraffin wax

is used in some candies to make them look shiny. Although edible, it is nondigestible; it passes right through the body without being broken down.

Non-food grade paraffin wax can contain oils and other impurities which may be toxic or harmful.

Magic Shell

Coating for many kinds of hard cheese, like Edam cheese.

Sealing jars, cans, and bottles.

A key component in wax used for investment casting.

As anti-caking, moisture repellent, and dustbinding coatings for fertilizers.

Preparing specimens for histology.

Solid propellant for hybrid rocket motors.

In dermatology, as an emollient (moisturiser).

Surfing, for grip on surfboards as a component of surfwax.

The primary component of glide wax, used on skis and snowboards.

Microwax as a food additive, a glazing agent with E number E905.

The paraffin test is used in forensics to detect granules of gunpowder in the hand of a shooting suspect.

A fire performance fuel.

Blends of paraffin and micro waxes in rubber compounds as anti-ozonant agent, to prevent cracking of the rubber. The antiozonant waxes can today be produced from synthetic waxes, FT wax, and Fischer Tropsch wax.

Impure mixtures of mostly paraffin wax are used in wax baths for beauty and therapy purposes.

Paraffin wax is not used much to make original models for casting, as it is relatively brittle at room temperature and usually cannot be cold-carved without excessive chipping and breaking. Soft, pliable waxes such as beeswax are preferred for modeling.

[edit] See also

Paraffin oil

Mineral oil

[edit] References

Liquid paraffin / nujol information

v • d • eE numbers

Colours (E100-199) • Preservatives (E200-299) • Antioxidants & Acidity regulators (E300-399) • Thickeners, stabilisers & emulsifiers (E400-499) • pH regulators & anti-caking agents (E500-599) • Flavour enhancers (E600-699) • Miscellaneous (E900-999) • Additional chemicals (E1100-1599)

Waxes (E900-909) • Synthetic glazes (E910-919) • Improving agents (E920-929) • Packaging gases (E930-949) • Sweeteners (E950-969) • Foaming agents (E990-999)

Dimethyl polysiloxane (E900) • Beeswax (E901) • Candelilla wax (E902) • Carnauba wax (E903) • Shellac (E904) • Paraffins (E905) • Mineral oil (E905a) • Vaseline (E905b) • Microcrystalline wax (E905c) • Gum benzoic (E906) • Crystalline wax (E907) • Rice bran wax (E908)

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Categories: Waxes | Alkanes | Petroleum products | Food additives

ViewsArticle Discussion Edit this page History Personal toolsSign in / create account Navigation

Main page

Featured content

Current events

Portals

Categories

Random article

Recent changes

interaction

Help

Community portal

Questions

Contact Wikipedia

Donations

Search

Toolbox

What links here

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Wax

From Wikipedia, the free encyclopedia

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This page is about the substance. For other meanings see Wax (disambiguation).

Wax has traditionally referred to a substance that is secreted by bees (beeswax) and used by them in constructing their honeycombs.

It is an imprecisely defined term generally understood to be a substance with properties similar to beeswax, namely

plastic (malleable) at normal ambient temperatures

a melting point above approximately 45 °C (113 °F) (which differentiates waxes from fats and oils)

a relatively low viscosity when melted (unlike many plastics)

insoluble in water

hydrophobic

Waxes may be natural or artificial. In addition to beeswax, carnauba (a vegetable wax) and paraffin (a petroleum wax) are commonly encountered waxes which occur naturally. Earwax is an oily substance found in the human ear. Some artificial materials that exhibit similar properties are also described as wax or waxy.

Chemically, a wax may be an ester of ethylene glycol (ethan-1,2-diol) and two fatty acids, as opposed to a fat which is an ester of glycerin (propan-1,2,3-triol) and three fatty acids. It may also be a combination of other fatty alcohols with fatty acids. It is a type of lipid.

Contents [hide]

1 Wax types

1.1 Animal and insect waxes

1.2 Vegetable waxes

1.3 Mineral waxes

1.4 Petroleum waxes

1.5 Synthetic waxes

2 See also

3 External link

[edit] Wax types

[edit] Animal and insect waxes

Beeswax - produced by honeybees

Chinese wax - produced by scale insects *Coccus ceriferus*

Shellac wax - from the lac insect *Coccus lacca*

Spermaceti - from the head cavities and blubber of the Sperm Whale
Lanolin (wool wax) - from the sebaceous glands of sheep

[edit] Vegetable waxes

Bayberry wax - from the surface of the berries of the bayberry shrub

Candelilla wax - from the Mexican shrubs *Euphorbia cerifera* and *E. antisiphilitica*

Carnauba wax - from the leaves of the Carnauba Palm

Castor wax - catalytically hydrogenated castor oil

Esparto wax - a byproduct of making paper from esparto grass

Japan wax - a vegetable tallow (not a true wax), from the berries of *Rhus* and *Toxicodendron* species

Jojoba oil - pressed from the seeds of the jojoba bush, a replacement for spermaceti

Ouricury wax - from the Brazilian Feather Palm

Rice bran wax - obtained from rice bran

[edit] Mineral waxes

Ceresin waxes

Montan wax - extracted from lignite and brown coal

Ozocerite - found in lignite beds

Peat waxes

[edit] Petroleum waxes

Paraffin wax - made of long-chain alkane hydrocarbons

Microcrystalline wax - with very fine crystalline structure

[edit] Synthetic waxes

Polyethylene waxes - based on polyethylene

Fischer-Tropsch waxes

Chemically modified waxes - usually esterified or saponified
substituted amide waxes

polymerized α -olefins

[edit] See also

Adipocere (grave wax, mortuary wax)

Bayberry

Bikini wax

Candles

Earwax or cerumen
Hair wax
Hot wax
Ruby Wax
SC Johnson Company
Sealing wax
Ski wax
Surfwax
Wax play
Waxing for hair removal
Wax museum
Wood finishing

[edit] External link

Waxes

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Category: Waxes

**ViewsArticle Discussion Edit this page History Personal toolsSign in /
create account Navigation**

Main Page

Community Portal

Featured content

Current events

Recent changes

Random article

Help

Contact Wikipedia

Donations

Search

Toolbox

What links here

Related changes

Upload file

Special pages

Printable version

Permanent link

Cite this article

In other languages

???????

Català

Cesky

Dansk

Deutsch

Español

Esperanto

Français

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Adipocere

From Wikipedia, the free encyclopedia

Jump to: navigation, search

Adipocere or grave wax or mortuary wax is the insoluble fatty acids left as residue from pre-existing fats from decomposing material such as a human cadaver. It is formed by the slow hydrolysis of fats in wet

ground and can occur in both embalmed and untreated bodies. It is generally believed to have first been discovered by the Frenchman Fourcroy in the 18th century; however, Sir Thomas Browne describes this substance in his discourse, Hydriotaphia, Urn Burial of 1658:

"In a Hydropicall body ten years buried in a Church-yard, we met with a fat concretion, where the nitre of the Earth, and the salt and lixivious liquor of the body, had coagulated large lumps of fat, into the consistence of the hardest castle-soap: wherof part remaineth with us." Adipocere inhibits the growth of bacteria, and can go some way to protecting a corpse against decomposition. It begins to form within about a month of death, and can persist on the remains for centuries. Since it forms through hydrolysis, it does so more readily in humid environments or even underwater. An exposed body is unlikely to form deposits of adipocere. The process of adipocere formation is also known as saponification.

Adipocere is also the name of a French independent record label, specializing in metal (music).

[edit] Sources

J.S.Finch. A Doctor's life of Science and Faith. Princeton 1950

C.A.Patrides, ed. Sir Thomas Browne The Major Works. Penguin 1977

[edit] External links

Adipocere - A collection of resources on soap mummies and adipocere formation.

[1] - the official site of the record label

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Category: Lipids

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Saponification

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Jump to: [navigation](#), [search](#)

Saponification of a lipid with potassium hydroxide. Saponification is the hydrolysis of an ester under basic conditions to form an alcohol and the salt of the acid. Saponification is commonly used to refer to the reaction of a metallic alkali (base) with a fat or oil to form soap. Saponifiable substances are those that can be converted into soap.

**$\text{CH}_2\text{-OOC-R} - \text{CH-OOC-R} - \text{CH}_2\text{-OOC-R}$ (fat) + 3 NaOH (or KOH)
both heated ?**

**$\text{CH}_2\text{-OH} - \text{CH-OH} - \text{CH}_2\text{-OH}$ (glycerol) + 3 R-CO₂-Na (soap)
R=(CH₂)₁₄CH₃ (for example)**

Lye is a form of sodium hydroxide (NaOH) which is a caustic base. If NaOH is used a hard soap is formed, whereas a soft soap is formed when potassium hydroxide (KOH) is used.

Vegetable oils and animal fats are fatty esters in the form of triglycerides. The alkali breaks the ester bond and releases the fatty acid and glycerol.

The soap is salted out by precipitating it with saturated sodium chloride.

Contents [hide]

- 1 Saponification in corpses**
- 2 Saponification in fire extinguishers**
- 3 See also**
- 4 External links**

[edit] Saponification in corpses

Saponification can also refer to the conversion of fat and other soft tissue in a corpse into adipocere, often called "grave wax." This process is more common where the amount of fatty tissue is high, the agents of decomposition absent or only minutely present, and the burial ground is particularly alkaline.

[edit] Saponification in fire extinguishers

Fires involving cooking fats and oils should be extinguished with a wet chemical extinguisher. Extinguishers of this type are designed to extinguish cooking fats and oils through saponification. The extinguishing agent rapidly converts the burning substance to a non-combustible soap. This process is endothermic, meaning it absorbs energy (in this case, thermal energy) from its surroundings, eliminating the fire and decreasing the temperature.

[edit] See also

Saponification value

Soapmaking

Unsaponifiable

[edit] External links

About Candle and Soap Making - Soap making projects, instructions, recipes, suppliers and more from About.com

Glossary for the Modern Soap Maker - A collection of terms, definitions and acronyms for today's soap maker.

Adipocere - A collection of resources on soap mummies and adipocere formation.

Create The Dream Magazine - Magazine for Artisans of Soap, Candle, and Herbal Products.

Creative Artisans Network.

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Categories: Organic chemistry | Chemical processes | Soaps

ViewsArticle Discussion Edit this page History Personal toolsSign in / create account Navigation

Main page

Featured content

Current events

Portals

Categories

Random article

Recent changes

interaction

Help

Community portal
Questions
Contact Wikipedia
Donations
Search
Toolbox
What links here
Related changes
Upload file
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ADIPOCERE

-Also Known By The Terms-

Grave Wax

Mortuary Fat

Saponified Flesh

-Which Create The Phenomenon Termed-

Soap Mummies

WARNING! This web site contains information and images of an extremely graphic nature. Viewer discretion is STRONGLY advised. This page was last decomposed on 16 December, 2006" HOMINIS FACTVS ADIPIS CERA"
Enter

Adipocere

Web Site

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photo by Matt Hucke-

from Graveyards of Chicago

Adipocere Pronunciation (soundcard needed)

as featured on ...

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PROBLEMS

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MONUMENTS

-A Serene Web Site-

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"CEMETERY STORIES", BY KATHERINE M. RAMSLAND

Buy It Here!

--Feel free to use this banner as you please--

Before visiting this web site, did you know about adipocere?

Yes

No

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Enter Keywords:

A question for those who had planned a traditional burial or entombment for themselves-- after reading and viewing this site, do you now wish to be cremated instead?

No- I will still be buried or entombed as planned

I am now unsure about my plans to be buried/entombed

Yes- I now will be cremated as a result of visiting this site

None of the above- I had planned to be cremated anyway

taphophilia.com

=visit=

for death-related news

-MERCHANDISE FOR SALE-

ADIPOCERE STORE

CEMETERY MONUMENTS STORE
=ADIMUNDO=

The New World Of Adipocere Forums...

It's Not Just For Death Anymore.

Adipocere Standard Time Is: 12:24:43 AM on Wednesday, 20

**December, 2006a site about the soapy, waxy substance many of us will
one day become.**

Chat at:

AOL- AIM adipocere1066

or Yahoo- gointhecoffin

Musical Interlude: LATHE OF HEAVEN

HELP NEW ORLEANS & THE GULF COAST

Click here to add text.

DOOM DEATH BURIAL

AND

OLDIES: GRAVEYARD SOAPBOX

RADIO BY ADIPOCERE

ON BLUEBEAT.COM

Images1

**This little baby died and was buried a few years prior to this
exhumation. Almost all flesh has been converted to adipocere. The
infant's tiny coffin is in the background. In the lower right corner a few
ribs are seen, extracted from the tiny corpse. On the table, an arm (or
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This woman drowned and was submerged for seven months. "Wet" adipocere formation throughout nearly all fatty tissue in her body.

Front

Introduction

Chemistry

History

Images2

Oh, look at this little angel's face! So precious. Sometimes adipocere formation, under the right circumstances (and with a little help from a friend- in this case an especially gifted embalmer), can create a masterpiece to withstand the tests of time and biology. This beautiful little three year old girl, passed away in 1920; the photo was taken in about 1995! Palermo, Italy.

Three studies of "dry" adipocere formation on human skulls. Top: eyes, brain and right cheek fat all turned into adipocere. Unknown burial time, but possibly many years. Right: extensive adipocere formation in and on skull. Corpse had been stuffed in a dry sewer for two years.

Below: more adipocere in the usual places. Elapsed time between death and photo is unknown.

Perhaps the most famous example of adipocere formation in the world. "The Soap Lady" is thought to have passed away during the Yellow Fever epidemic of 1892, at Philadelphia USA. Some eighty years later she was exhumed, perhaps as the result of a redevelopment of an old graveyard. The Soap Lady has resided in the Mutter Museum ever since. Photo courtesy of Roadside America.

Julia Buccola Petta was an Italian-American housewife living in Chicago after World War One. On the occasion of the birth of her second child, she died. She was interred in famous Mount Carmel cemetery, site of the Chicago Archdiocese's Cardinal Crypts, Al Capone's grave, and many others. Buccola's ghost, legend has it, visited her mother and asked to have her corpse exhumed. For whatever actual reason, the corpse was disinterred six years after Mrs. Buccola's death; the photo plainly shows a corpse with a great deal of adipocere formation in the face- but also a corpse very well preserved. Note the stains (Mud? Mold? Body fluid purge?) which can be seen on the light colored fabric of the casket lining. This occurred at some point during

its six years in the ground. The alkaline soil at Mount Carmel is likely responsible for this so-called "miracle".

Concretions, like the three spherical

objects near the bottom of the picture on the right, are found in Ohio and

elsewhere. They are likely a result of adipocere falling to the bottom of a

long-since disappeared sea or lake.

Minerals and other organic debris

became attached to the adipocere,

which acted as a nucleus for the

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on to become coal, oil, or

natural gas; but these became shale.

This series of seven autopsy photographs are from the investigation of a tragic auto accident, whereupon a car drove into a Japanese lake in 1982. The car and its occupant, a 41 year-old woman, were missing for nine years. The automobile and driver were discovered by amateur divers on holiday in 1991. Clockwise from top left: the car being lifted from the bottom of

the lake. Top right: view inside the car- victim still clothed. Upper right: at the morgue. Victim's clothing removed. Skull

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This death

was ruled a suicide.

This poor sailor drowned and was in the sea for some months before his adipocere-laden body was fished out of the briny deep. Note the condition of ear lobes and nose. Surprisingly, most of his corpse was not consumed by sea creatures, which is unusual in open water.

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"nature's own conservator".

Submissions

Return to the top of this page

Photo by Adipocere; from the Cemetery Monuments web site.

Notables

******VISIT THE CHAT ROOM ON THE FRONT PAGE**

TO DISCUSS WITH FELLOW READERS.

Links

-ADIPOCERE STORE-

Natural Grave Wax Processes Paraffin Wax alkane hydrocarbons

Hello:

I was thinking about ways to preserve deceased people

better , maybe in wax for the hope of a medical resurrection one day, as cryonics is cold and expensive and not available for most of the people.

a copy and pasted site on grave wax

rice wax paper

natural grave wax

-ADIPOCERE

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

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Return to the top of this page

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Notables

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Links

-ADIPOCERE STORE-

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Paraffin

From Wikipedia, the free encyclopedia

(Redirected from Paraffin wax)

Jump to: navigation, search

This article is about the waxy mildly combustible substance. For the highly flammable fuel called "paraffin" in Britain, see Kerosene. Paraffin is a common name for a group of alkane hydrocarbons with the general formula C_nH_{2n+2} , where n is greater than about 20, discovered by Carl Reichenbach. It is distinct from the fuel known in Britain as paraffin oil or just paraffin, which is called kerosene in American English. Usage of the term varies in other countries, leading to confusion about which substance is being referred to. The solid forms of paraffin are called paraffin wax. Paraffin is also a technical name for an alkane in general, but in most cases it refers specifically to a linear, or normal alkane, while branched, or isoalkane are also called isoparaffins. The name is derived from the Latin parum (= barely) + affinis with the meaning here of "lacking affinity", or "lacking reactivity").

Contents [hide]

1 Physical and chemical properties

2 Liquid paraffin

3 Uses

4 See also

5 References

[edit] Physical and chemical properties

It is mostly found as a white, odorless, tasteless, waxy solid, with a typical melting point between about 47 °C and 65 °C. It is insoluble in water, but soluble in ether, benzene, and certain esters. Paraffin is unaffected by most common chemical reagents, but burns readily.

Pure paraffin is an extremely good electrical insulator, with an electrical resistivity of 10¹⁷ ohm meter. This is better than nearly all other materials except some plastics (notably teflon).

[edit] Liquid paraffin

Liquid paraffin has a number of names, including nujol, mineral spirits, adepsine oil, alboline, glymol, liquid paraffin, medicinal paraffin, saxol, or USP mineral oil. It is often used in infrared spectroscopy, as it has a relatively uncomplicated IR spectrum. When the sample to be tested is made into a mull (a very thick solution), liquid paraffin is added so it can be spread on the disks to be tested. Liquid paraffin is also excellent for helping bowel movement in persons suffering chronic constipation.

[edit] Uses

Candlemaking

Coatings for waxed paper or cloth.

Food-grade paraffin wax

is used in some candies to make them look shiny. Although edible, it is nondigestible; it passes right through the body without being broken down.

Non-food grade paraffin wax can contain oils and other impurities which may be toxic or harmful.

Magic Shell

Coating for many kinds of hard cheese, like Edam cheese.

Sealing jars, cans, and bottles.

A key component in wax used for investment casting.

As anti-caking, moisture repellent, and dustbinding coatings for fertilizers.

Preparing specimens for histology.

Solid propellant for hybrid rocket motors.

In dermatology, as an emollient (moisturiser).

Surfing, for grip on surfboards as a component of surfwax.

The primary component of glide wax, used on skis and snowboards.

Microwax as a food additive, a glazing agent with E number E905.

The paraffin test is used in forensics to detect granules of gunpowder in the hand of a shooting suspect.

A fire performance fuel.

Blends of paraffin and micro waxes in rubber compounds as anti-ozonant agent, to prevent cracking of the rubber. The antiozonant waxes can today be produced from synthetic waxes, FT wax, and Fischer Tropsch wax.

Impure mixtures of mostly paraffin wax are used in wax baths for beauty and therapy purposes.

Paraffin wax is not used much to make original models for casting, as it is relatively brittle at room temperature and usually cannot be cold-carved without excessive chipping and breaking. Soft, pliable waxes such as beeswax are preferred for modeling.

[edit] See also

Paraffin oil

Mineral oil

[edit] References

Liquid paraffin / nujol information

v • d • eE numbers

Colours (E100-199) • Preservatives (E200-299) • Antioxidants & Acidity regulators (E300-399) • Thickeners, stabilisers & emulsifiers (E400-499) • pH regulators & anti-caking agents (E500-599) • Flavour enhancers (E600-699) • Miscellaneous (E900-999) • Additional chemicals (E1100-1599)

Waxes (E900-909) • Synthetic glazes (E910-919) • Improving agents (E920-929) • Packaging gases (E930-949) • Sweeteners (E950-969) • Foaming agents (E990-999)

Dimethyl polysiloxane (E900) • Beeswax (E901) • Candelilla wax (E902) • Carnauba wax (E903) • Shellac (E904) • Paraffins (E905) • Mineral oil (E905a) • Vaseline (E905b) • Microcrystalline wax (E905c) • Gum benzoic (E906) • Crystalline wax (E907) • Rice bran wax (E908)

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Categories: [Waxes](#) | [Alkanes](#) | [Petroleum products](#) | [Food additives](#)

[Views](#)[Article](#) [Discussion](#) [Edit this page](#) [History](#) [Personal tools](#)[Sign in / create account](#) [Navigation](#)

[Main page](#)

[Featured content](#)

[Current events](#)

[Portals](#)

[Categories](#)

[Random article](#)

[Recent changes](#)

[interaction](#)

[Help](#)

[Community portal](#)

[Questions](#)

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Wax

From Wikipedia, the free encyclopedia

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This page is about the substance. For other meanings see Wax (disambiguation).

Wax has traditionally referred to a substance that is secreted by bees (beeswax) and used by them in constructing their honeycombs.

It is an imprecisely defined term generally understood to be a substance with properties similar to beeswax, namely

plastic (malleable) at normal ambient temperatures

a melting point above approximately 45 °C (113 °F) (which differentiates waxes from fats and oils)

a relatively low viscosity when melted (unlike many plastics)

insoluble in water

hydrophobic

Waxes may be natural or artificial. In addition to beeswax, carnauba (a vegetable wax) and paraffin (a petroleum wax) are commonly encountered waxes which occur naturally. Earwax is an oily substance found in the human ear. Some artificial materials that exhibit similar properties are also described as wax or waxy.

Chemically, a wax may be an ester of ethylene glycol (ethan-1,2-diol) and two fatty acids, as opposed to a fat which is an ester of glycerin (propan-1,2,3-triol) and three fatty acids. It may also be a combination of other fatty alcohols with fatty acids. It is a type of lipid.

Contents [hide]

1 Wax types

1.1 Animal and insect waxes

1.2 Vegetable waxes

1.3 Mineral waxes

1.4 Petroleum waxes

1.5 Synthetic waxes

2 See also

3 External link

[edit] Wax types

[edit] Animal and insect waxes

Beeswax - produced by honeybees

Chinese wax - produced by scale insects *Coccus ceriferus*

Shellac wax - from the lac insect *Coccus lacca*

Spermaceti - from the head cavities and blubber of the Sperm Whale

Lanolin (wool wax) - from the sebaceous glands of sheep

[edit] Vegetable waxes

Bayberry wax - from the surface of the berries of the bayberry shrub

Candelilla wax - from the Mexican shrubs *Euphorbia cerifera* and *E. antisiphilitica*

Carnauba wax - from the leaves of the Carnauba Palm

Castor wax - catalytically hydrogenated castor oil

Esparto wax - a byproduct of making paper from esparto grass

Japan wax - a vegetable tallow (not a true wax), from the berries of *Rhus* and *Toxicodendron* species

Jojoba oil - pressed from the seeds of the jojoba bush, a replacement for spermaceti

Ouricury wax - from the Brazilian Feather Palm

Rice bran wax - obtained from rice bran

[edit] Mineral waxes

Ceresin waxes

Montan wax - extracted from lignite and brown coal

Ozocerite - found in lignite beds

Peat waxes

[edit] Petroleum waxes

Paraffin wax - made of long-chain alkane hydrocarbons

Microcrystalline wax - with very fine crystalline structure

[edit] Synthetic waxes

Polyethylene waxes - based on polyethylene

Fischer-Tropsch waxes

Chemically modified waxes - usually esterified or saponified

substituted amide waxes
polymerized a-olefins

[edit] See also

Adipocere (grave wax, mortuary wax)

Bayberry

Bikini wax

Candles

Earwax or cerumen

Hair wax

Hot wax

Ruby Wax

SC Johnson Company

Sealing wax

Ski wax

Surfwax

Wax play

Waxing for hair removal

Wax museum

Wood finishing

[edit] External link

Waxes

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Category: Waxes

**ViewsArticle Discussion Edit this page History Personal toolsSign in /
create account Navigation**

Main Page

Community Portal

Featured content

Current events

Recent changes

Random article

Help

Contact Wikipedia

Donations

Search

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What links here
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Adipocere

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Adipocere or grave wax or mortuary wax is the insoluble fatty acids left as residue from pre-existing fats from decomposing material such as a human cadaver. It is formed by the slow hydrolysis of fats in wet ground and can occur in both embalmed and untreated bodies. It is generally believed to have first been discovered by the Frenchman Fourcroy in the 18th century; however, Sir Thomas Browne describes this substance in his discourse, Hydriotaphia, Urn Burial of 1658:

"In a Hydropicall body ten years buried in a Church-yard, we met with a fat concretion, where the nitre of the Earth, and the salt and lixivious liquor of the body, had coagulated large lumps of fat, into the consistence of the hardest castle-soap: wherof part remaineth with us." Adipocere inhibits the growth of bacteria, and can go some way to protecting a corpse against decomposition. It begins to form within about a month of death, and can persist on the remains for centuries. Since it forms through hydrolysis, it does so more readily in humid environments or even underwater. An exposed body is unlikely to form deposits of adipocere. The process of adipocere formation is also known as saponification.

Adipocere is also the name of a French independent record label, specializing in metal (music).

[edit] Sources

J.S.Finch. A Doctor's life of Science and Faith. Princeton 1950

C.A.Patrides, ed. Sir Thomas Browne The Major Works. Penguin 1977

[edit] External links

Adipocere - A collection of resources on soap mummies and adipocere formation.

[1] - the official site of the record label

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Category: Lipids

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Saponification

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Saponification of a lipid with potassium hydroxide. Saponification is the hydrolysis of an ester under basic conditions to form an alcohol and the salt of the acid. Saponification is commonly used to refer to the reaction of a metallic alkali (base) with a fat or oil to form soap. Saponifiable substances are those that can be converted into soap.

**CH₂-OOC-R - CH-OOC-R - CH₂-OOC-R (fat) + 3 NaOH (or KOH)
both heated ?**

CH₂-OH -CH-OH - CH₂-OH (glycerol) + 3 R-CO₂-Na (soap)

R=(CH₂)₁₄CH₃ (for example)

Lye is a form of sodium hydroxide (NaOH) which is a caustic base. If NaOH is used a hard soap is formed, whereas a soft soap is formed when potassium hydroxide (KOH) is used.

Vegetable oils and animal fats are fatty esters in the form of triglycerides. The alkali breaks the ester bond and releases the fatty acid and glycerol.

The soap is salted out by precipitating it with saturated sodium chloride.

Contents [hide]

1 Saponification in corpses

2 Saponification in fire extinguishers

3 See also

4 External links

[edit] Saponification in corpses

Saponification can also refer to the conversion of fat and other soft tissue in a corpse into adipocere, often called "grave wax." This process is more common where the amount of fatty tissue is high, the agents of decomposition absent or only minutely present, and the burial ground is particularly alkaline.

[edit] Saponification in fire extinguishers

Fires involving cooking fats and oils should be extinguished with a wet chemical extinguisher. Extinguishers of this type are designed to extinguish cooking fats and oils through saponification. The extinguishing agent rapidly converts the burning substance to a non-combustible soap. This process is endothermic, meaning it absorbs energy (in this case, thermal energy) from its surroundings, eliminating the fire and decreasing the temperature.

[edit] See also

Saponification value

Soapmaking

Unsaponifiable

[edit] External links

About Candle and Soap Making - Soap making projects, instructions, recipes, suppliers and more from About.com

Glossary for the Modern Soap Maker - A collection of terms, definitions and acronyms for today's soap maker.

Adipocere - A collection of resources on soap mummies and adipocere formation.

Create The Dream Magazine - Magazine for Artisans of Soap, Candle, and Herbal Products.

Creative Artisans Network.

Retrieved from "<http://en.wikipedia.org/wiki/Saponification>"

Categories: Organic chemistry | Chemical processes | Soaps

ViewsArticle Discussion Edit this page History Personal toolsSign in / create account Navigation

Main page

Featured content
Current events
Portals
Categories
Random article
Recent changes
interaction
Help
Community portal
Questions
Contact Wikipedia
Donations
Search
 Toolbox
What links here
Related changes
Upload file
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Permanent link
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Deutsch
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ADIPOCERE

-Also Known By The Terms-

Grave Wax

Mortuary Fat

Saponified Flesh

-Which Create The Phenomenon Termed-

Soap Mummies

**WARNING! This web site contains information and images of an extremely graphic nature. Viewer discretion is STRONGLY advised. This page was last decomposed on 16 December, 2006" HOMINIS FACTVS ADIPIS CERA"
Enter**

Adipocere

Web Site

Adipocere text is copyright 2000-2006 by ADIPOCERE.

Images presented on this site are found in the public domain of the internet or are credited to the source.

photo by Matt Hucke-

from Graveyards of Chicago

Adipocere Pronunciation (soundcard needed)

as featured on ...

MORBID FACT DU JOUR!

-Visit Our

Sister Site-

MAUSOLEUM

PROBLEMS

-Please Stop By-

CEMETERY

MONUMENTS

-A Serene Web Site-

Search:

Books Popular Music Classical Music Video Toys & Games Electronics

Keywords:

THIS WEB SITE IS FEATURED IN THE BOOK

"CEMETERY STORIES", BY KATHERINE M. RAMSLAND

Buy It Here!

--Feel free to use this banner as you please--

Before visiting this web site, did you know about adipocere?

Yes

No

OTHER WEBSITES BY

THIS SITE'S CREATOR.....

Enter Keywords:

A question for those who had planned a traditional burial or entombment for themselves-- after reading and viewing this site, do you now wish to be cremated instead?

No- I will still be buried or entombed as planned

I am now unsure about my plans to be buried/entombed

Yes- I now will be cremated as a result of visiting this site

None of the above- I had planned to be cremated anyway

taphophilia.com
=visit=
for death-related news
-MERCHANDISE FOR SALE-

ADIPOCERE STORE

CEMETERY MONUMENTS STORE
=ADIMUNDO=

The New World Of Adipocere Forums...

It's Not Just For Death Anymore.

Adipocere Standard Time Is: 12:24:43 AM on Wednesday, 20

**December, 2006a site about the soapy, waxy substance many of us will
one day become.**

Chat at:

AOL- AIM adipocere1066

or Yahoo- gointhecoffin

Musical Interlude: LATHE OF HEAVEN

HELP NEW ORLEANS & THE GULF COAST

Click here to add text.

DOOM DEATH BURIAL

AND

OLDIES: GRAVEYARD SOAPBOX

RADIO BY ADIPOCERE

ON BLUEBEAT.COM

Images1

This little baby died and was buried a few years prior to this exhumation. Almost all flesh has been converted to adipocere. The infant's tiny coffin is in the background. In the lower right corner a few ribs are seen, extracted from the tiny corpse. On the table, an arm (or two). Under the proper conditions, infants' small, chubby bodies will nearly completely turn into adipocere as they possess little muscle and few putrefying bacteria. Very sad, poignant, and ghastly.

This woman drowned and was submerged for seven months. "Wet" adipocere formation throughout nearly all fatty tissue in her body.

Front

Introduction

Chemistry

History

Images2

Oh, look at this little angel's face! So precious. Sometimes adipocere formation, under the right circumstances (and with a little help from a friend- in this case an especially gifted embalmer), can create a masterpiece to withstand the tests of time and biology. This beautiful little three year old girl, passed away in 1920; the photo was taken in about 1995! Palermo, Italy.

Three studies of "dry" adipocere formation on human skulls. Top: eyes, brain and right cheek fat all turned into adipocere. Unknown burial time, but possibly many years. Right: extensive adipocere formation in and on skull. Corpse had been stuffed in a dry sewer for two years.

Below: more adipocere in the usual places. Elapsed time between death and photo is unknown.

Perhaps the most famous example of adipocere formation in the world. "The Soap Lady" is thought to have passed away during the Yellow Fever epidemic of 1892, at Philadelphia USA. Some eighty years later she was exhumed, perhaps as the result of a redevelopment of an old graveyard. The Soap Lady has resided in the Mutter Museum ever since. Photo courtesy of Roadside America.

Julia Buccola Petta was an Italian-American housewife living in Chicago after World War One. On the occasion of the birth of her second child, she died. She was interred in famous Mount Carmel cemetery, site of the Chicago Archdiocese's Cardinal Crypts, Al

Capone's grave, and many others. Buccola's ghost, legend has it, visited her mother and asked to have her corpse exhumed. For whatever actual reason, the corpse was disinterred six years after Mrs. Buccola's death; the photo plainly shows a corpse with a great deal of adipocere formation in the face- but also a corpse very well preserved. Note the stains (Mud? Mold? Body fluid purge?) which can be seen on the light colored fabric of the casket lining. This occurred at some point during its six years in the ground. The alkaline soil at Mount Carmel is likely responsible for this so-called "miracle".

Concretions, like the three spherical

objects near the bottom of the picture on the right, are found in Ohio and

elsewhere. They are likely a result of adipocere falling to the bottom of a

long-since disappeared sea or lake.

Minerals and other organic debris

became attached to the adipocere,

which acted as a nucleus for the

concretion. These concretions, in the

right circumstances, could have gone

on to become coal, oil, or

natural gas; but these became shale.

This series of seven autopsy photographs are from the investigation of a tragic auto accident, whereupon a car drove into a Japanese lake in 1982. The car and it's occupant, a 41 year-old woman, were missing for nine years. The automobile and driver were discovered by amateur divers on holiday in 1991. Clockwise from top left: the car being lifted from the bottom of

the lake. Top right: view inside the car- victim still clothed. Upper right: at the morgue. Victim's clothing removed. Skull

has detached from adipocere and lower jaw bone. Note how adipocere formation has preserved virtually all her body, with exception of scalp. Middle right: view of victim's back side. This woman may not have been this stout in life; adipocere formation creates more volume than when flesh was alive. Lower right: it appears as though this victim may have died in a cadaveric spasm, owing to her posture; drowning victims often do. Bottom right: view of victim's lower half. Note panties (or

pantie crease marks on adipocere). Bottom left: close up of head,

with skull placed back into position. The adipocere has separated from the bone of the skull; quite understandable after nine years in water.

This death

was ruled a suicide.

This poor sailor drowned and was in the sea for some months before his adipocere-laden body was fished out of the briny deep. Note the condition of ear lobes and nose. Surprisingly, most of his corpse was not consumed by sea creatures, which is unusual in open water.

The whitish/yellow bits in this photo is very infamous adipocere indeed. That's the decomposed toothy smile of the late Lee Harvey Oswald, accused assassin of President John F. Kennedy. Oswald was himself gunned down by Dallas nightclub owner Jack Ruby on 23/11/1963, and was buried in a Texas cemetery. Nearly 18 years later, assassination conspiracy theorists' lingering doubts concerning exactly who was buried in Oswald's grave prompted an exhumation and a new autopsy. While no full facial photos were allowed by agreement with LHO's widow, a tight shot of his teeth was permitted, for identification purposes. The condition of the corpse was described as poor, due to the fact that the burial vault LHO's casket was deposited in had cracked open at some point, allowing water to fill it. The casket itself was full of putrid water. However, some adipocere still clung to parts of Oswald's remains, as evidenced in this image. Note the wire, used to secure the jaw for open casket display at the time of embalming in 1963. By the

way, the remains were positively identified as being those of Lee Harvey Oswald. He was reburied in a new vault and casket, presumably in a dry grave. See Links page for LHO's official autopsy report.

About two years in another wet grave. The gentleman was disinterred

for reburial in a different cemetery. The vault and it's contents were

waterlogged. Just before reburial, the casket was opened for this photograph. During the transfer to the new cemetery, the water drained out of the porous receptacle. This grave had filled with ground water much as Lee Harvey Oswald's resting place had. Unfortunately, this is a rather common occurrence in cemeteries. Adipocere formation is complete.

Two years, 18 years....

how about 66 million years' burial? These two photos are of the now-famous fossilized dinosaur heart and other tissues. An extraordinary find, it will likely lead

to many more such fossils being located and recognised for what they are: just another manifestation of the amazing preservative powers of the substance

called adipocere....

"nature's own conservator".

Submissions

Return to the top of this page

Photo by Adipocere; from the Cemetery Monuments web site.

Notables

****VISIT THE CHAT ROOM ON THE FRONT PAGE

TO DISCUSS WITH FELLOW READERS.

Links

-ADIPOCERE STORE-

Funding of Cryonic Burial Ice Field Studies

We plan on creating monetary Cryonic Cemetery Trusts with the people of Grise Friord, Resolute Bay, Arctic Bay, Clyde River, Pond Inlet and Qaanaaq as soon as we can.

Funding Log Jam

(1) We currently have \$50,000 in Lawful Money gold notes on deposit and exchange with the Federal Reserve bank in Washington DC under US Code Title 12 sec 342, Deposits and Exchanges of Lawful Money / National Bank notes, re Lawful Money gold notes where issued under US Code Title 12 sec 151-153 and made a legal tender along with some United States Federal Reserve and National Bank notes by and Act of Congress June 5th 1933 ,re; US Supreme Court case US vs Bankers Trust 1935

The Federal Reserve Bank MAY exchange said notes under US Code Title 12 sec 342 , but and another Act of Congress in 1935 did provide for the exchange of Lawful Money gold notes and other US currency, made a legal tender in 1935. The exchange is so old that the Washington DC Federal Reserve Attorney is currently reviewing the matter for the Federal Reserve , most likely if the 1935 Act of Congress was a mandate for the Federal Reserve to exchange said types of notes for a credit check into account. for goods and services.

We hold about \$40 million in Lawful Money gold notes and after the 2004 US income tax payment on Like kindred exchanges including money, we expect about \$20 million, this is not in the form of a US treasury check , just what we hold and they are not useable for goods or services, just legal tender and with protest.

National Bank Notes

In the meantime we are seeking an Independent National Bank Trust Company Charter with the OCC for a Cryonic Burial Trust, with assets of @\$50 Million Dollars in National Bank holder notes for US Military airbase at Thule Greenland if possible. it would be a Military Cryonic

Burial Trust as the National Bank Notes are subject to US Code Title 15 sec 77ppp with a prohibition of impairment of holders right to payment, but the notes are adverse and the US Military would be better to deposit them in a Cryonic Burial Trust for Thule US Airbase ice fields

We are doing our best to obtain Banking credit checks for Cryonic Cemetery / Burial Trusts with the people of Grise Friord, Resolute Bay, Arctic Bay, Clyde River, Pond Inlet and Qaanaaq

**Commissioner of Nunavut <NunavutCommissioner@gov.nu.ca> wrote:
Dear Brother Daniel Izzo:**

Thank you for your interesting letter. Your question regarding Cryonic burials in the frozen ice fields has come up before.

There are people living on the Ellesmere Island. They are all Inuit, surviving off the land and the seas. They are very close to Greenland and a lot of them are closely related. The nearest communities are Resolute Bay, Arctic Bay, Clyde River, Pond Inlet and Qaanaaq, Greenland.

Before your question can be answered, the people of Grise Friord, Resolute Bay, Arctic Bay, Clyde River, Pond Inlet and Qaanaaq will have to be fully consulted and have proper meetings. This could be a lengthy process.

Study the ice field patterns and learn from the Inuit. Inuit know that the ice fields are always moving and with the global warming happening faster than predicted, one never knows what might happen to the burial ice fields.

Thank you for writing.

Sincerely,

Ann Meekitjuk Hanson, C.M.

Commissioner of Nunavut.

-----Original Message-----

From: Brother Daniel Izzo

[mailto:Brother.Daniel.Izzo@webhosts.nunanet.com]

Sent: Friday, May 20, 2005 10:39 PM

To: Commissioner of Nunavut

Subject: Commissioner's Web Site

**Below is the comments from the web site. It was submitted by
Brother Daniel Izzo on Friday, May 20, 2005 at 20:39:07**

email: revdanielizzo@yahoo.com

subject: Commissioner's Web Site

Grade level: Masters in Applied Science

Feedback: To: The Honorable Government of Nunavat

Dear Sirs:

re Ice Field Location for a Natural Cryonic Cemetery

**Hi my name is Br Daniel Izzo and I am with the Cryonic Life Insurance
Company of New York,**

**Are there any pieces of Ellesmere Island Ice Cap Real Estate Ice
Fields, for a Natural Cryonic cemetery being offered for sale, that is
near a Nunavat Ellesmere Island Ice Cap ?**

**We only need a nominal few acres and don't expect to be very active
until we are granted a National Bank Charter with the US OCC as an
independent trust, are looking for a small ice field cemetery location
and are willing to pay for it.**

We are currently looking to secure and purchase an Ice Field Glacier

cemetery location, for low cost natural cryonic preservation @\$1,5000 , plus burial box and transportation, cheaper than traditional burial for the hope in a scientific resurrection of the dead body.

Many people would like to be brought back from their deaths if it is possible in the future and many people would like to be frozen after death to secure the same if it was affordable and available to them, sadly it is not this is the reason I am writing to you.

Are there any pieces of Ellesmere Island Ice Cap Real Estate for a Natural Cryonic cemetery being offered for sale, that is near a Nunavut Ellesmere Island Ice Cap ?

Or if there is any Real Estate within the Ellesmere Ice Cap for sale please let us know

God and Cosmic Magnetic Force Bless You

and Thank You

Cryonic Life Insurance Company

Dept of General Resurrection

**Br Daniel Izzo
512 Onondaga Ave
Syracuse, NY 13207
315-472-5088**

below is a cut and paste document from our company

and again we are will to forward \$50,000 in US Lawful Money gold notes

US Code title 12 sec 151-153 made a US legal tender to secure the same and for your expenses

-

OFFER AND ASSIGNMENT OF CERTIFICATES TO THE UNITED STATES OF AMERICA FOR THE PURPOSES OF PROVIDING A MEDICAL SECURITY FROM DEATH: A MILITARY CRYPT VOUCHER TRUST FUND FOR MILITARY PRESERVATION AND HOPE IN THE RESURRECTION OF THE DEAD BODY.

For value received from The United States of America, I, Rev. Daniel Izzo, of 512 Onondaga Ave, Syracuse New York 13207, wish to deliver and assign to the United States @ \$50 Million Dollars to \$60 Million Dollars in National Bank holder notes, for the puposes of funding a Military Personnel Preservation Crypt voucher Trust Fund for Military Persons and other persons, killed in the line of duty, who would like a chance and a hope in Medical and Spiritual Resurrection of the Dead Body and Preservation for the same, to the United States Attorney's Office assignee in Trust certain : " Adverse " and hostile uncanceled, Citibank N.A. Notes, Registered or Endorsed , mainly in the name of Cede & Co the Street name for the \$19 Trillion Depository Trust Company, part of the Securites and Exchange Commission, certain Debentures that are ADVERSE and CALLED and alleged to have : (1) not been cremated and thrown into garbage and collections (2) transfered to the Franklin Mint @1990 or (4) are part of a ongoing FBI investigation of alleged lost or stolen securities story with different versions from Europe and the United States. (see SEC fine of Citibank NA on uncanceled certificates(@ 1993)

I believe that the certificates are genuine and, to my knowledge, useful to the United States as National Bank notes and under USCA Title 15 sec 77ppp and that I have the legal right to hold and transfer them to the United States.

As you can read, I now have crisis induced mental health problems and am affraid of people and can not properly create a needed Military Crypt Voucher Trust and work with Citibank NA under USCA Title 15 sec 77ppp (Prohibition of Impairment of Holders Right to Payment, record date.) to simply (1) deposit said National Bank holder notes with Citibank NA , add them to Trust account and draw a check for goods and services for the MILITARY CRYPT VOUCHER TRUST FUND

Therefore: I appoint the United States Attorney's Office and Department of Justice, assignee my attorney in fact to effect a MILITARY CRYPT VOUCHER TRUST FUND FOR PRESERVATION AND HOPE IN THE RESURRECTION OF THE DEAD BODY with full power of substitution in the premises after acceptance and delivery of said notes to the United States Attorney's Office.

Dated September 10th 2005

**Cryonic Life Insurance Company
Dept of General Resurrection
Rev. Daniel Izzo**

Funniest Joke of the Decade: The Bogus National Debt

OK Here's the Joke:

(1)

**The U.S. Congress asks the Federal Reserve Private Banks
to borrow some Dollars on loan .**

(2)

The Federal Reserve Private Banks say:

**" OK, we will loan you United States DOLLARS " at interest ,
but never gives Congress Dollars ,
instead they give Congress ,**

**valueless paper promises to pay in Dollars ,
that aren't redeemable in Dollars .**

(3)

**So what does Congress owe the Federal Reserve Banks
if Congress never recieved any real Dollars ?**

Answer:

Maybe National Bank Notes ?

**(I am still laughing , after all these years Congress never need to
borrow Dollars anyways, it has trillions of dollars in grains of gold
under ground , at 15.9 grains of gold per dollar , it could just issue
UNITED STATES GOLD CERTIFICATES backed by its own unused
gold in abandoned / working gold mines)**

funny joke right ?

**Photo of a United States Gold Certificate can be backed by the United
States un mined underground GOLD at 15.9 grains of gold per Dollar
STILL AND PAYABLE IN LAB CREATED GOLD COINS**

**PHOTOS OF NATIONAL BANK NOTES ISSUED BY PRIVATE
BANKS FROM 1863 - 1935**

**MADE LEGAL TENDER BY THE ACT OF CONGRESS OF MAY
12TH 1933
(31 USCA 5103)**

**SHOULD CONGRESS ALLOW NATIONAL BANKS TO RE ISSUE
PAPER MONEY (PROMISES TO PAY IN DOLLARS AGAIN ?)**

LIKE THE 1929 NATIONAL BANK NOTE WAS ?

**IMAGINE YOUR LOCAL NATIONAL BANK BEING FREE FROM
FEDERAL RESERVE NOTES AND USING THEIR OWN PAPER
MONEY (PROMISES TO PAY IN DOLLARS)**

**WOULD USING BOTH FEDERAL RESERVE AND NATIONAL
BANK NOTES BE BETTER FOR THE UNITED STATES ?**

**In 1933 the United States had Six Kinds of United States Paper SMALL
SIZED Currency**

THEY WERE

**(1) NATIONAL BANK NOTES / NATIONAL CURRENCY BROWN
SEAL 1929) UP TO 1929-1935**

(2) SILVER CERTIFICATES UP TO 1957

(3) GOLD CERTIFICATES UP TO 1934

(4) UNITED STATES NOTES UP TO 1966

(5) FEDERAL RESERVE NOTES 1914 TO PRESENT

(6) FEDERAL RESERVE BANK NOTES BROWN SEAL 1929

Should Congress re open the U.S. Postal Savings Bank ?

and open a new

Iraqi Postal Savings Bank ,

to help promote peace and bring our troops home sooner ?

MONEY ENDS SUFFERING

**STOP Civilizations's torture of the U.S. Soldier , the defenders of the
U.S. Constitution the source of our freedoms**

**It would be nice if the United States gave our troops a certificate for a
crypt or a natural ice glacier cryonic burial box for a medical
resurrection of the dead body , just in case something happens and they
are killed.**

**The United States most likely would revive the deceased soldier and
they could have a 2nd chance at life.**

**also that certicate could help give a little more security from death to
our troops in Iraq (just in case)**

**COULD THE U.S. POSTAL SAVING BANK DEPOSIT THE
MILLION DOLLAR NOTE AS LAWFUL MONEY RESERVES
UNDER 12 U.S.C.A. 342 ?**

**MAYBE THE POSTAL SAVINGS BANK COULD ISSUE POSTAL
MONEY ORDER TO FUND THE US POST OFFICE AND INPART
THE UNITED STATES FEDERAL GOVERNEMENT ?**

I.A.M. MILLION DOLLAR NOTES SOLD at a discount at :

The Million Dollar Bill store website:

milliondollarbill.com

**The I.A.M. Million Dollar Bill is the Original Authentic Million Dollar
Bill created as a true Limited Edition 1988 see below**

The U.S. Postal Savings Bank , discontinued in 1970

**Note: The United States Postal Service is an independent agency of the
executive branch of the federal government. It was created by the
Postal Reorganization Act of 1970 and went into operation on July 1,
1971. Prior to that date it was named the Post Office Department, and
the postmaster general who headed it was a member of the president's
Cabinet.**

The Postal Service is managed by a board of governors, which selects a postmaster general and deputy postmaster general as chief executive officers. There are five regional postmasters general, each of whom manages all postal activities within a region.

The U.S. Postal Savings Bank

In 1910, by an Act of Congress, the U.S. Postal Savings Bank was born and it was one of the best ideas in the Republic's history. By that time, most civilized countries of the world had a Postal Savings Bank.

President Theodore Roosevelt's speech on the necessity for a Postal Savings Bank in 1908:

"I again renew my recommendation for postal savings banks, for depositing savings with the security of the Government behind them. The object is to encourage thrift and economy in the wage-earner and person of moderate means. In 14 States the deposits in savings banks as reported to the Comptroller of the Currency amount to \$3,590,245,402, or 98.4 per cent of the entire deposits, while in the remaining 32 States there are only \$70,308,543, or 1.6 per cent, showing conclusively that there are many localities in the United States where sufficient opportunity is not given to the people to deposit their savings. The result is that money is kept in hiding and unemployed. It is believed that in the aggregate vast sums of money would be brought into circulation through the instrumentality of the postal savings banks. While there are only 1,453 savings banks reporting to the Comptroller there are more than 61,000 post-offices, 40,000 of which are money order offices. Postal savings banks are now in operation in practically all of the great civilized countries with the exception of the United States."

The Postal Savings Bank was officially inaugurated in 1910, during the Administration of President William Howard Taft:

"The second subject worthy of mention in the Post-Office Department is the real necessity and entire practicability of establishing postal

savings banks. The successful party at the last election declared in favor of postal savings banks, and although the proposition finds opponents in many parts of the country, I am convinced that the people desire such banks, and am sure that when the banks are furnished they will be productive of the utmost good. The postal savings banks are not constituted for the purpose of creating competition with other banks. The rate of interest upon deposits to which they would be limited would be so small as to prevent their drawing deposits away from other banks.

"I believe them to be necessary in order to offer a proper inducement to thrift and saving to a great many people of small means who do not now have banking facilities, and to whom such a system would offer an opportunity for the accumulation of capital. They will furnish a satisfactory substitute, based on sound principle and actual successful trial in nearly all the countries of the world, for the system of government guaranty of deposits now being adopted in several western States, which with deference to those who advocate it seems to me to have in it the seeds of demoralization to conservative banking and certain financial disaster. The question of how the money deposited in postal savings banks shall be invested is not free from difficulty, but I believe that a satisfactory provision for this purpose was inserted as an amendment to the bill considered by the Senate at its last session. It has been proposed to delay the consideration of legislation establishing a postal savings bank until after the report of the Monetary Commission. This report is likely to be delayed, and properly so, cause of the necessity for careful deliberation and close investigation. I do not see why the one should be tied up with the other. It is understood that the Monetary Commission have looked into the systems of banking which now prevail abroad, and have found that by a control there exercised in respect to reserves and the rates of exchange by some central authority panics are avoided. It is not apparent that a system of postal savings banks would in any way interfere with a change to such a system here. Certainly in most of the countries of Europe where control is thus exercised by a central authority, postal savings banks exist and are not thought to be inconsistent with a proper financial and banking system."

By 1913, the Postal Savings Bank was another great American success story. Here is an article from The Commercial Tribune, Cincinnati, Feb. 6, 1913:

Monfort Explains Postal Savings.St. Xavier's Students Listen to Exposition of Uncle Sam's Bank

Postmaster E. R. Monfort delivered an interesting address on "The Postal Savings Bank" last night, before the department of commerce, accounts, and finance of St. Xavier's College.

"The postal savings bank" [he said] "is a new department of the greatest business on earth-the banking business. Few people realize the magnitude of the Postal Department. In Cincinnati alone last year over \$17,000,000 changed hands in handling the mails. There are 2,650 mail carriers in the city, and the salaries of the deliverers and the railway mail clerks with headquarters in Cincinnati amounted to over \$1,000,000.

"The postal savings bank, although a new department of the Mail Service, has grown so rapidly that it is at present one of the largest. The people put more trust in the postal bank than they do in the ordinary banks. It is designed merely to protect and take care of the earnings of the working class. Under this system the money that is placed in the care of the Government can be withdrawn at any time. At times, it is said, more than half the money of the world is out of circulation and in the pockets of the people. At such time the circulating money is not sufficient to carry on the business of the world, and a panic follows. The great financiers of the world have been unable to account for these conditions, but many think that this system, by placing cash at the disposal of the poorer people, will greatly lessen the hardships of such panics.

"In speaking of the rapid growth of the postal savings bank and its favor with the people, he let the figures speak for themselves. On January 11, 1912, there was in the bank \$11,000,000; now there is \$30,000,000. On this money the depositors receive 2 percent interest. The Government, however, invests this money so that the department is self-supporting and so far has paid all its own expenses

This staggering sum was reached so quickly even though the maximum deposit was 500 dollars. Most of the depositors were poor and recent immigrants who did not trust the commercial banks and were very familiar with postal savings' banks in their home countries. The minimum age for opening an account was 10.

The people loved their savings bank and pressure quickly grew to increase the maximum amount. A bill was introduced in Congress in 1914 to repeal this ceiling. It was called the Moon Act. President Wilson acting under advice of the Roman hierarchy vetoed it because some of the banks receiving deposits were not part of the newly created Federal Reserve System!!

President Woodrow Wilson (1913-1921).

President Woodrow Wilson (another tool of Rome) vetoed the legislation that would have made the Postal Saving Bank another great American success story.

The Income Tax versus the Postal Savings Bank.

In 1913, _____ imposed slavish INCOME TAX system on the land of the FREE. . . .This was a direct competitor to the Postal Savings Bank. The income tax was an exact duplicate of the feudal Dark Ages Papal income tax:

Editor's Notes

One dollar in 1913 was the equivalent to about 30 dollars today, so 30 million dollars would be about 600 million dollars at today's exchange rate. This was the increase in just 2 years even though the maximum deposit was 500 dollars.

Visit the Postal Savings Bank of Hibernia - the birthplace of our great Irish-American hero Father Crowley.

The British Post Office Savings Bank is the world's oldest, it was founded in 1861.

Japan financed their industrial revolution through her Postal Savings Bank. It is one of the largest banks in the world right now with deposits of \$10 TRILLION.

China also discovered the Postal Savings Bank 10 years ago.

The U.S. Postal Savings Bank was discontinued in 1970 during the Presidency of Richard Nixon.

**---William H. Taft, Presidential Candidate, Republican Party
"Postal Savings Bank"
Hot Springs, Virginia, August 5, 1908**

SPEECH TEXT

The Republican platform recommends the adoption of a postal savings bank system. The government guarantee will bring out of hoarding places much money which may be turned into wealth producing capital and will be a great incentive for thrift in the many small places in the country having now no savings bank facilities which are reached by the post office. It will bring to everyone however remote from financial centers a place of perfect safety for deposit with the interest returned. The pending bill for such banks provides for the investment of the money deposited in national banks and the various places in which we have gathered or as near thereto as may be practicable. This answers the criticism contained in the Democratic platform that under the system the money gathered in the country will be deposited in Wall Street banks. The system of postal savings bank has been tried in so many countries successfully that it cannot be regarded longer as a new and untried experiment. The Democratic platform recommends a tax upon the national banks and upon such state banks as may come in, in the nature of enforced insurance, to raise the guarantee funds to pay

the depositors of any bank which fails. The proposition is to tax the honest and prudent banker to make up for the dishonesty and imprudence of others. No one can foresee the burden which under this system would be imposed upon the sound and the conservative bankers of the country by this obligation to make good for the losses caused by the reckless, speculative and dishonest men who would be unable to secure deposits under such a system on the faith of the proposed insurance. Because in its present shape, the proposal would remove all safeguards against recklessness in banking and in the end, probably the only benefit would accrue to the speculator who would be delighted to enter the banking business when it was certain that he could enjoy any profits that would accrue, while the risk would have to be assumed by his honest and hardworking fellow. In short, the proposal is wholly impracticable unless it is to be accompanied by a complete revolution in our banking system with a supervision so close as practically to create a government bank. If the proposal were adopted exactly as the Democratic platform suggests, it will bring the whole banking system of the country down in ruin. And this proposal is itself an excellent illustration of the fitness for national control of a party, which will commit itself to a scheme of this nature without the slightest sense of responsibility for the practical operation of the law proposed. The Democratic party announces its adhesion to this plan and only recommends the tried system of postal savings bank as an alternative if the new experimental panacea is not available. The Republican party prefers the postal savings bank as one tried safe and known to be effective and as reaching many more people now, without banking facilities, than the new system proposed.

WHY NOT RE OPEN THE UNITED STATES POSTAL SAVINGS BANK , CLOSED SINCE 1970 ?

**they can DEPOSIT THE I.A.M. MILLION DOLLAR NOTES AS
LAWFUL MONEY RESERVES UNDER 12 U.S.CA. 342 AND ISSUE
POSTAL MONEY ORDERS, FOR THE UNITED STATES FEDERAL
GOVERNMENT AS AUTHORIZED BY LAW**

-

The 'Lawful Money' Question

by Dr. Edward Flaherty

After 1933 all forms of U.S. money were conferred with legal tender status. This set up a paradox for currency redeemability. Federal Reserve notes and U.S. Notes, for example, were redeemable in "lawful money," but what was lawful money? Because redeemability had ended, there was no longer any distinction between lawful money and legal tender. Federal Reserve notes were therefore redeemable with other Federal Reserve notes, or with U.S. Notes, or with any other legal tender.

To illustrate how some people were confused by this, consider the following correspondence between the U.S. Treasury and citizen of Cleveland. 2

**December 9, 1947
Honorable John W. Snyder
Sec. of the Treasury
Washington, D.C.**

Dear Sir:

I am sending you herewith via registered mail one ten-dollar Federal Reserve note. On this note is inscribed the following:

"This note is legal tender for all debts, public and private, and is redeemable in lawful money at the United States Treasury or at any Federal Reserve bank."

In accordance with this statement, will you send me \$10.00 in lawful money?

**Very truly yours,
A.F. Davis**

**December 11, 1947
Mr. A.F. Davis
12818 Colt Road
Cleveland 1, Ohio**

Dear Mr. Davis,

Receipt is acknowledged of your letter of December 9th with enclosure of one ten dollar Federal Reserve note.

In compliance with your request, two five-dollar United States notes are transmitted herewith.

**Very truly yours,
M.E. Slindee,
Acting Treasurer**

**December 23, 1947
Mr. M.E. Slindee
Acting Treasurer
Treasury Department
Fiscal Service
Washington 25, D.C.**

Dear Sir:

Receipt is hereby acknowledged of two \$5.00 United States notes, which we interpret from your letter to be considered lawful money. Are we to infer from this that Federal Reserve notes are not lawful money?

I am enclosing one of the \$5.00 notes which you sent me. I note that it states on the face,

"The United States of America will pay to the bearer on demand five dollars."

I am hereby demanding five dollars.

**Very truly yours,
A.F. Davis**

December 29, 1947

**Mr. A.F. Davis
12818 Colt Road
Cleveland 1, Ohio**

Dear Mr. Davis:

Receipt is acknowledged of your letter of December 23rd, transmitting one \$5 United States note with a demand for payment of five dollars.

Your are advised that the term "lawful money" has not been defined in federal legislation. It first came to use prior to 1933 when some United States currency was not legal tender but could be held by national banking institutions as lawful money reserves. Since the act of May 12, 1933, as amended by the Joint Resolution of June 5, 1933, makes all coins and currency of the United States legal tender and the Joint Resolution of August 27, 1935, provides for the exchange of United States coin or currency for other types of such coin or currency, the term "lawful money" no longer has such special significance.

The \$5 United States note received with your letter of December 23rd is returned herewith.

**Very truly yours,
M.E. Slindee,
Acting Treasurer**

It is understandable how reasonable people can become confused when studying the history of the terms 'lawful money' and 'legal tender' in U.S. history. The blame for this rests with Congress who never bothered to define lawful money when it first used the term. However, the line of thinking that it is defined by the constitution as only gold or silver coin is incorrect. The constitution makes no such definition. Moreover, the restriction that States not make anything but gold or silver a legal tender does not apply to Congress, only to the States. Congress may declare anything it wishes a legal tender. And as the history above shows, it certainly has.

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Life extension

From Wikipedia, the free encyclopedia

Jump to: navigation, search

Life extension refers to an increase in maximum or average lifespan, especially in humans, by slowing down or reversing the processes of aging. Average lifespan is determined by vulnerability to accidents and age-related afflictions such as cancer or cardiovascular disease.

Extension of average lifespan can be achieved by good diet, exercise and avoidance of hazards such as smoking and excessive eating of sugar-containing foods. Maximum lifespan is determined by the rate of aging

for a species inherent in its genetic code. Currently, the only widely recognized method of extending maximum lifespan is by calorie restriction with adequate nutrient supplementation. Theoretically, extension of maximum lifespan can be achieved by reducing the rate of aging damage, by periodic replacement of damaged tissues, or by molecular repair or rejuvenation of deteriorated cells and tissues.

Researchers of life extension are a subclass of biogerontologists known as "biomedical gerontologists". They seek to understand the nature of aging and they develop treatments to reverse aging processes or to at least slow them down, for the improvement of health and the maintenance of youthful vigor at every stage of life. (Biomedical gerontologists are distinguished from biogerontologists in that the latter only take an academic interest in the biological mechanisms of aging, without seeking a "cure".) Those who take advantage of life extension findings and seek to apply them upon themselves are called "life extensionists" or "longevists". The primary life extension strategy currently is to apply available anti-aging methods in the hope of living long enough to benefit from a complete cure to aging once it is developed, which given the rapidly advancing state of biogenetic and general medical technology, could conceivably occur within the lifetimes of people living today.

Many biomedical gerontologists and life extensionists believe that future breakthroughs in tissue rejuvenation with stem cells, organs replacement (with artificial organs or xenotransplantations) and molecular repair will eliminate all aging and disease as well as allow for complete rejuvenation to a youthful condition. Whether such breakthroughs can occur within the next few decades is impossible to predict. Many life extensionists arrange to be cryonically preserved upon legal death so that they can await the time when future medicine can eliminate disease, rejuvenate them to a lasting youthful condition and repair damage caused by the cryonics process.

Whether the maximum human lifespan should be extended is the subject of much ethical debate amongst politicians and scientists. But the life extension movement, which began in the early 1980s, continues to grow rapidly in popularity and momentum.

Contents [hide]

1 Aging

2 Strategies of Life Extension

2.1 Anti-aging nutritional supplementation and medicine

2.2 Calorie Restriction

2.3 Chemical and genetic interventions in animal models

2.4 SENS (Strategies for Engineered Negligible Senescence)

2.5 Cryonics

2.6 Mind Uploading

2.7 Body Part Replacement

3 History of life extension and the Life Extension Movement

4 Scientific Controversy about Life Extension

4.1 Anti-aging nutritional supplementation and medicine

4.2 Calorie Restriction

4.3 SENS (Strategies for Engineered Negligible Senescence)

4.4 Cryonics

4.5 Mind Uploading

5 Ethics and Politics of Life Extension

5.1 Anti-aging nutritional supplementation and medicine

5.2 SENS (Strategies for Engineered Negligible Senescence)

5.3 Cryonics

6 See also

7 Notes

8 References

9 External links

[edit] Aging

Main article: Senescence

Aging is an accumulation of damage to macromolecules, cells, tissues and organs. The maximum life span known for humans is 122.5 years, whereas the maximum lifespan of a mouse is about 3 years. Genetic differences between humans and mice that may account for these different aging rates include efficiency of DNA repair, types and quantities of antioxidant enzymes, different rates of free radical production, etc. (See Senescence for more detail on aging theories.)

[edit] Strategies of Life Extension

[edit] Anti-aging nutritional supplementation and medicine

Much of anti-aging medicine has been concerned with the use of nutritional supplements to extend lifespan. The idea that antioxidant supplements, such as Vitamin C, Vitamin E, lipoic acid and N-acetylcysteine, might extend human life stems from the free radical theory of aging.

Diabetes resembles accelerated aging and is associated with cross-linking of proteins by sugars, more specifically monosaccharides. Some believe that anti-glycating supplements (supplements that reduce the protein cross-linking by monosaccharides), such as carnosine, pyridoxamine, benfotiamin and lysine, might reduce aging.

Hormone replacement therapy - which aims at restoring youthful levels of growth hormone, testosterone, estrogen, progesterone, melatonin, DHEA and thyroid (all of which decline with age) - has also been tried as means of reducing the effects of aging.

Other less popular hormones but which might also be useful are oxytocin, insulin, human chorionic gonadotropin (hCG), erythropoietin (EPO), and others. Resveratrol is a sirtuin stimulant proposed to extend life in mammals in a similar manner to that claimed for calorie restriction in simple model organisms such as nematodes.

Some supplements have been shown to be of benefit against some aging-related disease conditions, or have extended average lifespan. Calorie restriction and supplementation with the minerals selenium,[1] chromium[2] and zinc[3] have been shown to extend maximum lifespan in mice. Metformin[4] may also extend life span in mice, and in the first experiments with fish, resveratrol[5] looks promising. (Resveratrol is presently (2006) being tested in mice.)

[edit] Calorie Restriction

Main article: Calorie restriction

Calorie restriction (CR) with adequate nutrition has been shown to extend the maximum lifespan of almost every species on which it has

been tested, including rats, yeast, fruit flies, and nematodes. In rodents, a roughly 50% maximum lifespan extension is seen with a roughly 50% restriction of calories from what would be consumed by freely-feeding animals. Experiments are in progress with primates to test whether calorie restriction can extend the lifespan of long-lived species. Some people believe that these experiments will be successful, and that the results will similarly hold true for humans. A group called the Calorie Restriction Society was formed with the help of Brian M. Delaney, Lisa Walford, and Roy Walford in the mid-1990s. These people may have the willpower and determination to restrict their caloric intake in the hope of extending their lives, but they are very few in number. They communicate by e-mail and have been flown to Washington University in St. Louis to be studied by Dr. John Holloszy. Calorie restriction is under current study at the UW-Madison and several other universities. It has moved into testing on primates.

[edit] Chemical and genetic interventions in animal models

The evidence for use of growth Hormone is mixed. An early study suggested that supplementation of mice with growth hormone increased average life expectancy. Additional animal experiments have suggested that growth hormone may generally act to shorten maximum lifespan; knockout mice lacking the receptor for growth hormone live especially long.

Resveratrol is a substance that has been shown to extend the lifespan of yeast, fruit flies and certain fishes. Experiments in mammals are currently underway. The manner by which resveratrol achieves this effect remains unknown, although it has been conjectured that it is involved in the mechanism that underlies the lifespan enhancing effects of calorie restriction.

Likewise, the Sir2 class of genes is conjectured to be involved in the calorie restriction mechanism; yeast genetically engineered to overexpress Sir2 live longer.

Large availability of insulin generally leads to shorter lifespan. Mice genetically engineered to lack an insulin receptor in fat tissue live

longer. Mice with an overexpression of the Klotho gene, which limits insulin sensitivity, also show an extended lifespan.

[edit] SENS (Strategies for Engineered Negligible Senescence)

Main article: Engineered negligible senescence

Dr. Aubrey de Grey has suggested that it will someday be possible for humans to live thousands of years in a youthful condition. He calls his project to reverse the damage we call aging SENS (Strategies for Engineered Negligible Senescence). He has proposed seven strategies for the "seven deadly things":

Cell loss can be repaired (reversed) just by suitable exercise in the case of muscle. For other tissues it needs various growth factors to stimulate cell division, or in some cases it needs stem cells.

Senescent cells, can be removed by activating the immune system against them. Or they can be destroyed by gene therapy to introduce "suicide genes" that only kill senescent cells.

Protein cross-linking can largely be reversed by drugs that break the links. But to break some of the cross-links we may need to develop enzymatic methods.

Extracellular garbage (like amyloid) can be eliminated by vaccination that gets immune cells to "eat" the garbage.

For intracellular junk we need to introduce new enzymes, possibly enzymes from soil bacteria, that can degrade the junk (lipofuscin) that our own natural enzymes cannot degrade.

For mitochondrial mutations the plan is not to repair them but to prevent harm from the mutations by putting suitably modified copies of the mitochondrial genes into the cell nucleus by gene therapy. The mitochondrial DNA experiences a high degree of mutagenic damage because most free radicals are generated in the mitochondria and because the DNA repair mechanisms of mitochondrial DNA are significantly inferior to those of nuclear DNA. A copy of the mitochondrial DNA located in the nucleus will be better protected from free radicals, and there will be better DNA repair when damage occurs. All mitochondrial proteins would then be imported into the mitochondria.

For cancer (the most lethal consequence of mutations) the strategy is to use gene therapy to delete the genes for telomerase and to eliminate

telomerase-independent mechanisms of turning normal cells into "immortal" cancer cells. To compensate for the loss of telomerase in stem cells we would introduce new stem cells every decade or so. Dr. de Grey co-founded the Methuselah Mouse Prize, which awards money to researchers who can extend the lifespan of mice or rejuvenate mice.

[edit] Cryonics

Main article: Cryonics

Cryonics is inspired by the fact that life extension technologies may eventually allow people to live thousands of years of youthful life. But these technologies may not be available for another 50 years, if ever. There is a danger that anyone, including young people, may die before the new medicine becomes available. Cryopreservation shortly after legal death may provide an "ambulance" into the future. The basis of cryonics is that at cryogenic temperatures there will be no alteration in biological tissue for thousands of years, which allows plenty of time for future medicine to achieve the required capabilities.

For those in cryonics, future medicine will not only be able to cure all disease and rejuvenate everyone to a youthful condition, but it will be able to repair any damage that is caused by the cryopreservation process. Molecular repair technology (nanotechnology and nanomedicine) is expected to be able to achieve these results. But to be safe, and to minimize damage, efforts have been made to eliminate all freezing damage through vitrification and to minimize ischemic damage through rapid cooling and cardio-pulmonary support immediately following pronouncement of death.

Cryonics is not freezing of humans or pets. Ice is very damaging to body tissues, so all cryonics organizations use cryoprotectants to prevent ice formation, i.e., anti-freeze substances that can reduce or prevent ice formation. Formerly cryonics organizations used glycerol as their cryoprotectant, which resulted in about 80% ice elimination (vitrification) and about 20% freezing. Cryonicists believed that damage that was being caused by disease, by aging and by the freezing would someday be repaired by nanotechnology. With vitrification the burden on future technology has been greatly reduced. With cells and

tissues mainly preserved by cooling, future technology should be able to repair damage resulting if the cooling process is not too delayed.

Since the 1990s vitrification solutions have been developed that have virtually eliminated ice formation (reduced to less than 0.2%). In fact, it was announced in July 2005 that one such solution had been used to vitrify rabbit kidney at -135°C , and was later transplanted into a rabbit with full viability.

Stoppage of heartbeat and breathing, the usual criteria for legal death, do not correspond to the death of cells and tissues of the body. The cells and tissues are still very much alive when death is pronounced. Even at room temperature cells and tissues take hours to die, and days to decompose. Although neurological damage is the usual consequence of cessation of heartbeat for more than 4-6 minutes, the irreversible neurodegenerative processes do not manifest for hours.

Rapid cooling and cardio-pulmonary support applied immediately after pronouncement of death can preserve cells and tissues for long-term preservation at cryogenic temperatures. People, especially children, have survived up to an hour without heartbeat after having fallen into ice water. Cryonics "standby teams" wait by the bedside of cryonics patients to apply cooling and cardio-pulmonary support as soon as possible after declaration of death. Cryonicists do not believe that legal death is real death (irreversible destruction of the anatomical basis of mind) any more than conventional medicine now accepts that cessation of heartbeat is "real death", when the heart can be restarted with a defibrillator.

[edit] Mind Uploading

Mind uploading is the transfer of the human mind/consciousness to a more durable material vessel (stereotypically but not necessarily a silicon computer). The concept is based on materialism, the philosophy of mind that argues that the human spirit is entirely composed of a very complex system of physical and chemical interactions. However, it is not understood how consciousness exists, and thus no existing scientific understanding for "reading" the "contents" of a human mind. With computer power increasing exponentially, and technology in the

pipeline to keep up the trend, futurist Ray Kurzweil predicts that computer hardware will be powerful enough to run a functional model of the human mind by the 2020s. Several developing technologies hypothetically allow the complete mapping of human brains on a similar timescale. Uploading the human mind to a computer, if possible, would potentially greatly extend human lifespan due to the ability to construct highly durable computer hardware and due to the potential to copy or transfer the mind to multiple computers.

[edit] Body Part Replacement

Biotechnologies, particularly those of human cloning and stem cell research, are thought to offer some possibility of replacing aging body parts with 'new' parts grown artificially. Current technology has already demonstrated the feasibility of body part replacement in laboratory experiments, most notably the fabrication of a functioning dog's bladder that proved to be viable after successful implantation. Bladders and other simple biological structures more readily lend themselves to artificial fabrication, whereas complex biological structures such as mammalian joints and limbs are not yet possible to fabricate artificially. Given the exponential progression of technology, it is probable that the artificial fabrication of replacement body parts, both simple and complex, along with successful implantation technology will one day be possible. In one popular scenario, an individual's brain is transplanted from his or her aging body into a new, youthful body cloned from his or her own tissues. Experiments were conducted in the mid-20th century to transplant brains from one body to another (conducted in both monkeys and dogs), but failed due to rejection and the inability to restore nerve connections. Proponents of body part replacement contend that the required biotechnologies are likely to appear earlier than other life-extension technologies. Ethical controversy surrounding stem cell research and human cloning continues to cloud the issue.

[edit] History of life extension and the Life Extension Movement

In 1970, the American Aging Association was formed under the impetus of Denham Harman originator of the free radical theory of aging. Harman wanted an organization of biogerontologists that was devoted

to research and to the sharing of information among scientists interested in extending human lifespan.

Although the desire to extend life can be traced as far back as the Epic of Gilgamesh, it was the 1982 bestselling book *Life Extension: A Practical Scientific Approach* (ISBN 0-446-51229-X) by Durk Pearson and Sandy Shaw that popularized the phrase. In that book the authors detailed six major causes of aging, and presented dietary supplementaion strategies for slowing down five of those. They also emphasized improving the quality of life, presenting methods of using the same dietary supplements that extend life to enhance sex (sex drive and sexual performance), cognitive function (intelligence, concentration, memory, mental stamina, etc.), stress management, sleep (quality of sleep, sleep reduction, and fast recovery from jet lag), athletic performance, body building, sports medicine, etc. The authors' two-pronged approach (showing how to live long and live well) makes their book a virtual nutritional toolbox, and this may account for why the book was so successful at kickstarting the life extension movement. Many other authors have followed this general strategy, promoting the quality of life applications of nutrients and drugs to attract readers to the subject of life extension.

The 1980 book *The Life Extension Revolution* (ISBN 0-688-03580-9) by Saul Kent did not sell so well. But Mr. Kent appeared on the Merv Griffin Show with Pearson and Shaw, and was able to use the flood of letters to create the nutraceutical firm called the Life Extension Foundation, which is non-profit. The Life Extension Foundation has grown to produce a magazine which has a large circulation. The group has a track record which includes promoting the benefits of many health supplements such as S-adenosyl methionine and melatonin many years before the medical field accepted the benefits of those substances.

Money generated by the Life Extension Foundation allowed Saul Kent to finance the Alcor Life Extension Foundation, the largest cryonics organization. The cryonics movement had been launched in 1962 by Robert Ettinger's book, *The Prospect of Immortality*. In the 1960s, Saul Kent had been a co-founder of the Cryonics Society of New York. Alcor gained national prominence when the baseball star Ted Williams was

cryonically preserved by Alcor in 2002 and a family dispute arose as to whether Ted had really wanted to be cryopreserved.

In 1983, Dr. Roy Walford, a life-extensionist gerontologist published a popular book called Maximum Lifespan. Later, Dr. Walford and his student Dr. Richard Weindruch summarized years of their research into the ability of calorie restriction to extend the lifespan of rodents in their 1988 scholarly work The Retardation of Aging and Disease by Dietary Restriction (ISBN 0-398-05496-7). It had been known since the work of Clive McCay in the 1930s that calorie restriction can extend the maximum lifespan of rodents. But it was the work of Walford and Weindruch that gave detailed scientific grounding to that knowledge. Walford's personal interest in life extension motivated his scientific work and he practiced calorie restriction himself.

For years the FDA was in contention with the Life Extension Foundation, including through seizure of merchandise and court action. The FDA did not regard aging as a disease or life extension as a valid treatment category. In 1991 Saul Kent and Bill Faloon, the principals of the Foundation were jailed and told by the FDA that they would become the target of criminal indictments that would "destroy their lives forever"[6] and were advised to plead guilty of crimes against the state. Against legal advice, Kent and Faloon fought the FDA in court and filed countercharges concerning their mistreatment. In 1995 the FDA informed Kent and Faloon that, in exchange for a guilty plea, they would not have to go to prison and could continue doing business on a more limited basis. Instead of pleading guilty, Kent and Faloon filed a new battery of legal motions, escalated their counterattack against the FDA and began extensive preparations for their trial. In November 1995, the FDA dropped all charges except the charge of "obstruction of justice" against Saul Kent. In February 1996, this charge was also dropped.

In 1992 the American Academy of Anti-Aging Medicine (A4M) was formed to create an anti-aging medical specialty distinct from geriatrics, and to hold conferences for physicians interested in this field.

An important development in the life extension movement was the creation of the Usenet group, sci.life-extension. Brian M. Delaney

created sci.life-extension in 1993, and the forum made possible, among other things, the creation of the CR Society.

A recent development in life extension has been the work of biogerontologist Aubrey de Grey of Cambridge University. Dr. de Grey proposes that damage to macromolecules, cells, tissues and organs can be repaired by advanced biotechnology.

The concept of Actuarial escape velocity, invented by futurist and sci-fi author Ray Kurzweil, posits that developments in life extension technology will reach a point at which the technology keeps pace with or even outpaces the rate at which humans age. This represents a kind of gateway to immortality.

[edit] Scientific Controversy about Life Extension

**[edit] Anti-aging nutritional supplementation and medicine
Although Alex Comfort and Bernard Strehler have been retrospectively claimed as anti-aging gerontologists, other biogerontologists vehemently deny that aging is a disease. Possibly the most prominent biogerontologist making this denial is Leonard Hayflick, who determined that fibroblasts are limited to around 50 cell divisions. Hayflick reasons that aging is an unavoidable consequence of entropy.**

Dr. Denham Harman spent years experimenting with antioxidants, and was able to establish only that they can extend mean lifespan; he was unable to demonstrate an effect on maximum lifespan. Non-antioxidant nutrients (such as selenium,[1] chromium[2] and zinc[3]) are more effective and have extended maximum lifespan. In response to what they saw as unscrupulous profiteering by those engaged in the selling of supplements and the practice of anti-aging medicine, a group of prominent biogerontologists began a "war" on anti-aging medicine in general and the A4M in particular. Jay Olshansky, Leonard Hayflick, and Bruce Carnes wrote a position paper against anti-aging medicine[7]

[edit] Calorie Restriction

Main article: Calorie restriction

Despite the results on yeast, fruit flies and nematodes, criticisms have been raised that the results of calorie restriction experiments on laboratory rats are not generalizable because years of inbreeding have made these animals different from those found in the wild. Even if it is conceded that the rat work may be generalizable to some extent, some argue that the results are applicable only to short-lived species that have evolved to respond to feast and famine with alterations in longevity. Proving that the results are generalisable in a way that encourages hope of extended life for human beings is difficult, since experiments with long-lived species necessarily take a very long time to perform.

Scientists have varying theories on why calorie restriction experiments would increase the life spans of the animals who have been tested with it besides the calories being reduced. These include the habitat, the genetic line of the test subjects, and the nutritional content of the animal's diets, and the frequencies of feeding. Some critics observe that the test animals are not exposed to the same stresses that humans are in everyday life in modern environments, which may give humans a greater need for the calories.

[edit] SENS (Strategies for Engineered Negligible Senescence) SENS is a novel program initiated by Aubrey de Grey, which aims to research and develop engineering-like strategies for the indefinite extension of life in individuals, rather like one might attempt to indefinitely keep a classic car in working order by various types of intervention, including improving the robustness of existing components by replacement or modification.

The SENS project has been criticized as a pipe dream based on pure speculation, rather than on robust science. Aubrey de Grey has been criticized on the ground that he is a theoretician who does no empirical work himself. Yet Dr. de Grey collaborates extensively with experimental scientists, publishes several peer-reviewed scientific papers per year, organizes scientific conferences, and is editor-in-chief of the peer-reviewed journal Rejuvenation Research.

Aubrey de Grey's claim that the only significant effect of nuclear DNA (nDNA) damage is cancer is open to dispute, and this impacts both of his last two strategies (neither of which is appropriately described as "repair"). Evidence of significantly reduced oxidative damage to mitochondrial DNA (mtDNA) and negligible oxidative damage to nDNA in calorie restricted rats[8] is misleading because DNA repair capability declines with age. Thymine dimer removal (a form of DNA repair) is about five times greater in newborn fibroblasts than in fibroblasts from the elderly.[9] So although DNA damage other than mutation (cancer), may be small in the young, it increases greatly with age. Moving mtDNA into the nucleus would not be as beneficial as he presumes if nDNA is subject to such a decline in DNA repair with age.

A comparison of the heart mitochondria in rats (4-year lifespan) and pigeons (35-year lifespan) showed that pigeon mitochondria leak fewer free radicals than rat mitochondria, despite the fact that both animals have similar metabolic rate and cardiac output. Pigeon heart mitochondria (oxidative phosphorylation protein Complexes I & III) showed a 4.6% free radicals leak compared to a 16% free radical leak in rat heart mitochondria.[10] Rather than copy mtDNA into the nucleus, it may be a more effective strategy to reduce free radical production in mitochondria by making human Complex I more like the Complex I found in birds, by copying from the bird genome. A comparison of 7 non-primate mammals (mouse, hamster, rat, guinea-pig, rabbit, pig and cow) showed that the rate of mitochondrial superoxide and hydrogen peroxide production in heart and kidney were inversely correlated with maximum life span.[11] A similar study of 8 non-primate mammals showed a direct correlation between maximum lifespan and oxidative damage to mtDNA in heart & brain. There was a 4-fold difference in levels of oxidative damage and a 13-fold difference in longevity, supportive of the idea that mtDNA oxidative damage is not the only cause of aging.[12]

The segmental progerias ("accelerated aging" diseases) are part of the evidence that the weakest link in extending lifespan is DNA repair -- along with the fact that DNA repair capability correlates with maximum lifespan in mammals.[13] There is much that could be done to improve DNA repair both in the nucleus and in the mitochondria.

We could study organisms like the bacterium *Deinococcus radiodurans*[14] and adapt their enzymes to our cells. Thus, improved DNA repair and reduced free radical production (by Complex I proteins taken from birds) may be much more cost effective strategies than SENS for reducing aging-damage, extending maximum lifespan and preventing cancer.

[edit] Cryonics

Although cryonics is not current science, many scientists support the idea based on their expectations of the capabilities of future science.[15] No mammal has been cryopreserved and brought back to life. Nonetheless, vitrification has made remarkable strides in eliminating freezing damage and maintaining viability of cryopreserved tissues, including functional kidneys. Life extensionists compare cryopreservation skeptics with the cloning skeptics of the recent past. Journalists routinely interview scientists who dismiss the possibilities of the field but whose grasp of the subject is questioned by life extensionists. The phrase most often quoted is that "believing cryonics could reanimate somebody who has been frozen is like believing you can turn hamburger back into a cow.".[16] Some cryonics enthusiasts believe that this transformation will be "no problem" for nanotechnology.

[edit] Mind Uploading

There is no scientific understanding that explains the detailed functioning of the human consciousness. A "reading" of the "contents" of a human mind is thus a purely speculative hypothesis. However, a key objection, if science were able to read and transfer the mind's contents, and a model of a human mind was then actually moved to a computer, would the personal identity of that human be retained? And what would be the status of personal identity after duplication?

A possible solution to the first objection is to interface biological humans brains with computer parts, and the gradual replacement of biological components with mechanical ones - functionally no different to the biological renewal of synapses. The philosophical Ship of Theseus enigma still remains with this solution.

The difficulty in seeing mind uploading as a solution is along the same lines of mind cloning and transporter duality paradox. The situation is contemplated where the mind is uploaded, yet the original mind remains. In this case, the person will still be themselves, and the clone will be alien to them, and vice versa. The biological mind would view itself as the original, but would die. The computer mind would view itself as original yet artificial. If the clone is a separate individual, then the consciousness of the original would still die. Even in the case where there is never a clone (killing the original upon mind uploading, or the gradual replacement of biological components) while the distinction would be less apparent, it would still be applicable in some regards.

[edit] Ethics and Politics of Life Extension

It is commonly claimed that life extension would destroy the planet with overpopulation. Leon Kass (chairman of the US President's Council on Bioethics from 2001 to 2005) has exemplified the anti-life extension view with the following statement:

"simply to covet a prolonged life span for ourselves is both a sign and a cause of our failure to open ourselves to procreation and to any higher purpose. ... [The] desire to prolong youthfulness is not only a childish desire to eat one's life and keep it; it is also an expression of a childish and narcissistic wish incompatible with devotion to posterity."

Some life extensionists perceive a lack of respect for individual choice in these words. This view would characterize Kass and others as seeking to use government power to ensure that no one's life is extended regardless of their wishes:

"the finitude of human life is a blessing for every individual, whether he knows it or not."

In retort to Leon Kass's stance, transhumanist philosopher Nick Bostrom published an article titled "The Fable of the Dragon-Tyrant",[17] in which death is metaphorically personified as a monstrous dragon who demands horrific human sacrifices upon a mountain. A debate rages in the kingdom in the valley below between those who believe the dragon is a fact of life because he has existed for longer than any one can remember despite innumerable attempts to kill

him, and those who believe the dragon is merely flesh and blood and that the kingdom has advanced to the point where a concerted effort may be mounted against him. In the end, the dragon-tyrant is killed by a ballistic missile launched from the valley, but not before a billion people die unnecessarily due to the initial fatalism and consequent inaction.

[edit] Anti-aging nutritional supplementation and medicine
Politics relevant to the substances of life extension pertain mostly to communications and availability. In the United States, the claims which can be made on food and drug product labels are strictly regulated. Meanwhile, freedom of speech guaranteed by the First Amendment currently only protects the right of 3rd-party publishers to print books, newsletters, websites, etc. on every aspect of these substances, including opinions, speculations, etc. Many manufacturers and suppliers also provide publications, but because they are also marketing the substances, they are subject to the monitoring and enforcement efforts of the FTC (Federal Trade Commission) which has jurisdiction over false claims made by marketers in public media. What constitutes the difference between truthful and false claims is hotly debated and is a central controversy in this arena.

[edit] SENS (Strategies for Engineered Negligible Senescence)
In February 2005, Technology Review, which is owned by the Massachusetts Institute of Technology, published an article by Sherwin Nuland, a Professor of Clinical Surgery at Yale University and the author of "How We Die" (ISBN 0-679-74244-1), that drew a skeptical portrait of Aubrey de Grey.[18] While admiring de Grey's intelligence, Nuland concluded that he "would surely destroy us in attempting to preserve us" because living for such long periods would undermine what it means to be human. The article made no attempt to address the science of SENS, and this omission was severely criticized by many readers. In response, Jason Pontin (the magazine's editor) has offered \$10,000 to any gerontologist who can convince an independent review panel that de Grey's ideas about radical life-extension have no merit. De Grey's Methuselah Foundation matched the \$10,000, making the prize for debunking him \$20,000.

In March, of 2006, Technology Review announced that it had chosen a panel of judges for the Challenge. On July 11, 2006, Technology Review published the results of the SENS Challenge. In the end, no one won the \$20,000 prize. The judges felt that no submission met the criterion of the challenge and disproved SENS, although they unanimously agreed that one submission, by Preston W. Estep and his colleagues, was the most eloquent. In publishing the results, Technology Review also announced that it would make a \$10,000 payment to Estep et al. in recognition of what the publication called their "careful scholarship." More details of the contest can be found at the De Grey Technology Review controversy Wikipedia page.

[edit] Cryonics

As a life extension practice, cryonics has been under attack for many of the same reasons as the other life extension practices. Additionally, however, some people appear to be aesthetically revolted by the practice of cryopreserving "dead bodies" and especially of cryopreserving the head ("neuropreservation"). (The term "neuropreservation" implies just the brain, but in fact the entire head is cryopreserved, so the word is a slight misnomer.)

Almost from the beginning the Society for Cryobiology has attacked cryonics as being "fraud" and "quackery" and has banned cryonicists from being members of the Society. There are cryonicists who are members, but they are necessarily discreet about their affiliations. Most of the members of the Society have also made it clear that they have non-scientific grounds for their hostility, including the usual anti-life extension arguments as well as aesthetic arguments.

As a result of a media circus surrounding following a 2003 Sports Illustrated article claiming that Alcor had mishandled the body of baseball super-star Ted Williams,[19][20][21] a bill was passed in 2004 by the Arizona House of Representatives to place cryonics and cryonics procedures under the regulation of the state funeral board. In its original form, the law would have prevented Alcor's use of the Uniform Anatomical Gift Act. The bill was withdrawn while under consideration in the Arizona Senate.[22] Although the Cryonics Institute (CI) was not

responsible for Ted Williams, the media attention resulted in CI being placed under a "Cease and Desist" order by the State of Michigan for six months. Finally the Michigan government decided to regulate CI as a cemetery.

There are many people who have negative feelings about cryonics in general, and Alcor in particular. The Ted Williams affair has become a focus of such people. In many cases, cryonics was less an issue than the perception that the final wishes of Williams had not been respected and that Williams had not been treated with dignity.

[edit] See also

Actuarial escape velocity

Aging Research Centre

American Aging Association

Aubrey de Grey

Biogerontology

Biological immortality

Calorie restriction

Cryonics

De Grey Technology Review controversy

DNA repair

Engineered negligible senescence

Immortality

Indefinite lifespan

Life Extension Foundation

Life extensionist

List of life extension related topics

Longevity

Maximum life span

Megavitamin therapy

neoSENS

Optimum nutrition

Orthomolecular medicine

Methuselah Mouse Prize

Rejuvenation

SAGE KE

Senescence

Simulated reality
Steven A. Garan
Therapeutic cloning
Transhumanism
Free radical
Harry Demopoulos
Health freedom

[edit] Notes

^ a b Selenium and tellurium in rats: effect on growth, survival and tumors. Schroeder HA, Mitchener M in J Nutr. 1971 Nov; 101(11): 1531-40 (PMID 5124041) The selenate dose used (3ppm) was toxic (carcinogenic); despite this the mean LS was extended by 9%, maximum cohort LS by 48%., which at 60 months beat the previous species maximum of 42 months by 43%. (Selenite at 3ppm was highly toxic and not pursued.) The ratio of max cohort LS / control mean LS was 2.25. (cf: control max/mean LS = 1.52) The controls received 50ug/kg selenium / wet diet weight.

^ a b Longevity effect of chromium picolinate--'rejuvenation' of hypothalamic function? McCarty MF in Med Hypotheses 1994 Oct;43(4):253-65 (PMID 7838011) "The first rodent longevity study with the insulin-sensitizing nutrient chromium picolinate has reported a dramatic increase in both median and maximal lifespan.." Gives additional information about the Evans-Meyer-Pouchnik (PMID 8433089) chromium picolinate experiment on rats: Cohort maximum lifespan (last survivor) was 48 months, extending the previous species maximum by 15% to give a total maximum lifespan increase of 26%.

^ a b Presence of links between zinc and melatonin during the circadian cycle in old mice: effects on thymic endocrine activity and on the survival. Mocchegiani E, Santarelli L, Tibaldi A, Muzzioli M, Bulian D, Cipriano K, Olivieri F, Fabris N. in J Neuroimmunol. 1998 Jun 15;86(2):111-22. (PMID 9663556) Median lifespan extension 39%; max lifespan extension 10% (relative to the controls) for the zinc sulphate mice who received 22mg/L = 4.83 mg zinc/L in their water; intervention started at 18 months, median control died at 22 months; controls and test mice received slightly more zinc in their food; i.e. test mice received slightly less than twice the amount of zinc as the control mice received.

Total human equivalent zinc intake = 11mg/d. See (PMID 8582782) full text for more details on water and food intake levels; zinc sulphate = Zn SO₄ · 7(H₂O); 22.7% zinc by wt. 22mg zinc sulphate = 5mg zinc. The zinc sulphate mice also outlived the melatonin-supplemented mice. Zinc and melatonin levels were correlated in both the zinc and melatonin supplemented mice.

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Clinical Interventions in Aging Editor-in-Chief: Dr Richard F Walker. Publisher: Dove Medical Press Ltd. ISSN 1176-9092. Published Quarterly

Rejuvenation Research Editor: Aubrey de Grey. Publisher: Mary Ann Liebert, Inc. ISSN 1549-1684 - Published Quarterly

[edit] External links

Anti-aging

American Academy of Anti-Aging Medicine

Aging Research Centre

Aubrey de Grey: 'We will be able to live to 1,000'

Biogerontological and Anti-aging Resources

Life Extension, Caloric Restriction and Scientific Philanthropy

Life Extension Values Clarification Survey

Living Forever

Longevity Meme

Mechanisms of Aging

Nanotechnology and Life Extension

Partial immortalization - Pimm

Senescence.info A gerontologist's website on aging and life-extension

**The Immortality Institute forum on advocacy & research on biological
immortalism
Cryonics**

Alcor Life Extension Foundation

Cryonics FAQ

Cryonics Institute

Trans Time

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Self-care**

**ViewsArticle Discussion Edit this page History Personal toolsSign in /
create account Navigation**

Main page

Community portal

Featured content

Current events

Recent changes

Random article

Help

Contact Wikipedia

Donations

Search

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Related changes

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The Gravitational Instability Cosmological Theory

Saturday, August 21, 2004

The Gravitational Instability Cosmological Theory
on the Formation of
the Universe

Sent to: Science Magazine Aug 2 2004

The Gravitational Instability Cosmological Theory
on the Formation of the Universe.

When the Universe started to fall

(1) The expansion of the universe is a result of
the "heat"
contained therein;

(2) The source of the "heat" is the cosmic
microwave radiation
background at 3 kelvin,
wherein;

(3) The microwave electro magnetic-nuclear energy
was formed as a
result of the
interaction of two different static gravitational
vacuum fields,
causing gravitational
instability and the motion, void of matter, at this
time,

wherein; static gravitational field (1) began to go
into "motion".

Therefore; only (2) static gravitational vacuum fields alone, being void of $E=MC^2$

could create $E=MC^2$; and the matter of the Universe.

When did motion first start ?

Science knows the formation of matter in our universe was caused by the forces of the universe.

These forces are:

- (1) The Force of Gravity
- (2) The Force of Electro Magnetism
- (3) The Strong Nuclear Force
- (4) The Weak Nuclear Force

At some point in time, motion within the universe, had to begin.

The paradox would be, what force could cause motion to begin, without moving in its present space-time ?

The Gravitational Cosmological Theory was developed from an is rooted in the Einstein Steady State Theory and the Bondi-Gold-Hoyle Steady State Theory,

Wherein the Steady State Theory the universe, contains more protons than electrons that create dust particles and

galaxies formed in their current locations and the cosmic matter is recycled therein at the center of the galaxy furnace.

When the Universe started to fall:

The Gravitational Instability Cosmological Theory on the Formation of the Universe.

The Theory:

(1) The expansion of the universe is a result of the " heat " contained therein;

(2) The source of the " heat " is the cosmic microwave radiation background at 3 kelvin, wherein;

(3) The microwave electro magnetic-nuclear energy was formed as a result of the interaction of two different static gravitational vacuum fields, causing gravitational instability and the motion, void of matter, at this time, wherein; static gravitational field (1) began to go into "motion".

Therefore; only (2) static gravitational vacuum fields alone, being void of $E=MC^2$ could create $E=MC^2$; and the matter of the Universe.

Q: When did this motion start?

A: If a neutral particle is able to resist the universal motion, in theory, that particle would go back in time. Going back in time the neutral particle would then enter into (1)

of the (2) motionless-static gravity vacuum fields
void of motion, and
cause an unbalance
and gravitational instability and this interaction
would create motion
and energy
particles.

Q: What causes a gravitational static vacuum field
in the first place

?

A: Pressure force is used to create a vacuum on
Earth, perhaps an
exotic something
100,000 times weaker than the force of gravity
decays, causing a
static-motionless gravity vacuum field.

Theory by

Rev Daniel Izzo July 2002
512 Onondaga Ave
Syracuse, NY 13207

posted by Rev Dan Izzo @ 1:52 AM

3 Comments:

At 2:16 AM, Rev Dan Izzo said...

Subj: The Steady State Theory verses The Big Bang
Theory /
Cosmological alternatives

Alternative Theory (2)

The Steady State Galaxy Theory

by R.Rufus Young
galaxy@nbnet.nb.ca
Last revised Dec 30,1996

An Alternative To

The Big Bang Theory

Go to Text only version. INDEX

Introduction

Basic Operation of Galaxies

Mass and Energy

Shape of Galaxies

Red Shift

Microwave Background Radiation

Entropy

Hydrogen-Helium Ratio

Quasars

Summary Introduction

The purpose of this Web Page is to show that the Steady State Galaxy Theory can provide an alternative to the Big Bang Theory in explaining the universe around us. It covers the operation of Galaxies and shows that they recycle both Matter and Energy and are able to carry on indefinitely. It also explains the Shape of Galaxies, Red Shift, Microwave Background Radiation, Entropy and the Hydrogen-Helium Ratio.

If the reader takes an open-minded approach and looks at all aspects of the material presented here before reaching any conclusions, it will, at least, provide them with some food for thought.

Basic Operation of Galaxies

At the center of each galaxy is a neutroid which acts to constantly recycle all the matter and energy in the galaxy. This neutroid is similar to a neutron star but is very much larger and has reached a size where the pressure and temperature at its surface are great enough to generate a nuclear fusion process. In the areas of the neutroid's magnetic poles, the products of fusion are trapped by the magnetic field and are pushed out along the magnetic field by the pressure of the nuclear fusion process going on below. This results in a column of material composed of hydrogen, helium and other light elements being ejected at each of the neutroid's two magnetic poles. This material moves out from the neutroid at essentially constant velocity until it reaches a point where the magnetic field is no longer strong enough to control it. Once free of the magnetic field the material then continues under it's own momentum to travel to the outer edge of the galaxy before starting to fall back toward the neutroid.

This process enables the neutroid to eject matter from itself and results in jets of hydrogen and helium ions being produced at each of the neutroid's two magnetic poles. The larger the neutroid becomes,

the greater the size and velocity of its jets. This becomes a stable and self-limiting process where the amount of material attracted to the neutroid will be equal to the amount of material expelled at its magnetic poles. Eventually if too much material is added to the system, the velocity of the material being ejected from the magnetic poles will be sufficient for it to escape from the system altogether, thus limiting the total mass the system can accumulate. This process forms the basis of operation of all galaxies. The size and shape of galaxies are determined by the size of the neutroid at their center and its rate and plane of rotation. In the case of our own galaxy (The Milky Way) these jets have sufficient momentum to carry the material out to 100,000 light years distance from the center.

As the jets of gas stream out from the Neutroid, large clouds of it condense and form the stars which are predominately located in the spiral arms of the Galaxies. These stars eventually burn up their Hydrogen fuel and in the process create the other heavier elements we find in the universe, all the while continuing to travel to the outer edge of the galaxy. It has probably been at least 10 Billion years since the material of which our solar system is composed was initially

ejected from the neutroid. It is now located about 2/3rds the distance to the edge of the galaxy, but since it is constantly decelerating it will take it another 20 billion years to reach its maximum distance from the neutroid. The total transit time from when material is ejected from the neutroid at the center of the Milky Way to when it returns to the neutroid will be about 60 Billion years.

Although the material ejected by the neutroid appears to travel in a spiral arc, in actual fact it is travelling in a straight radial line out from the neutroid and will eventually travel back along the same radial path to the neutroid. To help visualize this process, imagine setting up two super cannons, each on opposite sides of the earth at the equator and each pointing straight up and each capable of firing a projectile with sufficient velocity that it will take 12 hours to reach the top of its projectory. Now, fire a projectile from each cannon every hour for 12 hours and plot the position of each projectile at the end of the 12 hours. The result, as shown in figure 1, will be two spiral arms much like the Galactic arms are shaped.

IF we continue the experiment for another 3 hours and draw a new plot, figure 2, we find that the first projectiles that were fired have now

passed the peak of their altitude and have started to fall back to earth and the whole spiral pattern appears to have rotated counterclockwise 45 degrees. However, the only changes in the positions of projectiles No.1 have been to move slightly closer to the earth along a radial line and they will continue falling back to earth along the same radial path and will impact the earth 24 hours after being fired. They do not themselves travel in a spiral path around the earth although the loci of their instantaneous positions forms a spiral which appears to be rotating.

Figure 3 represents a typical small galaxy which is composed of 3 parts, (a) a Central Core (Area 1), (b) 2 Jets of material being ejected from the core (Areas 1 to 2), and (c) Spiral Arms (Areas 2 to 3). The Central Core consists of a neutroid at the center and an obscuring mass of material trapped in the Neutroid's magnetic field. The areas from 1 to 2 are gigantic jets of gas which are being ejected by the Neutroid and are contained within its magnetic field. Star formation occurs in these areas. At point 2 the magnetic field of the Neutroid weakens to the extent that it no longer constrains the material within it and as the material continues to move outward it will now trace a spiral arc as per the previous illustrations in Figs.

1 & 2. At point 3 the hydrogen fuel has been consumed and although the remains of the burned out stars are still there they become invisible dark matter as they continue to travel to the top of their projectory and then fall back to the Neutroid.

Thus, the galaxies form huge recycling systems which will carry on indefinitely.

Hydrogen, helium and other light elements are ejected ejected from the Neutroid.

Clouds of this material condense to forms stars which emit energy and in the process form heavier elements. These stars eventually exhaust their fuel and die. In the process many of these stars will explode as supernovas. The heavier elements which we find in our solar system are the remnants from these dead stars.

All this material will travel to the outer edge of the galaxy and will then start falling back in toward the neutroid. Upon hitting the neutroid, the force of the impact will be great

enough that the atoms of heavier elements will be split apart and the temperature and pressure will be great enough that this incoming matter will be converted to neutrons.

In the areas of the neutroid's magnetic poles, a nuclear fusion reaction will take place that forces a streams of material to be expelled thus completing the cycle.

(return to index)

Mass and Energy

Einstein showed that mass and energy are related by the formula

$E=MC^2$. What this famous formula says is that what we call the mass of a particle is really nothing more than a measure of the sum total of all forms of energy associated with that particle. The various forms of energy include potential energy, kinetic energy, chemical energy, nuclear binding energy, etc. Of these various forms of energy, potential energy is the most important and accounts for the largest part of the mass of particles which constitute our immediate environment.

When a particle is in a deep gravitational well, such as in the case of particles that make up the neutroid at the center of galaxies, they have very little potential energy, and hence, very little rest mass. As they are pushed out from the neutroid their potential energy and hence their rest mass is increased dramatically. When these particles eventually fall back into the neutroid, this potential energy is converted to kinetic energy and results in the particles making up the neutroid having very little rest mass but a tremendous amount of kinetic energy.

This combination of low rest mass and high kinetic energy prevent the neutroid from collapsing into a black hole as has been speculated by many scientists. This combination also makes it relatively easy for a nuclear fussion process to push material out from the neutroid in the area of the neutroid's magnetic poles.

(return to index)

Shape of Galaxies

The Concept of the Steady State Galaxy as put forth above can account for the shape of all galaxies we see in the universe. As explained above, the spiral is the basic shape of galaxies. The exact shape will be determined by the size of the neutroid, the tilt of its magnetic axis with respect to its axis of rotation and its rate of rotation .

Our Milky-Way is typical of large mature galaxies in which it takes many billions of years for the magnetic poles to make one revolution. As well, the hydrogen ejected at the magnetic poles has sufficient velocity to reach a distance of 100,000 light-years from the Neutroid and it takes it tens of billions of years to reach that distance. If the rate of rotation of the magnetic poles of the Neutroid were much greater in relation to the velocity of the hydrogen jets, the spiral

arms would overlap and become nondistinct thus forming an ELIPICAL Galaxy. If the magnetic axis were slightly less than 90 degrees with respect to the axis of rotation, a thicker galaxy would result.

BAR Galaxies are small galaxies in which the hydrogen fueling the Stars is all consumed before the Stars can escape the magnetic field of the Neutroid's magnetic poles.

Many galaxies such as M104 (NGC4594) exhibit a very prominent dust lane about their edge. This is a feature that is difficult to explain using presently accepted theories but is to be expected in some types of galaxies under the steady state galaxy theory.

(return to index)

Red Shift

The Big Bang Theory was originally proposed in order to explain the 'RED Shift' of light received by us from distant galaxies. Light received from distant stars can be broken down and analyzed as to its spectral content. It has been found that stars of a similar size and age produce identical spectral patterns which are related to their atomic composition. However, it was also found that the wavelength of the light from distant galaxies was increased in proportion to their

distance from us. Scientists have interpreted the cause of this effect to be due to a doppler shift, meaning that it is caused by the distant galaxies moving away from us, -i.e. the expanding universe. This doppler shift is the same as one gets standing near a railway track when a train passes blowing its whistle, as the train passes by, the sound of its whistle appears to drop in frequency.

In reality the universe we live in is not expanding and is in a steady state where its matter and energy are being constantly recycled. The so called Red Shift is caused by other factors. We know from a branch of Physics known as Quantum Mechanics that the Energy of a photon of light is defined by the equation $E=h\nu$ where E is the energy of the photon, h is plancks' constant and ν is its frequency. If for any reason energy is lost from a photon, its frequency will decrease in accordance with this equation.

Scientists do not as yet have a good understanding of the nature of a photon as to whether it is a particle or a wave, or some combination of both. Although experiments done by Michhelson and Morley and others have been interpreted to rule out the existence of an universal aether, this is by no means certain. Scientists can't measure what happens to a photon over a period of a minute, let alone what happens

to to it over a period of a billion years. Based on current knowledge, there is no way scientists can state with absolute certainty that photons do not lose energy over time.

The mechanism for the lose of energy by photons over time is still unclear. It could be by interaction of the photon with the stray atoms of hydrogen which are dispersed throughout intergalactic space. It is well known that photons do exert 'radiation pressure' on particles they encounter and if pressure is exerted, then energy must be transferred. Another possibility is that there is indeed an aether which absorbs some energy over time and reradiates it as a black body radiator having a temperature of 2.8 degrees K. One thing that is clear is that the radiation density of the starlight photons which leave own galaxy is equal to the radiation density of the Microwave Background radiation which is received by our galaxy. This fact is probably more than a coincidence and is an indication that the starlight radiation is being converted by some unknown process to the Microwave Background radiation. It is every bit as reasonable to assume that the Red Shift is caused by loss of energy of the photon over time as it is to assume that it is caused by a doppler effect.

Because of the downshifting in the frequency of light for whatever reason, there is a limit to how far it is possible to image distant galaxies. The actual universe will be far larger than we can imagine or detect and will probably be infinite in size.

(return to index)

MicroWave Background Radiation

A second argument which has been made to support the Big Bang Theory is the microwave background radiation. COBE has shown that the spectrum of the Microwave Background Radiation (MBR) is that of an ideal Black Body Radiator having a temperature of about 2.8 degrees K. It has also shown that this radiation has a Redshift/Blueshift to it, indicating that the earth is moving about 300Km/s relative to the shell of matter that emitted the radiation. Since this speed is too great for the earth's movement within the milky-way galaxy, it indicates that the source is outside our galaxy and that our galaxy is moving in relation to that source.

As indicated in the previous section dealing with redshift, the starlight photons radiated by galaxies gradually lose energy through some unknown process which then reradiates this energy as the Microwave Background Radiation. The wavelength of the photons of the

MBR, at the peak of the spectrum radiation curve, will be about 1mm. Since the rate of loss of energy by photons will be inversely proportional to the wavelength of those photons, and since the MBR photons have a wavelength of more than a thousand times that of visible light, the percentage loss of energy by the MBR photons will be at a rate of over one thousand times less than that of a visible photon. (If it takes a visible photon 15 billion years to lose 3/4's of it's energy, then it would take a MBR photon 15,000 billion years to lose 3/4's of it's energy). It follows that since MBR photons have a range of travel of more than one thousand times that of visible light photons, they are also a thousand times more likely to encounter a galaxy and be absorbed by the matter of that galaxy than a visible light photon would.

Thus, energy is radiated by galaxies in the form of starlight photons. Energy from these photons is gradually converted to MBR photons. These MBR photons are eventually absorbed by some other galaxy.

Since the intensity of the microwave background radiation will be relatively constant throughout the universe (assuming an infinite steady state universe), the amount of energy a galaxy will absorb from

it will be proportional to the size of that galaxy. The amount of energy a galaxy radiates is also proportional to it's size, thus an equilibrium will be reached where a galaxy will receive as much energy in the form of MBR photons as it itself radiates in the form of starlight photons.

(return to index)

Entropy

A third argument that has been put forward in support of the Big Bang Theory is entropy, in that, it is argued that the universe must eventually run down into a state of thermal equilibrium. Energy exists in various forms such as atomic binding energies, thermal energy, potential and kinetic energy, etc., all of which are associated with matter, or it exists in photons which have been radiated by matter and will eventually be reabsorbed by matter. Under the Steady State Galaxy Theory as put forth above, since all matter in a Galaxy is recycled through the Neutroid on a regular basis, all energy contained by that matter is also recycled at the same time and, thus, the universe does not run down into a state of thermal equilibrium.

There is a perception that energy only flows from hot bodies to cooler ones. This is not true for radiant energy. The MBR photons which

exhibit the characteristics of a 2.8 degree black body radiator do get absorbed by the much hotter material which makes up the galaxies. The critical factor which determines the direction of net flow of radiant energy is not the relative temperatures of the bodies but the energy densities they produce. In the case of our universe, the MBR radiation has an energy density equal to the starlight radiation energy density emitted by the galaxies. Thus, there is an equilibrium condition where galaxies receive as much energy in the form of MBR Radiation as they radiate in the form of Starlight Radiation and there will be no net flow of energy from the galaxies to the material in intergalactic space.

(return to index)

Hydrogen-Helium

A fourth argument which has been used to support the Big Bang theory is that it would account for the abundance of helium we find in the universe. The amount of helium present (24%) cannot be accounted for by star production and according to Gamow it was generated by the Big Bang.

Under the Steady State Galaxy theory, the nuclear fusion process which is expelling the material from the neutroid would generate large

amounts of helium as well as other light elements and is the source of the excess helium found in the universe.

(return to index)

Quasars

The latest Hubble pictures of quasars show that they are associated with galaxies and in most cases there is evidence that these galaxies have recently collided with other galaxies.

In normal galaxies, the neutroid at their center is obscured by a halo of material trapped in the neutroid's magnetic field. In the case of quasars, this halo of material has been temporarily destroyed by the collision with another galaxy and we are seeing the bare neutroid which is, as expected, extremely energetic.

(return to index)

Summary

The Steady State Galaxy Theory as put forth above can provide the basis for the operation of the Universe as it is seen to exist. It can not only account for the shape of all galaxies we see in the universe which is something no other theory as proposed so far can accomplish but it can also explain the existence of quasars.

As more data is gathered by the Hubble Space Telescope and other

sources, it is becoming increasingly clear that the Big Bang theory cannot account for the universe around us. I believe the the Steady State Galaxy Theory as presented here can provide the basis of an alternative to the Big Bang Theory.

(return to index) (return to top of page) Other Interesting Papers

For a historical perspective of the Big Bang Theory see Keith Stein's Essay "The Big Bang Myth"

"Endless, Boundless, Stable Universe" by Grote Reber -a pioneer in the field of Radio Astronomy.

"Dark Matter" and "Hubble's Constant in Terms of the Compton Effect" by John Kierein

Please E-mail me your comments and suggestions.

galaxy@nbnet.nb.ca

Last revised Dec 30,1996.

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At 2:32 AM, Rev Dan Izzo said...
VORTEX

Liquid - Gravity Induced Vortex

A plug is pulled under a contained volume of liquid.

The liquid above the discharge opening starts dropping down through the opening creating a lower pressure column of liquid.

The Pascal's rule of pressure in fluids says that the static pressure within the whole volume exerted sideways around this dropping column will attempt to fill into the dropping water column, creating an inverted cone of flow toward the discharge.

The surface plane of the liquid develops a hollow due to the pressure drop above the discharge.

If the liquid column is in a sufficient ratio to the opening diameter, gravitational acceleration at the surface hollow tends to outrun the discharge rate and any slightest impetus causes the liquid sliding down the slope of the depression to spin. Vortex develops easier in a conical vessel than in any other vessel, because it is the surface hollow where the gravitational acceleration causes the liquid to slide into the falling liquid column.

The static pressure orthogonal to the vortex vertical axis acts on the column as the total static pressure (area x force). Vortex spin

translates this pressure into accelerating "orbital" speed of the column. (fig 1)

The circular motion component is triggered by external influences, such as rotation of earth, or by general liquid flow, if any. The

circular motion within a vortex redirects the strictly centripetal horizontal pressure component in the liquid side railing it off the vertical axis of the vortex, accelerating the vortex circular motion. The static pressure in the liquid surrounding the vortex becomes realized into the circular motion of the vortex. Therefore, the horizontal vector of static pressure acts as a vortex spin accelerator. The dynamic relations within a vortex cause a greater transfer of gravitational energy into liquid circular motion, than can be accounted for by strictly downward static pressure calculations. If the liquid did not spin, the horizontal component of static pressure would act on the vortex axis symmetrically, and the would not be realized as spin motion.

In plain terms; while the orthogonal vector of static pressure from the surrounding volume acts on the column along the "surface" area of the whole column, it accelerates the spin of the column with total force equal to the static pressure drop per unit of area at the particular depth and at all these units. There are many more units (lets say mm^2) of the surface of the water column than in the cross section of the discharge hole.

In the most simple terms, the area across the static pressure acting on a vortex accelerating its liquid (or fluid) into spin is substantially greater than the cross sectional area of the discharge hole. The acceleration on the falling column comes from vertical acceleration of the column. In other words; the "horizontal" rotational component of gravitational acceleration of the liquid surrounding the vortex speeds up the circular component of water flow around the vortex. The vertical gravitational acceleration (drop) of water within the column is caused by vertical attraction on that column only. The vertical component of static pressure within the vortex is not lessened by all that much, as can be seen from the depth and size of the depression of the vortex at the surface.

As the column progresses in its vertical motion down, the energy of vortex circular speed is also progressively translated into the energy of vertical speed of the column. If the circular component of the vortex speed at the bottom of a discharge were used for energy production along with the falling column kinetic energy, these two components combined would supply greater total energy output than needed for lifting of the same liquid volume (per unit of time) to the original height.

In other words, we would be milking total static pressure exerted by gravitation on liquid volume from a much greater area than discharge hole area without having to pay the cost of returning that volume back to the height across that same area. It seems obvious from the above that static pressure, or tension of a field, can be translated into circular motion of a medium.

Vortex phenomenon is the proof that field "static potential" can be utilized for energy extraction. Vortex phenomenon also proves that the so-called "static potential" energy of fields is caused by dynamic energy flows. This does not violate any laws of physics, it is a law of physics.

The discharge and the surrounding containment have to be regular in shape, otherwise more and chaotic turbulences within the fluid accelerating through the discharge break the vortex symmetry and hinder its progress. Regular does not mean a perfect cone, but a shape mimicking the structure of natural turbulence. This shape is somewhat ropy walled parabolic cone.

VORTICES

The circumferential speed of liquid molecules within a vortex increases as the molecules approach the central axis of the vortex.

Therefore, it is clear that the farther a molecule is from this axis, the lesser is its orbital speed. Any object within such vortex, including the liquid molecules, spin themselves counter to the spin of the vortex, as their outer orbital speed is slower than their inner speed relative to the axis of the vortex. (Planetary gear or a bearing ball in a bearing represents such a counter spin) Unless other forces are present, any small vortice within a major vortex counter spins. Some claim that such a phenomenon has never been observed in nature. Crap. It is readily observable phenomenon on rivers. Any larger vortex in a cove of a river bend has these counter spinning satellite vortices present. They are usually transient, but are readily observable in nature.

This principle has a severe impact on the coalescing theory of planetary systems as well as galactic systems. It is obvious that planets should spin counter to planetary system. Since not all of them do, actually the majority does not, it is obvious that the spin of planets and stars has its casualty in the behavior of magnetic and electric fields, rather than being a remainder of gas cloud vortice motion within the solar system general vortex.

Any and every energy flow through a restriction under an orthogonal pressure of a field tends to develop a vortex structure. It does not matter whether that flow is liquid, gaseous or what we consider to be a field. The acceleration gain in a vortex is a utilizable phenomenon. It is one of the phenomena, which counteracts thermal entropy in the universe. It concentrates the rate of flow through a restriction utilizing a dispersed energy of a general field.

Any and every so-called massive particle contains a few geometries of vortexes (Nucleon). The main, dense flows can be considered to be magnetic field compounds of the dispersed electric field components. Electric field components qualify for a sort of aether, but not a chaotic aether of the past and not exactly liquid like in a sense of water in the sea. It's liquid is comparable to water flow in rivers.

S.D.K. November 18, 2000

INDEXFIELD FORCES

We have a few principles of the induction of attractive and repulsive force.

The primary (snake propagation) has been described in my original Tour the Force

The secondary attractive force acts between two reciprocating counter flows of positive and negative components of primary as well as secondary gravitational field. The two flows, passing each other, vortex on their common side. Their mutual propagation along the long axis is caused by the primary principle, but the friction between these two flows creates vortexes between them slowing their common side fringe down as opposed to their far sides fringe.

If you care for a graphic description, look up some photos of Jupiter atmosphere. Its atmosphere moves in strips of counter flowing gas streams and these photos will do better than anything I can draw.

It is this slowing down of the near side fringe, which attracts parallel paths together. Once we have fringes on two or more sides of a single thread of a path, created by the proximity of other paths, we get a general field strength gradient toward the mother body wherever a mother body is present in space, a star, a planet, a wire.

Why wire? Look through a fly screen at some really colorful background. Autumn leaves on maple trees will do rather well. You will find out what I am talking about when you realize that the blurry

effect you can see is caused by the "curvature of space" around the wires. That curvature is discriminate and it may resonate, although you would not see it. Such a resonance is behind the effect of Young double slit experiment. Yes, light is a sort of wave, but the explanation of Young double slit experiment is not a proof of it. It was a partly lucky and partly unlucky mistake.

Why the strings rubbing against each other by their fringes do not stop like any other frictional system? The energy of the path has nowhere to dissipate, so it does not dissipate anywhere. That energy can and is used once a gravitational field accelerates a solid body relative to the wavy pattern of the universe. It is used, or better said converted, while accelerating a fluid vortex spin and free fall. It gets transformed into higher orders of energy, be it thermal or kinetic, of what we call particulate, but other than that, it has nowhere to go. Its soliton turbulences are stable in that sense, that they pass energy one to another. The universal gravitational field is the ultimate storehouse of energy, from which all higher forms of energy arise and to which all higher forms of energy return.

We have learned how to convert thermal energy to mechanical energy and

to electric dipole energy and back to some degree.
Now we should learn
how to convert gravitational energy to thermal,
mechanical or electric
dipole energy.

S.D.K. 14. April 2001

FIELDS 6

MAGNETIC LINES OF FORCE

Spacing of magnetic lines of force depends on at least two criteria.

The first one is the size of the iron shaving particulate. The finer is the size of the particulate, the finer is the line of force structure.

The second one is the intensity of the magnetic field. As pointed out in TTF, when we steadily increase the amp value in a DC conductor, the lines of force around the conductor contract and new lines are being added from the iron dust at the margin around the conductor. On the other hand, when we steadily decrease the Amp value in a DC conductor, the lines of force spread and the margin around the conductor collects the iron dust.

When are in the process of placing a steel object between two magnets, which are in attractive orientation and lets say 3" apart, the original lines of force between the two magnets distort so that they

concentrate on the steel object. When we line up magnets in attractive orientation with spaces in between or steel objects between two magnets in attractive orientation, the lines of force join all the poles of the magnets or all the steel pieces between the magnets.

When we curve a set of magnets in attractive orientation with some spacing in between them so that the magnets create a circle, all lines of force join into the circle of the poles and the external lines of force (the donut) disappears.

The above (and much more) points out that iron, as well as magnets are able to attract and concentrate and lead magnetic field along any steel or iron or any ferromagnetic structure or permanent magnet structure. The lines of force are created by iron particulate of any size, but the size of the particulate decides how far apart the lines can be before the space between the lines begins to fill with magnetic field again.

When we stick two parallel rows of steel posts into the ground in even an approximate NS orientation, we create at least a partial gap in the magnetic field of earth within the isle between the rows of steel posts. The post distance in the row should be less than the distance of posts across the isle.

The same working arrangement can be created with help of electromagnets, again arranged into a double row, with all their poles oriented in one general geographic orientation and complying with geomagnetic field polarity orientation, because the electromagnets will again tie geomagnetic lines of force (actually create them) and concentrate the geomagnetic field into lines of force.

RELEVANCY

The relevancy of this comes out when we dig into the stone levitation story form Middle East which states:

"First, a 'magic papyrus' (paper) was placed under the stone to be moved. Then the stone was struck with a metal rod that caused the stone to levitate and move along a path paved with stones and fenced on either side by metal poles. The stone would travel along the path, wrote Al-Masudi, for a distance of about 50 meters and then settle to the ground. The process would then be repeated until the builders had the stone where they wanted it."

The same relevancy comes up when we dig into stories about Edward Leedskalnin and the artifacts left by him on his death at Coral Castle. Ed was the only man in the West who had been able to handle

monoliths without the use of heavy machinery in modern times.

Leedskalnin had no outside source of hydropower, yet he had electrical installations on his property. He was able to handle blocks of coral stone up to 29 tons in weight as evidenced by his work for anyone to see. He seems to have used grids of copper wires and other electrical devices to help him with his work. He has also been reported to "sing" to his stones while working with them. When we read through Leadskalnin's articles on magnetism, we can get the hang of what his idea behind his stone levitation was, especially when we learn that his work gloves and boots had sheet metal pieces attached to them. Unfortunately, he has not left an instruction manual and what he never revealed has to be found out.

It appears that steel or magnet or electromagnet induced geomagnetic field gap is not exactly necessary in order to achieve stone levitation, because other modern time report from Tibet does not include any steel or electric apparatus, never the less, there are possibly other ways in which magnetic field gaps can be created. Sound, on the other hand, is always reported as a factor.

Note, just about all the references needed can be found on KeelyNet.

(See Links)

SDK 7 August 2001

FIELDS 7

INDEX THE PRIMARY FIELD NETWORK

The "free" space of the universe is interwoven with uncountable paths of electric communication among the celestial bodies of the primary field. Polarity of each path of the primary field is steady and looped on the quark, nucleon, atom, molecule, planetary, galactic and eventually universal scale. Each quark and antiquark along a single path is strung on this path like a bead on a string. The permanent induction of such a path may join countless quarks of alternate electric polarity in countless bodies and the path is an integral part of those quarks. This two-way communication of flows with the quark knots on them can be compared to beads strung on a double thread string. I will assign red color to the positive "charge" quark and blue color to the negative "charge" quark. Figure one shows only one quark of a pair for simplicity.

Fig 1

The paths polarity directions between more than two bodies are not

unidirectional even for a single circle path. The curvature of the path is not caused by inertia. It is caused by the directionality of the quark orientation at the point of exit and entry. See TTF2/FIELDS 5 for the cause of mutual adherence of the two directions of a single path of electric force exchange. The whole loop can be perceived as separate strings as well as a single string.

I have to create a term for the intersection related to the wave function of a path. The term is null axis point.

Fig 2

The paths of electric communication intersect in free space either actively at null axis points or passively at any other points on the paths. Figure three shows idealized planar arrangement. The sinusoids themselves will be distorted as paths standing waves compound at some places to some degree.

Fig 3

Once we understand that the path is a flow of something and that the wave of this flow is static or standing, like the riverbed of Mississippi river, we do not have to count in any frequencies of the

paths when crossing each other as yet. The important condition is that any orthogonal paths intersect at their null axis points tying orthogonal paths together into network. Every two-path null point intersection generates turbulence between their four flows, somewhat similar to the cloverleaf intersection on a freeway. Stability of this turbulence is conditioned by the spatial frequency of the wave components of the paths. If the intersecting paths have harmonic relationship, which fits into the curved length of the turbulence (cloverleaf loop), the turbulence will be stable. If the two intersecting paths have disharmonic spatial frequencies, the turbulence will oscillate at best, and alternately fall apart and reestablish at the worst.

There are stable and unstable turbulences around the null axis point intersections of the field network holding the network together, some in a transient manner and some in a stable manner. The same is valid for the structure of nucleon, but it is not valid for the structure of emitted electron thermal phase.

When the primary gravitational field network gets disturbed at any point, it behaves as a three dimensional net. It does not mean that its structure follows three axes in Euclidian cubic axis arrangement.

It only means that the space is filled through out with this network.

The geometry of the network structure itself is multidirectional and constantly shifting. The directions of the paths within the network are just about as numerous as the paths themselves.

When we consider the field of a single charged spherical body, its geometry seems purely radial, i.e. scalar. When we consider geometry of the field of two reciprocating (opposite polarity) bodies, it changes quite drastically. The cause of the scalar field of a single charged body lies in the induction taking place between the body and air molecules and water vapor molecules and earth molecules and whatever molecules, or better said their component quarks all around the so called charged body. In practice, there is no scalar field. Scalar field is a theoretical idealization of crooked natural geometry. Perfect scalar field would require a perfect charged sphere within another perfect sphere (including perfect material), within which the charged sphere would be placed in dead center. The outer sphere would have to be perfectly isolated from the rest of the universe, otherwise it would induce its induced polarity toward the outside becoming a charged body to the outside and the ideal theoretical scalar field would become the practical crooked field. In

reality, the inner charged body actually becomes electrically neutral.
(Courtesy Joe Hiding)

Anyway, the network can be obviously shaped and disturbed and induced and manipulated as long as we know what we are dealing with and what we are doing with it. The notion that light is an electromagnetic phenomenon equivalent to radio waves and microwaves is incorrect. The experimentation of Nicola Tesla in Colorado has clearly shown that repeated manipulation of the geometry of the general field causes a general wave disturbance through out the network of gravitational field. This disturbance is a real longitudinal wave generated within the gravitational network. On the other hand, light is progressive unification of electric paths flows into a local magnetic flow.

The speed of light and the speed of gravitation and the speed of radio wave are interdependent because the wavelengths are interdependent. When you look back to the volleyball net analogy, you can realize that the transverse wave of single net string and the longitudinal wave of the whole net depend on each other in some ratio, whatever that ratio may be. It is a bit confusing to recognize what is a longitudinal wave within the whole network and what is a transverse wave in it. A

disturbance, which propagates in one direction as a longitudinal wave, causes transverse wave in orthogonal directions and vice versa. Our concept of the transverse and longitudinal is derived from our string and spring experimenting, which limits our perception to the behavior of the string or the spring. We tear phenomena out of their context and study them out of their context. Then we grossly err applying the newly derived (experimentally as well as mentally confirmed within artificially imposed limits) concepts to the general behavior of the limitless universe.

S.D.K. 14. April 2001

FIELDS 5

INDEX

FORCES This site is dedicated to ideas. Some are mine, some belong to others. Any and all of the information on this site is as is. If you disagree with anything here, be aware that I also disagree with a lot of things.

BY S.D.K.

TOUR THE FORCE

Is a series of closely interrelated documents outlining the problems with the currently established interpretations of behavior of the most fundamental physical phenomena like heat, light, el. current etc. It does not argue with the established mathematical processes (so called mathematical theories), as most are reasonably valid generalizations of functions of particular natural forces. It argues with the concepts of why things behave the way they do and with their causality and geometrical as well as functional relationships, not with how much they behave.

Tour the Force contains a somewhat outdated line of deduction of what force phenomena really are all about and what are their mutual relations. The particulate causality of gravitational force and other force fields as such had to give way to simpler concept of wave relationship of energy flows along waves. Yet, this original Tour the Force has its relevancy in paving the road to understanding of Tour the Force 2

GISMOS

Contains assortment of descriptions and comments on a few man made contraptions, which were or are claimed to work as intended, as undependable as some may be.

TOUR THE FORCE 2

Contains updates to the original Tour the Force. This part is in development and I am uploading new documents as I manage to solve the different parts of the over all puzzle and put its documents into a reasonable form. My original Tour the Force is a prerequisite to understanding of Tour the Force 2.

EXPERIMENTS

Contains assorted bits and pieces of little known knowledge about anomalous experiments done by "less" learned folks. Some may have my explanations and all of them stress the need of humanity as such to resist the dogma of the established authority on truth.

IDEAS

Contains assorted ideas and experiences. Some of the ideas have the potential to eventually move to experiments once conclusively performed.

LINKS

Scientific as well as not so scientific references. They should be understood as pointers in directions of possible research, not as exhaustive sources of information. Lots of interesting stuff, lots of garbage. You have to do your own research and sorting out. Good luck.

VICTOR S. GREBENNIKOV

English translation of the original Russian text.

PATENTS

First of my patenting experiences concerns a simple brushless alternator. This attempt had gone to hell due to bottomless pockets of my former patent lawyers (for a translation of the English description into legalese worth close to C\$ 5 500, submission fees extra). You can view the patent application here, as it was submitted to US patent office by my ex-patent agents. The patent has fallen into public domain due to insufficient funds.

My second patent experience concerns a very simple and very effective air (gas) dryer so far applied only on compressed air systems. I have applied for a patent registration and filed an application (Canadian) according to Canada Patent Office instructions myself. The application has been accepted and had cost C\$150.00 plus registered mail. I have

not quite revealed the whole patent here, but you can find its general description and experience with its performance here.

INDEX

At 2:40 AM, Rev Dan Izzo said...
The Decay of the False Vacuum
Written by Sten Odenwald

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In the recently developed theory by Steven Weinberg and Abdus Salam, that unifies the electromagnetic and weak forces, the vacuum is not empty. This peculiar situation comes about because of the existence of a new type of field, called the Higgs field. The Higgs field has an important physical consequence since its interaction with the W, W and Z particles (the carriers of the weak force) causes them to gain mass at energies below 100 billion electron volts (100 Gev). Above this energy they are quite massless just like the photon and it is this characteristic that makes the weak and electromagnetic forces so similar at high energy.

On a somewhat more abstract level, consider Figures 1 and 2

representing the average energy of the vacuum state. If the universe were based on the vacuum state in Figure 1, it is predicted that the symmetry between the electromagnetic and weak interactions would be quite obvious. The particles mediating the forces would all be massless and behave in the same way. The corresponding forces would be indistinguishable. This would be the situation if the universe had an average temperature of 1 trillion degrees so that the existing particles collided at energies of 100 Gev. In Figure 2, representing the vacuum state energy for collision energies below 100 Gev, the vacuum state now contains the Higgs field and the symmetry between the forces is suddenly lost or 'broken'. Although at low energy the way in which the forces behave is asymmetric, the fundamental laws governing the electromagnetic and weak interactions remain inherently symmetric. This is a very remarkable and profound prediction since it implies that certain symmetries in Nature can be hidden from us but are there nonetheless.

During the last 10 years physicists have developed even more powerful theories that attempt to unify not only the electromagnetic and weak forces but the strong nuclear force as well. These are called the

Grand Unification Theories (GUTs) and the simplest one known was developed by Howard Georgi, Helen Quinn, and Steven Weinberg and is called SU(5), (pronounced 'ess you five'). This theory predicts that the nuclear and 'electroweak' forces will eventually have the same strength but only when particles collide at energies above 1 thousand trillion GeV corresponding to the unimaginable temperature of 10 thousand trillion trillion degrees! SU(5) requires exactly 24 particles to mediate forces of which the 8 massless gluons of the nuclear force, the 3 massless intermediate vector bosons of the weak force and the single massless photon of the electromagnetic force are 12. The remaining 12 represent a totally new class of particles called Leptoquark bosons that have the remarkable property that they can transform quarks into electrons. SU(5) therefore predicts the existence of a 'hyperweak' interaction; a new fifth force in the universe! Currently, this force is 10 thousand trillion trillion times weaker than the weak force but is nevertheless 100 million times stronger than gravity. What would this new force do? Since protons are constructed from 3 quarks and since quarks can now decay into electrons, through the Hyperweak interaction, SU(5) predicts that protons are no longer the stable particles we have always imagined

them to be. Crude calculations suggest that they may have half-lives between 10^{29} to 10^{33} years. An immediate consequence of this is that even if the universe were destined to expand for all eternity, after 'only' 10^{32} years or so, all of the matter present would catastrophically decay into electrons, neutrinos and photons. The Era of Matter, with its living organisms, stars and galaxies, would be swept away forever, having represented but a fleeting episode in the history of the universe. In addition to proton decay, SU(5) predicts that at the energy characteristic of the GUT transition, we will see the affects of a new family of particles called supermassive Higgs bosons whose masses are expected to be approximately 1 thousand trillion GeV! These particles interact with the 12 Leptoquarks and make them massive just as the Higgs bosons at 100 GeV made the W, W and Z particles heavy. Armed with this knowledge, let's explore some of the remarkable cosmological consequences of these exciting theories.

The GUT Era

To see how these theories relate to the history of the universe, imagine if you can a time when the average temperature of the universe was not the frigid 3 K that it is today but an incredible 10 thousand

trillion trillion degrees (10^{15} GeV). The 'Standard Model' of the Big Bang, tells us this happened about 10^{-37} seconds after Creation. The protons and neutrons that we are familiar with today hadn't yet formed since their constituent quarks interacted much too weakly to permit them to bind together into 'packages' like neutrons and protons. The remaining constituents of matter, electrons, muons and tau leptons, were also massless and traveled about at essentially light-speed; They were literally a new form of radiation, much like light is today! The 12 supermassive Leptoquarks as well as the supermassive Higgs bosons existed side-by-side with their anti-particles. Every particle-anti particle pair that was annihilated was balanced by the resurrection of a new pair somewhere else in the universe. During this period, the particles that mediated the strong, weak and electromagnetic forces were completely massless so that these forces were no longer distinguishable. An inhabitant of that age would not have had to theorize about the existence of a symmetry between the strong, weak and electromagnetic interactions, this symmetry would have been directly observable and furthermore, fewer types of particles would exist for the inhabitants to keep track of. The universe would actually have been much simpler then!

As the universe continued to expand, the temperature continued to plummet. It has been suggested by Demetres Nanopoulos and Steven Weinberg in 1979 that one of the supermassive Higgs particles may have decayed in such a way that slightly more matter was produced than anti-matter. The remaining evenly matched pairs of particles and anti-particles then annihilated to produce the radiation that we now see as the 'cosmic fireball'.

Exactly what happened to the universe as it underwent the transitions at 10(15) and 100 GeV when the forces of Nature suddenly became distinguishable is still under investigation, but certain tantalizing descriptions have recently been offered by various groups of theoreticians working on this problem. According to studies by Alan Guth, Steven Weinberg and Frank Wilczek between 1979 and 1981, when the GUT transition occurred, it occurred in a way not unlike the formation of vapor bubbles in a pot of boiling water. In this analogy, the interior of the bubbles represent the vacuum state in the new phase, where the forces are distinguishable, embedded in the old symmetric phase where the nuclear, weak and electromagnetic forces are indistinguishable. Inside these bubbles, the vacuum energy is of the

type illustrated by Figure 2 while outside it is represented by Figure

1. Since we are living within the new phase with its four

distinguishable forces, this has been called the 'true' vacuum state.

In the false vacuum state, the forces remain indistinguishable which

is certainly not the situation that we find ourselves in today!

Cosmic Inflation

An exciting prediction of Guth's model is that the universe may have

gone through at least one period in its history when the expansion was

far more rapid than predicted by the 'standard' Big Bang model. The

reason for this is that the vacuum itself also contributes to the

energy content of the universe just as matter and radiation do

however, the contribution is in the opposite sense.

Although gravity

is an attractive force, the vacuum of space produces a force that is

repulsive. As Figures 1 and 2 show, the minimum energy state of the

false vacuum at 'A' before the GUT transition is at a higher energy

than in the true vacuum state in 'B' after the transition. This energy

difference is what contributes to the vacuum energy. During the GUT

transition period, the positive pressure due to the vacuum energy

would have been enormously greater than the restraining pressure

produced by the gravitational influence of matter and radiation. The universe would have inflated at a tremendous rate, the inflation driven by the pressure of the vacuum! In this picture of the universe, Einstein's cosmological constant takes on a whole new meaning since it now represents a definite physical concept ; It is simply a measure of the energy difference between the true and false vacuum states ('B' and 'A' in Figures 1 and 2.) at a particular time in the history of the universe. It also tells us that, just as in de Sitter's model, a universe where the vacuum contributes in this way must expand exponentially in time and not linearly as predicted by the Big Bang model. Guth's scenario for the expansion of the universe is generally called the 'inflationary universe' due to the rapidity of the expansion and represents a phase that will end only after the true vacuum has supplanted the false vacuum of the old, symmetric phase.

A major problem with Guth's original model was that the inflationary phase would have lasted for a very long time because the false vacuum state is such a stable one. The universe becomes trapped in the cul-de-sac of the false vacuum state and the exponential expansion never ceases. This would be somewhat analogous to water refusing to

freeze even though its temperature has dropped well below 0 Centigrade. Recent modifications to the original 'inflationary universe' model have resulted in what is now called the 'new' inflationary universe model. In this model, the universe does manage to escape from the false vacuum state and evolves in a short time to the familiar true vacuum state.

We don't really know how exactly long the inflationary phase may have lasted but the time required for the universe to double its size may have been only 10^{-34} seconds. Conceivably, this inflationary period could have continued for as 'long' as 10^{-24} seconds during which time the universe would have undergone 10 billion doublings of its size! This is a number that is truly beyond comprehension. As a comparison, only 120 doublings are required to inflate a hydrogen atom to the size of the entire visible universe! According to the inflationary model, the bubbles of the true vacuum phase expanded at the speed of light. Many of these had to collide when the universe was very young in order that the visible universe appear so uniform today. A single bubble would not have grown large enough to encompass our entire visible universe at this time; A radius of some 15-20 billion light years. On the other hand, the new inflationary model states that

even the bubbles expanded in size exponentially just as their separations did. The bubbles themselves grew to enormous sizes much greater than the size of our observable universe. According to Albrecht and Steinhardt of the University of Pennsylvania, each bubble may now be 10(3000) cm in size. We should not be too concerned about these bubbles expanding at many times the speed of light since their boundaries do not represent a physical entity. There are no electrons or quarks riding some expanding shock wave. Instead, it is the non-material vacuum of space that is expanding. The expansion velocity of the bubbles is not limited by any physical speed limit like the velocity of light.

GUMs in GUTs

A potential problem for cosmologies that have phase transitions during the GUT Era is that a curious zoo of objects could be spawned if frequent bubble mergers occurred as required by Guth's inflationary model. First of all, each bubble of the true vacuum phase contains its own Higgs field having a unique orientation in space. It seems likely that no two bubbles will have their Higgs fields oriented in quite the same way so that when bubbles merge, knots will form. According to Gerhard t'Hooft and Alexander Polyakov, these knots in the Higgs field

are the magnetic monopoles originally proposed 40 years ago by Paul Dirac and there ought to be about as many of these as there were bubble mergers during the transition period. Upper limits to their abundance can be set by requiring that they do not contribute to 'closing' the universe which means that for particles of their predicted mass (about 10^{16} GeV), they must be 1 trillion trillion times less abundant than the photons in the 3 K cosmic background. Calculations based on the old inflationary model suggest that the these GUMs (Grand Unification Monopoles) may easily have been as much as 100 trillion times more abundant than the upper limit! Such a universe would definitely be 'closed' and moreover would have run through its entire history between expansion and recollapse within a few thousand years. The new inflationary universe model solves this 'GUM' overproduction problem since we are living within only one of these bubbles, now almost infinitely larger than our visible universe. Since bubble collisions are no longer required to homogenize the matter and radiation in the universe, very few, if any, monopoles would exist within our visible universe.

Horizons

A prolonged period of inflation would have had an important influence

on the cosmic fireball radiation. One long-standing problem in modern cosmology has been that all directions in the sky have the same temperature to an astonishing 1 part in 10,000. When we consider that regions separated by only a few degrees in the sky have only recently been in communication with one another, it is hard to understand how regions farther apart than this could be so similar in temperature. The radiation from one of these regions, traveling at the velocity of light, has not yet made it across the intervening distance to the other, even though the radiation may have started on its way since the universe first came into existence. This 'communication gap' would prevent these regions from ironing-out their temperature differences.

With the standard, Big Bang model, as we look back to earlier epochs from the present time, the separations between particles decrease more slowly than their horizons are shrinking. Neighboring regions of space at the present time, become disconnected so temperature differences are free to develop. Eventually, as we look back to very ancient times, the horizons are so small that every particle existing then literally fills the entire volume of its own, observable universe. Imagine a universe where you occupy all of the available space! Prior

to the development of the inflationary models, cosmologists were forced to imagine an incredibly well-ordered initial state where each of these disconnected domains (some 10^{86} in number) had nearly identical properties such as temperature. Any departure from this situation at that time would have grown to sizable temperature differences in widely separated parts of the sky at the present time. Unfortunately, some agency would have to set-up these finely-tuned initial conditions by violating causality. The contradiction is that no force may operate by transmitting its influence faster than the speed of light. In the inflationary models, this contradiction is eliminated because the separation between widely scattered points in space becomes almost infinitely small compared to the size of the horizons as we look back to the epoch of inflation. Since these points are now within each others light horizons, any temperature difference would have been eliminated immediately since hotter regions would now be in radiative contact with colder ones. With this exponentially-growing, de Sitter phase in the universe's early history we now have a means for resolving the horizon problem.

Instant Flat Space

Because of the exponential growth of the universe during the GUT Era,

its size may well be essentially infinite for all 'practical' purposes . Estimates by Albrecht and Steinhardt suggest that each bubble region may have grown to a size of 10^{30} cm by the end of the inflationary period. Consequently, the new inflationary model predicts that the content of the universe must be almost exactly the 'critical mass' since the sizes of each of these bubble regions are almost infinite in extent. The universe is, for all conceivable observations, exactly Euclidean (infinite and flat in geometry) and destined to expand for all eternity to come. Since we have only detected at most 10 percent of the critical mass in the form of luminous matter, this suggests that 10 times as much matter exists in our universe than is currently detectable. Of course, if the universe is essentially infinite this raises the ghastly spectre of the eventual annihilation of all organic and inorganic matter some 10^{32} years from now because of proton decay.

In spite of its many apparent successes, even the new inflationary universe model is not without its problems. Although it does seem to provide explanations for several cosmological enigmas, it does not provide a convincing way to create galaxies. Those fluctuations in the density of matter that do survive the inflationary period are so dense

that they eventually collapse into galaxy-sized blackholes! Neither the precise way in which the transition to ordinary Hubbel expansion occurs nor the duration of the inflationary period are well determined.

If the inflationary cosmologies can be made to answer each of these issues satisfactorily we may have, as J. Richard Gott III has suggested, a most remarkable model of the universe where an almost infinite number of 'bubble universes' each having nearly infinite size, coexist in the same 4-dimensional spacetime; all of these bubble universes having been brought into existence at the same instant of creation. This is less troublesome than one might suspect since, if our universe is actually infinite as the available data suggests, so too was it infinite even at its moment of birth! It is even conceivable that the universe is 'percolating' with new bubble universes continually coming into existence. Our entire visible universe, out to the most distant quasar, would be but one infinitesimal patch within one of these bubble regions. Do these other universes have galaxies, stars, planets and living creatures statistically similar to those in our universe? We may never know. These other universes, born of the same paroxicism of Creation as our

own, are forever beyond our scrutiny but obviously not our imaginations!

Beyond The Beginning...

Finally, what of the period before Grand Unification? We may surmise that at higher temperatures than the GUT Era, even the supermassive Higgs and Leptoquark bosons become massless and at long last we arrive at a time when the gravitational interaction is united with the weak, electromagnetic and strong forces. Yet, our quest for an understanding of the origins of the universe remains incomplete since gravity has yet to be brought into unity with the remaining forces on a theoretical basis. This last step promises to be not only the most difficult one to take on the long road to unification but also appears to hold the greatest promise for shedding light on some of the most profound mysteries of the physical world. Even now, a handful of theorists around the world are hard at work on a theory called Supergravity which unites the force carriers (photons, gluons, gravitons and the weak interaction bosons) with the particles that they act on (quarks, electrons etc). Supergravity theory also predicts the existence of new particles called photinos and gravitinos. There is even some speculation that the photinos may fill the entire

universe and account for the unseen 'missing' matter that is necessary to give the universe the critical mass required to make it exactly Euclidean. The gravitinos, on the other hand, prevent calculations involving the exchange of gravitons from giving infinite answers for problems where the answers are known to be perfectly finite. Hitherto, these calculations did not include the affects of the gravitinos.

Perhaps during the next decade, more of the details of the last stage of Unification will be hammered out at which time the entire story of the birth of our universe can be told. This is, indeed, an exciting time to be living through in human history. Will future generations forever envy us our good fortune, to have witnessed in our lifetimes the unfolding of the first comprehensive theory of Existence?

In the Mandelbrot set, nature (or is it mathematics) provides us with a powerful visual counterpart of the musical idea of 'theme and variation': the shapes are repeated everywhere, yet each repetition is somewhat different. It would have been impossible to discover this property of iteration if we had been reduced to hand calculation, and I think that no one would have been sufficiently bright or ingenious to 'invent' this rich and complicated theme and variations. It leaves

us no way to become bored, because new things appear all the time, and no way to become lost, because familiar things come back time and time again. Because this constant novelty, this set is not truly fractal by most definitions; we may call it a borderline fractal, a limit fractal that contains many fractals. Compared to actual fractals, its structures are more numerous, its harmonies are richer, and its unexpectedness is more unexpected

Benoit Mandelbrot

MANDELBROT SET

As mentioned earlier, no matter what the value of the complex parameter c is, in the iteration of the complex quadratic map there is a unique trapping set T_c and a corresponding escape set E_c . The Julia set (J_c) is the boundary between the set T_c and the set E_c . The Mandelbrot set is an answer to the following kind of enquiry. Of the infinite number of possible Julia sets that exists, is there any organizing principle that classifies these Julia sets.

The key results for this classification of Julia sets were already there in the works of Julia and Fatou who knew about the topological dichotomy in the Julia set. The result states that for any choice of the complex parameter c the associated Julia set J_c and the trapping set T_c are either topologically connected (severely deformed circles) or totally disconnected (generalized Cantor dust like).

This was indeed the key result that clued Mandelbrot, in 1979, to visualize a set in the complex parameter space c which is called the Mandelbrot set. The Mandelbrot set consists of all values of c that have connected Julia sets. Picking value of c that is outside the Mandelbrot set, and iterating the equation to obtain the J_c for this particular choice of c gives a disconnected Julia set.

Note important, as it is, the classification of Julia set in terms of disconnected sets, this still doesn't allow one to visualize the shape of the set of points, in the parameter space, for which the Julia set is connected. The genius is in the realization of the interrelation between the above mentioned dichotomy and in the long term behavior of the critical point.

The computer graphical renderings of Mandelbrot set is made possible

by this important fact which states -- The trapping set T_c is connected if and only if the critical orbit is bounded. This definition makes it possible to draw a portrait of the Mandelbrot set.

For each complex number c , a sequence of iterates Z_n is defined by 3. The complex number c is a member of the Mandelbrot set if and only if $|Z_n|$ is finite for all values of n . The bars indicate the magnitude of Z_n given by $Z_n = \sqrt{X_n^2 + Y_n^2}$ where X_n is the real component and Y_n the imaginary component of Z_n . The point, in the complex parameter space, is colored white if the orbit is unbounded for that particular value of c and is colored black if the orbits are bounded.

The figure shown below is the Mandelbrot set (in black). It extends from the cusp of the cardioid at $\text{Re } c = 0.25$ to the tip of the tail at $\text{Re } c = -2$ along the real axis and from $\text{Im } c = -1.25$ to $\text{Im } c = 1.25$ along the imaginary axis.

Monochrome Mandelbrot Set Portrait

The basic algorithm to generate the Mandelbrot set is as follows. For each pixel c , start with $Z = 0$. Iterate the above equation up to N

times, exiting if $|Z|$ gets large. If you finish the loop, the point is probably inside the Mandelbrot set. If you exit, the point is outside and can be colored according to how many iterations were completed. You can exit if $|Z| > 2$, since if Z gets this big it will go to infinity. The maximum number of iterations, N , can be selected as desired, for instance 200. Larger values of N will give sharper detail but take longer.

A note about why we start from $Z_0 = 0$. Zero is the critical point of Mandelbrot equation given by $Z^2 + c$. That is, a point where $d/dz (Z^2 + c) = 0$. Critical points are important because by a result of Fatou: every attracting cycle (T_c) for a polynomial or rational function attracts at least one critical point. Thus, testing the critical point shows if there is any stable attractive cycle. For the case of equation with multiple critical points, all the critical points must be tested.

DETAILS

For the sake of clarity the largest cardioid (heart) shaped central region of the Mandelbrot set will be referred to as the main body of

the Mandelbrot set (M1 -- the region labeled 1 in the figure(3) below). All other pieces that are attached to the main body will be referred to as the buds. The largest bud that is attached to the main body (along the real axis) will be called the M2 bud (bud labeled 2 in figure(3) below). The main body of the Mandelbrot set intersects the real axis at $\hat{A}c = 0.25$ and $\hat{A}c = -0.75$. Extending the stability analysis criteria discussed for the case logistic equation, it is easy to see that the fixed point of the complex quadratic iterator is stable along the real axis for precisely the interval mentioned above.

The determination of the boundary of the main body of the Mandelbrot set relies on the realization that any value of the complex parameter picked from within the main body of the Mandelbrot set the corresponding Julia set is a boundary between the Escape set and the trapping set of the stable fixed point of the quadratic map. The boundary of the main body defines the locus of points (in the parameter space) for which the fixed point is indifferent, that is, the modulus of the derivative of the map about the fixed point is exactly equal to 1. Using this fact one can determine the explicit expression for the outline of the M-set's main body.

If z is the fixed point of complex quadratic map, it follows that z satisfies the equation $z^2 - z + c = 0$. The derivative of the map about the fixed point z is given by $2z$ which in polar coordinates can be expressed as $2z = re^{if}$. Combining these two equations, and solving for c , we obtain

$$c = 1$$

$$r^2 e^{2if} - 1$$

$$r^2 e^{2if} - 1 = 0 \quad (1)$$

Note, for the value of $r < 1$ the above equation determines the points inside the main body of the Mandelbrot set and $r = 1$ gives the boundary of M_1 . The above equation is the parametrization of the curve in the complex plane for $0 \leq f < 2\pi$. Thus, is explicitly seen as an equation of cardioid when expressed as

$$\hat{c}_r = \cos(f)/2 - \cos(2f)/4$$

$$\hat{c}_i = \sin(f)/2 - \sin(2f)/4 \quad (2)$$

by equating the real and imaginary parts of the equation.

It turns out, that at the parameter values, $f = 2\pi/k$, where $k = 2, 3,$

$4, 5 \frac{1}{4}$, one of the main buds of the Mandelbrot set is attached to M1 set. Moreover, the period of the attractive cycles that belong to these buds is given by the number k in $2p/k$. Also, there is another amazing fact about the arrangement of the buds. Two given buds of periods p and q at the cardioid determine the period of the largest bud in between them as $p+q$. (This is illustrated for the case of $p = 2$ and $q = 3$ in figure(3) below). Similar rules are true for buds on buds.

Figure 3: The buds of the Mandelbrot set corresponding to Julia sets that bound the basins of attraction (trapping sets) of periodic orbits. The numbers in the figure indicate the periods of these orbits.

Figure 4: The plot of equation (2) which defines the boundary of the main body (M1) of the Mandelbrot set and the numbers indicate the periodicity of the buds that attach to the main body of the Mandelbrot set and the point where they attach to the main body of the Mandelbrot set.

The above two remarkable property corresponding to the periodicity of the bud was the reason for indexing the buds attached to the main body of the M-set as M_n . Thus, from the above argument the period 2 bud is attached at an angle p (setting $k = 2$ in $f = 2p/k$), similarly period 3 is the attached at $f = 120$ and so on. Figure(4) above shows the buds of the Mandelbrot set corresponding to Julia sets that bound basins of attraction of periodic orbits. The numbers in the figure indicate the periods of these orbits.

MATHEMATICAL MODEL OF CHOLESTEROL BIOSYNTHESIS REGULATION IN THE CELL

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Resume

Motivation:

An adequate mathematical model of the complex
nonlinear gene network

regulating cholesterol synthesis in the cell is necessary for investigating its possible function modes and determining optimal strategies of its correction, therapeutic included.

Results:

Dynamic model of function of the gene network regulating cholesterol synthesis in the cell is constructed. The model is described in terms of elementary processes-biochemical reactions. The optimal set of parameters of the model is determined. Patterns of the system behavior under different conditions are simulated numerically.

Introduction

Cholesterol, an amphipathic lipid, is an essential structural component of cell membranes and outer lipoprotein layer of blood serum. In addition, cholesterol is a precursor of several other steroids, namely, corticosteroids, sex hormones, bile acids, and vitamin D. Cholesterol is synthesized in many tissues from acetyl-CoA and its main fraction in blood serum resides with low-density lipoproteins (LDL). Free cholesterol is removed from the tissues with involvement of high-density lipoproteins (HDL) and transported to the liver to be transformed into bile acids. Its major pathological role

is in serving as a factor causing atherosclerosis of vital cerebral arteries, heart muscle, and other organs. Typical of coronary atherosclerosis is a high ratio of LDL to HDL cholesterol [Marry R. et al., 1993]. Haploid and diploid versions of the dynamic model of function of the gene network regulating cholesterol synthesis in the cell are constructed in the work. The models are described in terms of elementary processes-biochemical reactions. The optimal set of parameters of the model allowing the calculations to comply with the published experimental data is determined through numerical experiments. Patterns of the system dynamic behavior under different conditions are simulated numerically. The results obtained are compared with the available experimental data.

Cholesterol biosynthesis and its regulation

Approximately half of the cholesterol amount present in the organism is formed through biosynthesis (about 500 mg/day) [Marry R. et al., 1993], while the other half is consumed with food. The main part of cholesterol is synthesized in the liver (~ 80% of the total cholesterol produced), intestines (~ 10%), and skin (~ 5%) [Klimov & Nikul'cheva, 1999].

Acetyl-CoA is the source of all the carbon atoms composing the

cholesterol molecule. The main stages of cholesterol biosynthesis are described in the GeneNet database.

Cholesterol regulates its own synthesis and the synthesis of LDL receptors at the level of transcription through a negative feedback mechanism [Wang et al., 1994]. A decrease in the cell cholesterol content stimulates SRP (sterol regulated protease)-catalyzed proteolysis of the N-terminal fragment of SREBP (sterol regulatory element-binding protein), bound to the endoplasmic reticulum (ER) membrane. On leaving the ER membrane, SREBP migrates to the cell nucleus to bind the so-called sterol regulatory element (SRE), residing in the promoter of the receptor gene, thereby switching on the receptor synthesis. In addition, SREBP activates the gene of synthase of hydroxymethyl glutaryl (HMG)-CoA reductase [Klimov & Nikul'cheva, 1999] as well as farnesyl diphosphate synthase and squalene synthase syntheses. Several studies have demonstrated rather fast effect of cholesterol on the reductase activity, unexplainable by the mere effect on the rate of enzyme synthesis. HMG-CoA reductase may be either active or inactive. Phosphorylation-dephosphorylation reactions provide for the transitions from one state into the other [Marry R. et al., 1993].

The main factors affecting the cholesterol balance at the cell level

[Marry R. et al., 1993] are shown in Fig. 1.

Figure 1. Factors affecting the cholesterol balance at the cell level:

C, cholesterol; CE, cholesterol esters; ACAT, acyl-CoA:cholesterol

acyltransferase; LCAT, lecithin:cholesterol acyltransferase; A1,

apoprotein A1; LDL, low density lipoproteins; VLDL, very low density

lipoproteins, HDL, high density lipoproteins; (-), inhibition of

cholesterol synthesis; and (+) ACAT activation

[Marry R. et al., 1993].

Cell cholesterol content increases if (1) specific LDL receptors bind

cholesterol-containing lipoproteins; (2)

cholesterol-containing

lipoproteins are bound without receptors; (3) free cholesterol,

contained in cholesterol-rich lipoproteins is bound by cell membranes;

(4) cholesterol is synthesized; and (5) cholesterol ester hydrolase-

catalyzed hydrolysis of cholesterol esters takes place.

Cell cholesterol content decreases if (1)

cholesterol passes from

membranes into cholesterol-poor lipoproteins, in particular LDL3 or

LDL synthesized de novo (lecithin:cholesterol acyltransferase promotes

this transition); (2) ACAT-catalyzed cholesterol esterification takes place; and (3) cholesterol is used for synthesizing other steroids, in particular, hormones or bile acids in the liver [Marry R. et al., 1993].

Methods and algorithms

A generalized chemical kinetic approach [Bazhan et al., 1995] was used for the simulation. A blockwise formalization was used, that is, each process is separated in an individual block and described independently of the other processes. A block is a simulation quantum, and its formal structure is completely described with the following three vector components: (1) X , the list of dynamic variables; (2) P , the list of constants; and (3) F , type of the right part of the system $dX/dt = F(X, P)$ determining the rule these dynamic variables change with time. Four types of blocks are used to describe the processes in the model, namely:

Successive application of the blockwise approach to description of biological systems is based on the law of summation of the rates of elementary processes while uniting them in a general scheme of the simulated object development. The method of Gear [Gear, 1971] was used

for numerical integration of the set of differential equations.

Results

Mathematical model

The mathematical model of intracellular cholesterol biosynthesis regulation comprises 65 kinetic blocks, 40 dynamic variables, and 93 reaction constants. The diploid model comprises 72 kinetic blocks, 44 dynamic variables, and 130 reaction constants. Experimental data, partially listed in table below, were used for the initial evaluation of certain parameters of enzymatic reactions with the system.

Table. Some constants of enzyme reactions

Enzyme

Substrate

Organism

Organ

Kc, sec-1 Km, mM

HMG-CoA reductase HMG-CoA Rattus norvegicus [Gil et al., 1981] Liver

980

(-)

HMG-CoA reductase HMG-CoA Rattus norvegicus

[Kleinsek & Porter, 1979]

Liver (-)

0.0169

HMG-CoA reductase HMG-CoA Rattus norvegicus [Sugano et al., 1978]

Intestine (-)

0.0417

HMG-CoA synthase Acetyl-CoA

Acetoacetyl-CoA

Gallus gallus (hen) [Reed et al., 1975] Liver (-)

(-)

0.1? 0.7

<0.005

HMG-CoA synthase Acetyl-CoA Homo sapiens [Rokosz et al., 1994] Adrenal

(-)

0.029

Acetoacetyl-CoA thiolase Acetoacetyl-CoA

CoA

Bos taurus (calf) [Huth et al., 1975] Liver (-)

(-)

0.01

0.025

Acetoacetyl-CoA thiolase Acetoacetyl-CoA

CoA

Gram-negative bacteria [Kim & Copeland 1997]

2.38e+4

2.38e+4

0.042

0.056

Presqualene synthase Farnesyl diphosphate

Saccharomyces cerevisiae

(yeast) [Sasiak & Rilling, 1988] (-)

0.03

Geranyltransferase Geranyl PP
Isopentyl PP
Homo sapiens [Barnard & Popjak 1981] Liver 40.7

40.7

4.4e-4

9.4e-4

Lanosterol synthase (R,S)-squalene-2,3-oxide
Saccharomyces cerevisiae
[Balliano et al., 1992] (-)
0.035

ACAT-1 Oleoyl-CoA
Cholesterol
Homo sapiens (Cricetulus griseus) [Chang et al.,
1998] Ovary (-)
7.4e-3

Bile acid hydrolase Taurocholate Lactobacillus sp.
(bacteria) [Lundeen
& Savage, 1990] 1900
0.76

Other published data were used for evaluating
parameters of the model,
in particular [Klimov & Nikul'cheva, 1999]:

Fasting LDL concentration in adult human blood
serum LDL = 200- 300
mg/dl.

The average number of unesterified and esterified
cholesterol
molecules per one LDL particle QEC = 475 and QEC =
1310.

LDL half-life in blood of healthy humans $t_{1/2} = 2.5$ days; therefore,
 $k_{LDLutil.} = \ln(2)/t_{1/2} = 3.21 \cdot 10^{-6} \text{ sec}^{-1}$.

Total number of LDL receptors per one cell at 37°C
 $Q_{LDLR} = 15,000 - 70,000$.

Lifespan of LDL receptors $t = 1 - 2$ days; therefore,
 $k_{LDLRutil.} = 1/t \sim 7.72 \cdot 10^{-6} \text{ sec}^{-1}$.

LDL receptor recyclization span $t \sim 20$ min.

The values of the rest parameters of the model were determined through numerical experiments.

Figure 2. Kinetics of main components of the system regulating cholesterol biosynthesis in the cell.

Results of calculations

The results obtained while simulating the cell response to a twofold increase in LDL particle content in blood serum (Fig. 2, b) illustrate the model performance. The number of receptors bound to LDL increases (d); unbound, decreases (e). Intracellular concentrations of free cholesterol (a) and its esters (c) increase. Free cholesterol binds the protease (SRP), preventing SREBP-1 formation (f). Productions of enzymes involved in the internal cellular cholesterol synthesis

(HMG-CoA reductase; g), LDL receptors, and intermediate low-molecular-weight components (mevalonic acid, h; squalene, i) are stopped. Cholesterol concentration in the cell is decreasing. No further influence on the system provided, it returns to the initial state. A complete recovering requires about 15 h.

In future, we plan to perform computer stimulation of recombination process in diploid cell, by modelling interactions between alleles of genes responsible for cholesterol biosynthesis.

Acknowledgments

The authors are grateful to Galina Chirikova for translation of the manuscript into English and to N.A. Kolchanov for fruitful discussions. The work was supported by National Russian Program "Human Genome" (No 106), Integrational Science Project of SB RAS "Modelling of basic genetical processes and systems".

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Vacuum Energy Density, or How Can Nothing Weigh Something?
Recently two different groups have measured the apparent brightness of supernovae with redshifts near $z = 1$. Based on this data the old idea of a cosmological constant is making a comeback.

Einstein Static Cosmology
Einstein's original cosmological model was a static, homogeneous model with spherical geometry. The gravitational effect of matter caused an acceleration in this model which Einstein did not want, since at the time the Universe was not known to be expanding. Thus Einstein introduced a cosmological constant into his equations for General Relativity. This term acts to counteract the gravitational pull of matter, and so it has been described as an anti-gravity effect.

Why does the cosmological constant behave this way?

This term acts like a vacuum energy density, an idea which has become quite fashionable in high energy particle physics models since a vacuum energy density of a specific kind is used in the Higgs mechanism for spontaneous symmetry breaking. Indeed, the inflationary scenario for the first picosecond after the Big Bang proposes that a fairly large vacuum energy density existed during the inflationary epoch. The vacuum energy density must be associated with a negative pressure because:

The vacuum energy density must be constant because there is nothing for it to depend on.

If a piston capping a cylinder of vacuum is pulled out, producing more vacuum, the vacuum within the cylinder then has more energy which must have been supplied by a force pulling on the piston.

If the vacuum is trying to pull the piston back into the cylinder, it must have a negative pressure, since a positive pressure would tend to push the piston out.

The magnitude of the negative pressure needed for energy conservation is easily found to be $P = -u = -\rho \cdot c^2$ where P is the pressure, u is the vacuum energy density, and ρ is the equivalent mass density using $E = m \cdot c^2$.

But in General Relativity, pressure has weight, which means that the

gravitational acceleration at the edge of a uniform density sphere is not given by

$$g = GM/R^2 = (4\pi/3)G\rho R$$

but is rather given by

$$g = (4\pi/3)G(\rho + 3P/c^2)R$$

Now Einstein wanted a static model, which means that $g = 0$, but he also wanted to have some matter, so $\rho > 0$, and thus he needed $P < 0$.

In fact, by setting $\rho(\text{vacuum}) = 0.5\rho(\text{matter})$

he had a total density of $1.5\rho(\text{matter})$ and a total pressure of $-0.5\rho(\text{matter})c^2$ since the pressure from ordinary matter is essentially zero (compared to ρc^2). Thus $\rho + 3P/c^2 = 0$ and the gravitational acceleration was zero, $g = (4\pi/3)G(\rho(\text{matter}) - 2\rho(\text{vacuum}))R = 0$

allowing a static Universe.

Einstein's Greatest Blunder

However, there is a basic flaw in this Einstein static model: it is unstable - like a pencil balanced on its point. For imagine that the Universe grew slightly: say by 1 part per million in size. Then the vacuum energy density stays the same, but the matter energy density goes down by 3 parts per million. This gives a net negative gravitational acceleration, which makes the Universe grow even more!

If instead the Universe shrank slightly, one gets a net positive gravitational acceleration, which makes it shrink more! Any small deviation gets magnified, and the model is fundamentally flawed.

In addition to this flaw of instability, the static model's premise of a static Universe was shown by Hubble to be incorrect. This led Einstein to refer to the cosmological constant as his greatest blunder, and to drop it from his equations. But it still exists as a possibility -- a coefficient that should be determined from observations or fundamental theory.

The Quantum Expectation

The equations of quantum field theory describing interacting particles and anti-particles of mass M are very hard to solve exactly. With a large amount of mathematical work it is possible to prove that the ground state of this system has an energy that is less than infinity. But there is no obvious reason why the energy of this ground state should be zero. One expects roughly one particle in every volume equal to the Compton wavelength of the particle cubed, which gives a vacuum density of

$$\rho(\text{vacuum}) = M^4 c^3 / h^3 = 10^{13} [M/\text{proton mass}]^4 \text{ gm/cc}$$

For the highest reasonable elementary particle mass, the Planck mass

of 20 micrograms, this density is more than 10^{91} gm/cc. So there must be a suppression mechanism at work now that reduces the vacuum energy density by at least 120 orders of magnitude.

A Bayesian Argument

We don't know what this mechanism is, but it seems reasonable that suppression by 122 orders of magnitude, which would make the effect of the vacuum energy density on the Universe negligible, is just as probable as suppression by 120 orders of magnitude. And 124, 126, 128 etc. orders of magnitude should all be just as probable as well, and all give a negligible effect on the Universe. On the other hand suppressions by 118, 116, 114, etc. orders of magnitude are ruled out by the data. Unless there are data to rule out suppression factors of 122, 124, etc. orders of magnitude then the most probable value of the vacuum energy density is zero.

The Dicke Coincidence Argument

If the supernova data and the CMB data are correct, then the vacuum density is about 75% of the total density now. But at redshift $z=2$, which occurred 11 Gyr ago for this model if $H_0 = 65$, the vacuum energy density was only 10% of the total density. And 11 Gyr in the future the vacuum density will be 96% of the total density. Why are we alive coincidentally at the time when the vacuum density is in the middle of

its fairly rapid transition from a negligible fraction to the dominant fraction of the total density? If, on the other hand, the vacuum energy density is zero, then it is always 0% of the total density and the current epoch is not special.

What about Inflation?

During the inflationary epoch, the vacuum energy density was large: around 10^{71} gm/cc. So in the inflationary scenario the vacuum energy density was once large, and then was suppressed by a large factor. So non-zero vacuum energy densities are certainly possible.

Observational Limits

Solar System

One way to look for a vacuum energy density is to study the orbits of particles moving in the gravitational field of known masses. Since we are looking for a constant density, its effect will be greater in a large volume system. The Solar System is the largest system where we really know what the masses are, and we can check for the presence of a vacuum energy density by a careful test of Kepler's Third Law: that the period squared is proportional to the distance from the Sun cubed.

The centripetal acceleration of a particle moving around a circle of radius R with period P is

$$a = R \cdot (2\pi/P)^2$$

which has to be equal to the gravitational acceleration worked out above:

$$a = R \cdot (2\pi/P)^2 = g = GM(\text{Sun})/R^2 - (8\pi/3) \cdot G \cdot \rho(\text{vacuum}) \cdot R$$

If $\rho(\text{vacuum}) = 0$ then we get $(4\pi^2/GM) \cdot R^3 = P^2$

which is Kepler's Third Law. But if the vacuum density is not zero, then one gets a fractional change in period of $dP/P = (4\pi/3) \cdot R^3 \cdot \rho(\text{vacuum}) / M(\text{sun}) = \rho(\text{vacuum}) / \rho(\text{bar})$

where the average density inside radius R is $\rho(\text{bar}) = M / ((4\pi/3) \cdot R^3)$. This can only be checked for planets where we have an independent measurement of the distance from the Sun. The Voyager spacecraft allowed very precise distances to Uranus and Neptune to be determined, and Anderson et al. (1995, ApJ, 448, 885) found that $dP/P = (1+/-1)$ parts per million at Neptune's distance from the Sun. This gives us a Solar System limit of $\rho(\text{vacuum}) = (5+/-5) \cdot 10^{-18} < 2 \cdot 10^{-17} \text{ gm/cc}$

The cosmological constant will also cause a precession of the perihelion of a planet. Cardona and Tejeiro (1998, ApJ, 493, 52) claimed that this effect could set limits on the vacuum density only ten or so times higher than the critical density, but their

calculation appears to be off by a factor of 3 trillion. The correct advance of the perihelion is $3 \cdot \rho(\text{vacuum}) / \rho(\text{bar})$ cycles per orbit. Because the ranging data to the Viking landers on Mars is so precise, a very good limit on the vacuum density is obtained:

$$\rho(\text{vacuum}) < 2 \cdot 10^{-19} \text{ gm/cc}$$

Milky Way Galaxy

In larger systems we cannot make part per million verifications of the standard model. In the case of the Sun's orbit around the Milky Way, we only say that the vacuum energy density is less than half of the average matter density in a sphere centered at the Galactic Center that extends out to the Sun's distance from the center. If the vacuum energy density were more than this, there would be no centripetal acceleration of the Sun toward the Galactic Center. But we compute the average matter density assuming that the vacuum energy density is zero, so to be conservative I will drop the "half" and just say

$$\rho(\text{vacuum}) < (3 / (4 \cdot \pi \cdot G)) (v/R)^2 = 3 \cdot 10^{-24} \text{ gm/cc}$$

for a circular velocity $v = 220 \text{ km/sec}$ and a distance $R = 8.5 \text{ kpc}$.

Large Scale Geometry of the Universe

The best limit on the vacuum energy density comes from the largest

possible system: the Universe as a whole. The vacuum energy density leads to an accelerating expansion of the Universe. If the vacuum energy density is greater than the critical density, then the Universe will not have gone through a very hot dense phase when the scale factor was zero (the Big Bang). We know the Universe went through a hot dense phase because of the light element abundances and the properties of the cosmic microwave background. These require that the Universe was at least a billion times smaller in the past than it is now, and this limits the vacuum energy density to

$$\rho(\text{vacuum}) < \rho(\text{critical}) = 8 \cdot 10^{-30} \text{ gm/cc}$$

The recent supernova results suggest that the vacuum energy density is close to this limit: $\rho(\text{vacuum}) = 0.75 \cdot \rho(\text{critical}) = 6 \cdot 10^{-30} \text{ gm/cc}$. The ratio of $\rho(\text{vacuum})$ to $\rho(\text{critical})$ is called λ . This expresses the vacuum energy density on the same scale used by the density parameter Ω . Thus the supernova data suggest that $\lambda = 0.75$. If we use Ω_M to denote the ratio of ordinary matter density to critical density, then the Universe is open if $\Omega_M + \lambda < 1$, closed if it is greater than one, and flat if it is exactly one. If λ is greater than zero, then the Universe will expand forever unless the matter density Ω_M is much larger than

current observations suggest. For λ greater than zero, even a closed Universe can expand forever.

The figure above shows the regions in the (Ω_M , λ) plane that are suggested by the current data. The green region in the upper left is ruled out because there would not be a Big Bang in this region, leaving the CMB spectrum unexplained. The red and green ellipses with yellow overlap region show the LBL team's allowed parameters (red) and the Hi-Z SN Team's allowed parameters (green). The blue wedge shows the parameter space region that gives the observed Doppler peak position in the angular power spectrum of the CMB. The purple region is consistent with the CMB Doppler peak position and the supernova data. The big pink ellipse shows the possible systematic errors in the supernova data.

The figure above shows the scale factor as a function of time for several different models. The colors of the curves are keyed to the colors of the circular dots in the (Ω_M , λ) plane Figure. The purple curve is for the favored $\Omega_M = 0.25$, $\lambda = 0.75$ model. The blue curve is the Steady State model, which has $\lambda = 1$ but no Big Bang.

Because the time to reach a given redshift is larger in the $\Omega_M = 0.25$, $\lambda = 0.75$ model than in the $\Omega_M = 1$ model, the angular size distance and luminosity distance are larger in the λ model, as shown in the space-time diagram below:

The $\Omega_M = 1$ model is on the left, the $\Omega_M = 0.25$, $\lambda = 0.75$ model is on the right. The green line across each space-time diagram shows the time when the redshift was $z = 1$, which corresponds to approximately to the most distant of the supernovae observed to date. Using a ruler you can see that the angular size distance to $z = 1$ is 1.36 times larger in the right hand diagram, which makes the observed supernovae 1.84 times fainter (0.66 magnitudes fainter).

Conclusion

In the past, we have had only upper limits on the vacuum density and philosophical arguments based on the Dicke coincidence problem and Bayesian statistics that suggested that the most likely value of the vacuum density was zero. Now we have the supernova data that suggests that the vacuum energy density is greater than zero. This result is very important if true. We need to confirm it using other techniques,

such as the MAP satellite which will observe the anisotropy of the cosmic microwave background with angular resolution and sensitivity that are sufficient to measure the vacuum energy density.

Ned Wright's Home Page

FAQ | Tutorial : Part 1 | Part 2 | Part 3 | Part 4
| Age | Distances |
Bibliography | Relativity

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Cosmic Radio Signals can be polarized at 91mhz (fm); 160mhz (vhf); 610 mhz (on channel 78uhf-tv) by keying a cb microphone over a radio receiver set on these radio channels with your home equipment. These are known cosmic radio sources from outerspace from Annual Review of Astrophysics and Astronomy 1966 editor Leo Goldberg.
Facts : A lot of the static snow that you recieve is your non cable uhf tv; is cosmic radio signals.....many elements naturally emitt radio pulses whern excited;
You can polarize these signals with CB radio Microphone

buy keying the transmitting CB microphone over the speaker of a receiving radio set at 91 mhz..(91fm)..160 mhz..(160 vhf radio)..and transmit the spacey sound you hear to a receiving TV set at channel 78 UHF tv.....then you will see a ATN type of symbol..and see the oscillations and fluctutations of the cosmic radio signal that has been just polarized.....personally I think 160 vhf radio.....is artificially generated.....since it oscillates odd.....if intelligent life has learned to generate radio signals within our galaxy....the odds are in our favor.we are receiving them.as they receive our signals from 50+ years ago.....that energy is bouncing off our heads now. I have recieved a strange CBS eye symbol on my TV after I did this, It wasn't CBS's thought..it was gold on the edge, with a green center eye and purple round about the eye..but for this happened a circular rainbow image formed.then out of the cloud the CBS eye appeared.the eye looked like a lizards eye.....real spooky.I

called CBS in NY, and they don't know why they pick that symbol..(~)

after some research.there was a " CBS" electron gun.made for TV

picture tubes in

the 1950's..so maybe back in the early days of
television..tv

engineers must have recieved this same signal.

God Bless You

Br Dan Izzo
512 Onondaga Ace
Syracuse, NY 13207

1-315-472-5088

Post a Comment

<< Home

About Me

Name:Rev Dan Izzo

DECLARATION OF REVOCABLE TRUST

This Declaration of Revocable Trust is made this 8th day of April 2007 , by and between The Cryonic Life Insurance Company of 512 Onondaga Ave , Syracuse , New York 13207 USA and Marie Byrd land Antarctica hereinafter called the Trustor, and Reverend Daniel Izzo of 512 Onondaga Ave, Syracuse, New York 13207 USA and Marie Byrd Land Antarctica hereinafter called the Trustee.

I

The Trustor hereby assigns, conveys and gives to the Trustee, in trust, the following property:

(Description of Property)

**ALL THAT TRACT OF UNCLAIMED QUIT CLAIMED LAND
SITUATE in:**

Marie Byrd Land is the portion of Antarctica </wiki/Antarctica> lying east of the Ross Ice Shelf </wiki/Ross_Ice_Shelf> and the Ross Sea </wiki/Ross_Sea> and south of the Pacific Ocean </wiki/Pacific_Ocean>, extending eastward approximately to a line between the head of the Ross Ice Shelf </wiki/Ross_Ice_Shelf> and Eights Coast </wiki/Eights_Coast>. It stretches between 158°W and 103°24'W. The inclusion of the area between the Rockefeller Plateau and Eights Coast </wiki/Eights_Coast> is based upon the leading role of Rear Admiral Richard E. Byrd </wiki/Richard_E._Byrd> in the exploration of this area. The name was originally applied by Admiral Byrd in 1929, in honor of his wife, to the northwestern part of the area, the part that was explored in that year. Due to its remoteness, even by Antarctic standards, most of Marie Byrd Land (the portion east of 150°W) has not been claimed by any sovereign </wiki/Sovereignty> nation </wiki/Nation>, making it by far the largest single unclaimed territory </w/index.php?title=Unclaimed_territory&action=edit> on Earth </wiki/Earth>, with an area of 1 610 000 km² (including Eights Coast </wiki/Eights_Coast>, immediately east of Marie Byrd Land). The portion west of 150°W is part of Ross Dependency </wiki/Ross_Dependency>.

A CERTAIN NUMBER OF

Association Gold Notes issued under US Code Title 12 sec 151-153

**and made a Legal tender under US Code Title 31 sec 5103 ,
Gond Bonds issued before 1933**

Lawful Money of the United States of America

**(1) The Pennsylvania Railroad Company ,
\$1000 General Mortgage 4 1/4% GOLD BOND series D due April
1st 1981, bearer bond number 11100**

(1) New York Central and Hudson River Railroad Company \$1000 Mortgage 3 1/2% Coupon GOLD BOND due July 1st 1997, bearer bond number 9486

(1) The New York Central Railroad Company \$1000 4% Consolidation Mortgage GOLD BOND due February 1st 1998 , bearer bond number 6440

(1) The New York Central and Hudson River Railroad Company \$1000 Refunding and Improvement Mortgage Bond 4 1/12% due October 1st 2013 , bearer bond number 13887

(1) The New York Central Railroad Company \$1000 Refunding and Improvement Mortgage Bond 5% due October 1st 2013 , bearer bond number M22287

Plus 100 other (1) The New York Central Railroad Company \$1000 Refunding and Improvement Mortgage Bond 5% due October 1st 2013

II

The Trustee shall receive and hold said property, together with any additions thereto, in trust for the use and benefit of:

**THE UNITED STATES TRUST TERRITORY OF MARIE BYRD
LAND ANTARCTICA AND THE CRYONIC LIFE INSURANCE
COMPANY DEPARTMENT OF GENERAL RESURRECTION AND
THE 3RD BANK OF UNITED STATES AT ANTARCTICA**

III

I reserve the absolute right, during my life, by an instrument in writing signed by me, to revoke, annul and cancel this agreement and the trust created hereby; and to alter, modify or amend this trust in any and all aspects; and to withdraw at any time, and from time to time, any and all of the aforesaid

property; and to add thereto at any time, and from time to time, such additional property as I may determine.

IV

This agreement and the trust created hereby shall be administered, managed, governed and regulated in all respects according to applicable statutes of the State of New York

V

The Trustee, in addition to all other powers granted by this agreement and by law, shall have the following additional powers with respect to the trust, to be exercised from time to time at the Trustee's discretion:

Management of the Trust

To invest and reinvest, lease, rent, mortgage, insure, repair, improve or sell any of the real and personal property of the trust as he may deem advisable.

Business Interests

To sell or otherwise liquidate, or to continue to operate at his discretion, any corporation, partnership or other business interest which may be received by the trust.

Mortgages, Pledges and Deeds of Trust

To enforce any and all mortgages, pledges and deeds of trust held by the trust and to purchase at any sale thereunder any such real estate or personal property subject to any mortgage, pledge or deed of trust.

Litigation

To initiate or defend, at his discretion, any litigation affecting the trust.

Attorneys, Advisors and Agents

To employ and to pay from the trust reasonable compensation to such attorneys, accountants, brokers, and investment, tax and other advisors as he shall deem advisable.

Adjustment of Claims

To submit to arbitration, to compromise or to release or otherwise adjust, with or without compensation, any and all claims affecting the trust estate.

VI

No bond for the faithful performance of duties shall be required of any Trustee appointed under this agreement.

VII

The Trustee shall receive reasonable compensation for the services performed by him, but such compensation shall not exceed the amount customarily received by corporate fiduciaries in the area for like services.

VIII

No Trustee of the trust created by this agreement shall at any time be held liable for any action or default of himself, or of his agent, or of any other person in connection with the administration and management of this trust unless caused by his own gross negligence or by commission of a willful act of breach of trust.

IX

The Trustee, by joining in the execution of this agreement, hereby signifies his acceptance of this trust.

X

The Trustee shall have sole authority to determine what shall be defined as income and what shall be defined as principal of the trust established by this agreement, and to determine which costs, taxes and other expenses shall be paid out of income and which shall be paid out of principal.

XI

In the event that any portion of this agreement or the trust created hereby shall be held illegal, invalid or otherwise inoperative, it is my intention that all of the other provisions hereof shall continue to be fully effective and operative insofar as is possible and reasonable.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

**THE CRYONIC LIFE INSURANCE COMPANY , Dated April 8th
2007
512 ONONDAGA AVE
SYRACUSE, NEW YORK 13207
UNITED STATES and Marie Byrd Land U.S. Trust Territory**

~

Trustor

**REVEREND DANIEL IZZO , Dated April 8th 2007
512 ONONDAGA AVE
SYRACUSE, NEW YORK 13207 UNITED STATES and Marie Byrd
Land Antarctica**

Trustee

~

I, the undersigned spouse of the above-described Trustor, do hereby waive and relinquish any and all claim to whatever community-property rights I may have in the hereinabove-described property and do give and grant my assent to the trust and to the incorporation therein of said property.

_____(9)_____
_____(12)_____
Legal Spouse of Trustor

_____(9)_____

STATE OF _____(13)_____)

) ss:

COUNTY OF _____(14)_____)

On this _(15)_ day of _____(16)_____, 19_(17)_, before me personally came and appeared _____(18)_____ and _____(19)_____, known, and known to me, to be the individuals described in and who executed the foregoing instrument, and who duly acknowledged to me that they executed same for the purpose therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____(20)_____

My Commission Expires: _____(21)_____

NOTICE

The information in this document is designed to provide an outline that you can follow when formulating business or personal plans. Due to the variances of many local, city, county

and state laws, we recommend that you seek professional legal counseling before entering into any contract or agreement. God visited me for a second in June 2001 a few weeks after I filed a US patent on a Resurrection Burial Tomb for cryonic preservation and the general resurrection of the dead body. I asked God how long that it had been here ?

The image said strongly :

" THE WHOLE TIME" and left

I was scared to go back into my house for about 2 days really. I was told about your website and after viewing it brought tears to my eyes.

Why it happened

In June 2001 , while I was praying I told God that I couldn't go to Heaven because I would eventually fight with God . I started to cry , I called an 80y/o friend Ezra that I often talked to about science and physics and I opened my Bible to Revelations chapter 4 verses 1-6 , I bought several 100lbs of emerald rocks on ebay, I remembered God's throne was like an emerald , and we wanted to know what God's throne was like in Heaven

I opened my Bible and read the verses to him , Then suddenly the very image of God's throne appeared to me in in my livingroom while I was on the telephone with my 80y/o friend, I was scared and hung up the telephone

I had a black round disco lamp with the 23 rainbow colors described wirling about

A painting of praying rabbis on its left side and a old gold floor lamp from the 30s with candles I placed in it on the right side and a crystal disco ball hanging from my ceiling fan, The black disco ball with colored lights was on and was spinning, Then it reversed itself the reversed itself again all by itself

as I was talking with my friend on the phone after reading Rev chapter 4 verses 1-6 the image of God's throne

I told my friend I would call him back and while shaking I asked the image:

" how long have you been here ? " The image said :

" THE WHOLE TIME" and left

Where we made for Heaven or resurrection and life on the Earth ? or both ?

When I die I hope to be sent into outerspace and be like a comet, float and spin for millions of years:

I wanted to write to you and tell you

God visited me for a second in June 2001

I asked God how long that it had been here ?

The image said strongly :

" THE WHOLE TIME" and left

I was scared to go back into my house for about 2 days

really

I was told about your website and after viewing it brought tears to my eyes.

Why it happened

In June 2001 , while I was praying I told God that I couldn't go to Heaven beause I would eventually fight with God .

I started to cry , I called an 80y/o friend that I often talked to about science and physics and I opened my Bible to Revelations chapter 4 verses 1-6

Because I bought several 100lbs of emerald rocks on ebay, I remembered God's throne was like an emerald , and we wanted to know what God's throne was like in Heaven

so I opened my Bible and read the verses to him

Then suddenly the very image of God's throne appeared to me in in my livingroom while I was on the telephone with my 80y/o friend, I was scared and hung up the telephone

I had a black round disco lamp with the 23 rainbow colors described wirling about

A painting of praying rabbis on its left side and a old gold floor lamp from the 30s with candles I placed in it on the right side and a chrystal disco ball hanging from my ceiling fan

The black disco ball with colored lights was on and was spinning,

The it revesed itself

the reversed itself again

all by itself

as I was talking with my friend on the phone after reading Rev chapter 4 verses 1-6 the image of God's throne

I told my friend I would call him back

and while shaking I asked the image

I asked God how long that it had been here ?

The image said :

" THE WHOLE TIME" and left

In the United states Patent office is a patent I filed from july 1999- june 2001 titled a Resurrection Bural Tomb , just before this event occurred

in the Patent Application is a copy of a picture of several engimas

some are very strange, like the holy of holies looks like a mamp of my county, onondaga county ny

but in sept 1999 i was being attacked my my local government for being christian after inventing my first device

a microwave hot water boiler heating system

soon after i was being sued for bogu housing code violations

they wanted \$250,000

the satanic governemt group then had sold 300 buildings for tax auction for less than 3 million dollars during this time

so i had an offer to buy my house and took a picture of it

the polaroid was old film

but amazingly in golden yellow haze covering my house in the picture

as a near identical image of Jesus's face, like the image on the shroud of turin only it was turned a little and what looks like Jesus's finger covering his mouth (telling me to be quiet)

the image rough copy is filed with the US Patent office

NOTICE:

THIS IS A PATCHWORK OF REFERENCE DATA

HELP YOURSELF PEOPLE , I CAN'T EVEN PRESERVE THE NEWLY FOUND BONES OF JESUS AND HIS HOLY FAMILY IN 1980

I FEEL AWFUL

AND IT GETS WORSE, NOT ONLY DID AN GHOST IMAGE OF JESUS VISIT ME IN SEPT. 1999 WHAT I THOUGHT WAS THE IMAGE OF GOD'S THRONE VISITED ME IN JUNE 2001

I WAS GIVEN NOTICE TO KEEP QUIET AND FAILED AS YOU SCAN THE BELOW DISORGANIZED NOTES YOU'LL FIND A LOT OF POWERFUL NEW DATA FROM A STATIC MOTIONLESS FOOLISH VIRGIN GOING INTO EXTINCTION / OUTERDARKNESS

I'M SORRY PEOPLE I HAVEN'T BEEN ABLE TO DO MORE

SELFISH ME SAVED ENOUGH MONEY TO BUY A TICKET TO GO INTO OUTERSPACE (OUTERDARKNESS) BUT CAN'T SAVE THE NEWLY FOUND BONES OF JESUS

(THERE IS AN ENIGMA OF JESUS WITHIN THE SUN READING A TORAH SCROLL WITH A WOMAN PUSHING A BABY CARRIAGE WALKING BEFORE A GOD HEAD FIGURE) SEE THE D AND K SCIENCE ENCYCLOPEDIA FILTERED SUN PHOTO

I seemed to have failed Humanity in providing Civilizations needed " REAL " Security From Death , I can't even preserve family members or even the newly found bones of Jesus himself , folks it looks like your on your own , if you want a heaven on earth with an empowered child culture with rootic parents to help , you'll have to build one yourselves.

I am sorry I will keep trying to help but as you read this is now the year 2007 and all I have for you is piles of valueless paper money notes and disorganized words

Both Jesus the Christ Spirit , God and the Angels my Family and Civilization has invested and given so much to me and all I can seem to return is valueless paper and disorganized words

it is no wonder my image is on the 10000 Dollar Hell Bank note

May Cosmic Magnetic Force and God Bless You

Sincerely

~

**Cryonic Life Insurance Company
Dept of General Resurrection
Br Dan Izzo 4-8-2007
U.S. Quit Claim Trustee of
Marie Byrd Land Territory
Antarctica**