

Welcome to Rehoboth New Life Center Tuesday April 7th 2015

The Seal of God & The Mark of the Beast Part I

Revelation 13:16 And he causeth all, both small and great, rich and poor, free and bond, to receive a mark in their right hand, or in their foreheads: 17 And that no man might buy or sell, save he that had the mark, or the name of the beast, or the number of his

The Conditions

Revelation 13:17 And that no man might buy or sell, save he that had the mark, or the name of the beast, or the number of his name.

- THE MARK... OR
- THE NAME OF THE BEAST....OR
- THE NUMBER OF HIS NAME

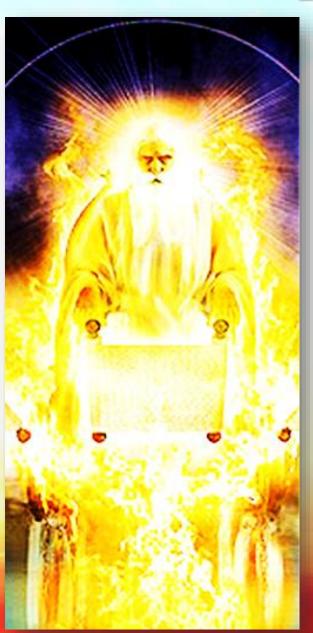
The Copies

The Revealing



2 Thessalonians 2:3 Let no man deceive you by any means: for that day shall not come, except there come a falling away first, and that man of sin be revealed, the son of perdition;

The Original



- 1 John 5:7 For there are three that bear record in heaven, the Father, the Word, and the Holy Ghost: and these three are one.
- Gods Mark (His Seal)
- Gods Name
- The Number of HIS name

The Seal of God

"And it shall be for a sign for you upon your hand, and for a memorial between your eyes, that the law of the LORD may be in your mouth; for with a strong hand did the LORD bring you out of Egypt"



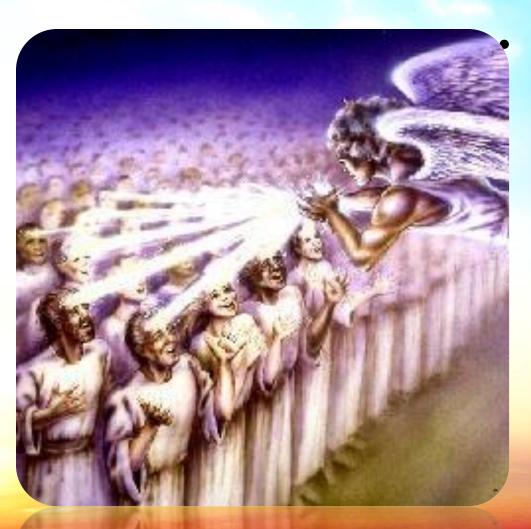
Revelation 5:1 ¶And I saw in the right hand of him that sat on the throne a book written within and on the backside, sealed with seven seals.

The Mark on Cain?



- Genesis 4:13 ¶And Cain said unto the LORD, My punishment is greater than I can bear.
- 15 And the LORD said unto him, Therefore whosoever slayeth Cain, vengeance shall be taken on him sevenfold.
 And the LORD set a mark upon Cain, lest any finding him should kill him.

The Seal(Mark) that saves!



Revelation 7:2 And I saw another angel ascending from the east, having the seal of the living God: and he cried with a loud voice to the four angels, to whom it was given to hurt the earth and the sea, 3: Saying, Hurt not the earth, neither the sea, nor the trees, till we have sealed the servants of our God in their foreheads.

Judgment begins at the house of the Lord!



• Ezekiel 9:1 ¶He cried also in mine ears with a loud voice, saying, Cause them that have charge over the city to draw near, even every man with his destroying weapon in his hand.

2 And, behold, six men came from the way of the higher gate, which lieth toward the north, and every man a slaughter weapon in his hand; and one man among them was clothed with linen, with a writer's inkhorn by his side: and they went in, and stood beside the brasen altar.

The Seal of God!



Ezekiel 9:1 ¶He cried also in mine ears with a loud voice, saying, Cause them that have charge over the city to draw near, even every man with his destroying weapon in his hand.

2 And, behold, six men came from the way of the higher gate, which lieth toward the north, and every man a slaughter weapon in his hand; and one man among them was clothed with linen, with a writer's inkhorn by his side: and they went in, and stood beside the brasen altar.

4 And the LORD said unto him, Go through the midst of the city, through the midst of Jerusalem, and set a mark upon the foreheads of the men that sigh and that cry for all the abominations that be done in the midst thereof.

The Symbol of Salvation

Tav

< Tahpukah Tuwb (Aramaic) >

The KJV Old Testament Hebrew Lexicon

Strong's Number: 08420 Browse Lexicon KJV Verse

Original Word Origin from (08427)

Transliterated Word

TDNT Entry

Total

Tav TWOT - 2496a

Phonetic Spelling Parts of Speech

tawv (1) Noun Masculine

Definition

1. desire, mark

 a. mark (as a sign of exemption from judgment)

King James Word Usage - Total: 3

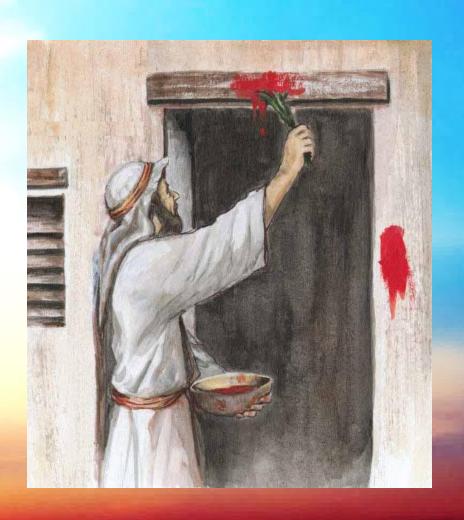
mark 2. desire 1

- Ezekiel 9:4 He said to him, "Walk through the streets of Jerusalem and put a mark on the foreheads of all who weep and sigh because of the detestable sins being committed in their city."
- 5 ¶Then I heard the LORD say to the other men,
 "Follow him through the city and kill everyone whose forehead is not marked.
 Show no mercy; have no pity!

The Mark of Tav

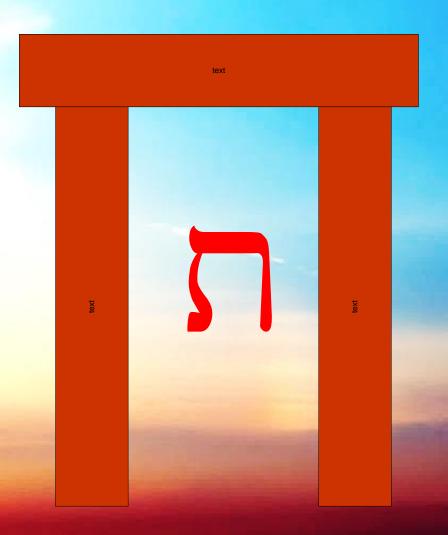
The Mark on the door

• Exodus 12:22 And ye shall take a bunch of hyssop, and dip it in the blood that is in the bason, and strike the lintel and the two side posts with the blood that is in the bason; and none of you shall go out at the door of his house until the morning.



The Mark on the door post and Lintel!

• Exodus 12:23 For the LORD will pass through to smite the Egyptians; and when he seeth the blood upon the lintel, and on the two side posts, the LORD will pass over the door, and will not suffer the destroyer to come in unto your houses to smite you.



"The Mark becomes personal"

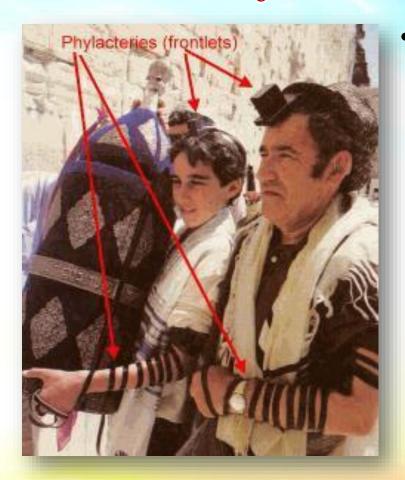


- Exodus 28:36 And thou shalt make a plate of pure gold, and grave upon it, like the engravings of a signet,
- HOLINESS TO THE LORD.
- 37 And thou shalt put it on a blue lace, that it may be upon the mitre; upon the forefront of the mitre it shall be.
- 38 And it shall be upon Aaron's forehead, that Aaron may bear the iniquity of the holy things, which the children of Israel shall hallow in all their holy gifts; and it shall be always upon his forehead, that they may be accepted before the LORD.

The sign upon the hand, & upon the forehead

- "And it shall be for a sign for you upon your hand, and for a memorial between your eyes, that the law of the LORD may be in your mouth; for with a strong hand did the LORD bring you out of Egypt" Exodus 13:9
- "And it shall be for a sign upon your hand, and as frontlets between your eyes; for with a mighty hand did the LORD bring us forth out of Egypt" Exodus 13:16
- — and twice in the shema passage:
- "And you shall bind them as a sign upon your arm, and they shall be as frontlets between your eyes" Deuteronomy 6:8
- "Therefore you shall lay these words of mine in your heart and in your soul; and you shall bind them for a sign upon your arm, and they shall be as frontlets between your eyes" Deuteronomy 11:18

Tefillin & Phylacteries



Tefillin, (Hebrew: תפילין), also called phylacteries, are two black leather boxes containing scrolls of parchment inscribed with biblical verses. The arm-tefillin, or shell yad, is worn on the upper arm, while the head-tefillin, or shel rosh, is placed above the forehead. They serve as a "sign" and "remembrance" that God brought the children of Israel out of Egypt. According to Jewish Law, they should be worn during weekday morning prayer services.

Matthew 23:2 Saying, The scribes and the Pharisees sit in Moses' seat: 5 But all their works they do for to be seen of men: they make broad their phylacteries, and enlarge the borders of their garments,

The New Testament Mark(Seal) Revealed

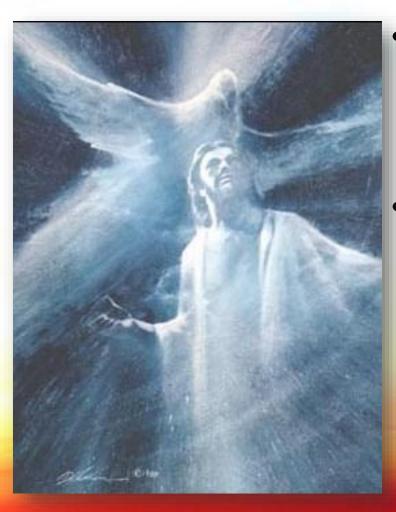
The Word Of God!

The "word" was on their foreheads

- John 1:1 ¶In the beginning was the Word, and the Word was with God, and the Word was God.
- John 1:14 And the Word was made flesh, and dwelt among us, (and we beheld his glory, the glory as of the only begotten of the Father,) full of grace and truth.

The Word made flesh is Jesus!

The new testament seal!



- Ephesians 4:30 And grieve not the holy Spirit of God, whereby ye are sealed unto the day of redemption.
- Ephesians 1:13 In whom ye also trusted, after that ye heard the word of truth, the gospel of your salvation: in whom also after that ye believed, ye were sealed with that holy Spirit of promise,

So the Spirit is the marking tool!

• 2 Corinthians1:22

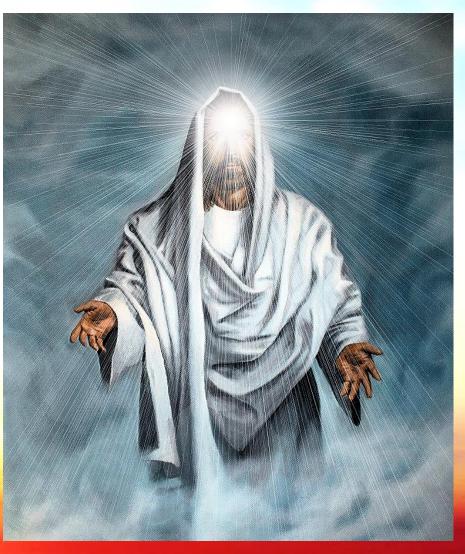
 Who hath also sealed us, and given the earnest of the Spirit in our hearts.



God's seal, is his sonship name!

- Revelation 7:3 Saying, Hurt not the earth, neither the sea, nor the trees, till we have sealed the servants of our God in their foreheads.
- Revelation 3:12 Him that overcometh will I make a pillar in the temple of my God, and he shall go no more out: and I will write upon him the name of my God, and the name of the city of my God, which is new Jerusalem, which cometh down out of heaven from my God: and I will write upon him my new name.

The Seal of God is The manifested name!



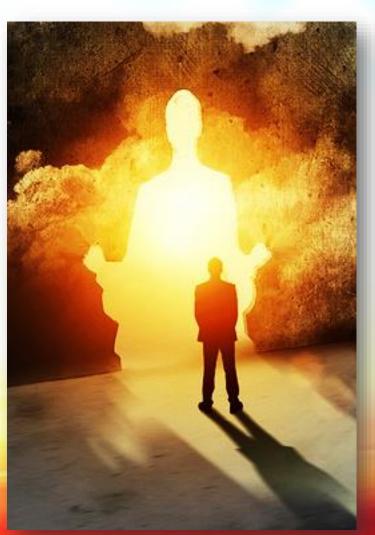
- And they shall see his face; and his name shall be in their foreheads.
- Revelation 22:4
- ¶I have manifested thy name unto the men which thou gavest me out of the world: thine they were, and thou gavest them me; and they have kept thy word.
- John 17:6

The Sonship Type Is the manifested name

- And Simon Peter
 answered and said, Thou
 art the Christ (Anointed
 one), the Son of the living
 God. Matthew 16:16
- For as many as are led by the Spirit of God, they are the sons of God.
- Romans 8:14



There is a relationship Between Image... and Spirit



Colossians 1:13 Who hath delivered us from the power of darkness, and hath translated us into the kingdom of his dear Son:

14 In whom we have redemption through his blood, even the forgiveness of sins:

15 Who is the image of the invisible God, the firstborn of every creature:

Image is related to spirit!



• Job 4:15Then a spirit passed before my face; the hair of my flesh stood up: 16 It stood still, but I could not discern the form thereof: an image was before mine eyes, there was silence, and I heard a voice, saying,

In his Image & his likeness! created first Spirit



Genesis 1:26 And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

Physical Life



- The physical image made alive by Gods first breath !(spirit)
- Ge 2:7 And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul.

words that I speak unto you, they are spirit, and they are life.

The Image of God



- Romans 8:28 And we know that all things work together for good to them that love God, to them who are the called according to his purpose.
 - Romans 8:29 For whom he did foreknow, he also did predestinate to be conformed to the image of his Son, that he might be the firstborn among many brethren.

The Image and...the missing Dimension



 ¶Nebuchadnezzar the king made an image of gold, whose height was threescore cubits, and the breadth thereof six cubits: he set it up in the plain of Dura, in the province of Babylon. Daniel 3:1

Only two dimensions given?

The Demons of the Abyss



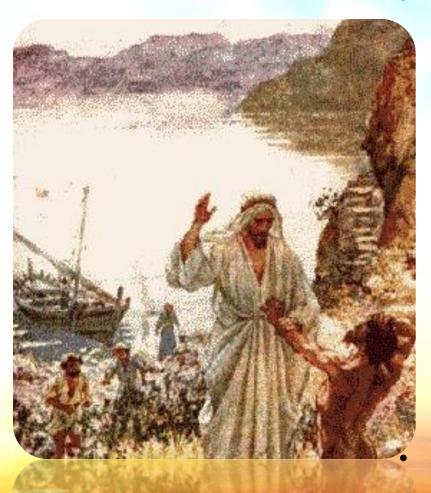
- Job 26:5 ¶Dead Things (RAFA, SPIRITS) things are formed from under the waters, and the inhabitants thereof.
- Isaiah 26:13 O LORD our God, other lords beside thee have had dominion over us: but by thee only will we make mention of thy name.
- 14 They are dead, they shall not live; they are deceased, they shall not rise; therefore hast thou visited and destroyed them, and made all their memory to perish.

Locked up in the Abyss



Jude 1:6 And the angels which kept not their first estate, but left their own habitation, he hath reserved in everlasting chains under darkness unto the judgment of the great day.

Many Spirits



Luke 8:26 They sailed to the region of the Gerasenes, which is across the lake from Galilee.

27 When Jesus stepped ashore, he was met by a demon-possessed man from the town. For a long time this man had not worn clothes or lived in a house, but had lived in the tombs.

28 When he saw Jesus, he cried out and fell at his feet, shouting at the top of his voice, "What do you want with me, Jesus, Son of the Most High God? I beg you, don't torture me!"

29 For Jesus had commanded the evil spirit to come out of the man. Many times it had seized him, and though he was chained hand and foot and kept under guard, he had broken his chains and had been driven by the demon into solitary places.

30 Jesus asked him, "What is your name?" "Legion," he replied, because many demons had gone into him.

31 And they begged him repeatedly not to order them to go into the Abyss.



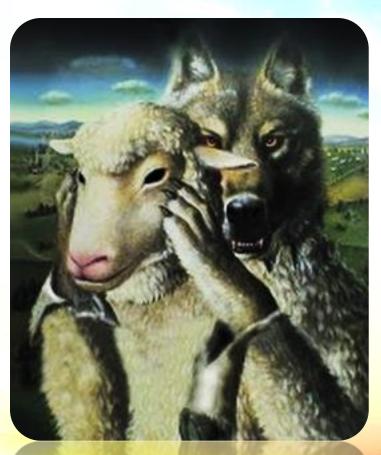
Revelation 9:1 The fifth angel sounded his trumpet, and I saw a star that had fallen from the sky to the earth. The star was given the key to the shaft of the Abyss. 2 When he opened the Abyss, smoke rose from it like the smoke from a gigantic furnace. The sun and sky were darkened by the smoke from the Abyss. 3 And out of the smoke locusts came down upon the earth and were given power like that of scorpions of the earth. 4 They were told not to harm the grass of the earth or any plant or tree, but only those people who did not have the seal of God on their foreheads. 5 They were not given power to kill them, but only to torture them for five months. And the agony they suffered was like that of the sting of a scorpion when it strikes a man. 6 During those days men will seek death, but will not find it; they will long to die, but death will elude them..11 They had as king over them the angel of the Abyss, whose name in Hebrew is Abaddon, and in Greek, Apollyon.

Going forth?



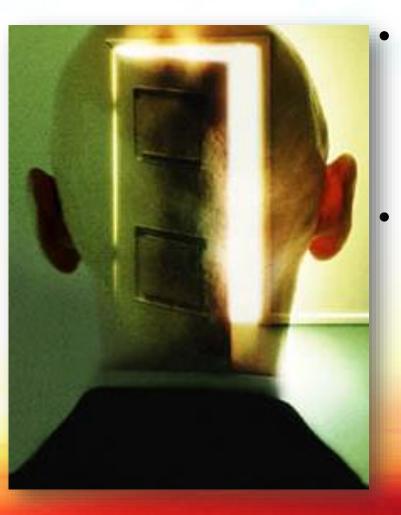
Revelation 16:14 For they are the spirits of devils, working miracles, which go forth unto the kings of the earth and of the whole world, to gather them to the battle of that great day of God Almighty.

Giving heed to demons



- Now the Spirit speaketh expressly, that in the latter times some shall depart from the faith, giving heed to seducing spirits, and doctrines of devils;
- 1 Timothy 4:1

The mark of the beast is Possession!



When the unclean spirit is gone out of a man, he walketh through dry places, seeking rest, and findeth none. Matthew 12:43

Then goeth he, and taketh with himself seven other spirits more wicked than himself, and they enter in and dwell there: and the last state of that man is worse than the first. Even so shall it be also unto this wicked generation.

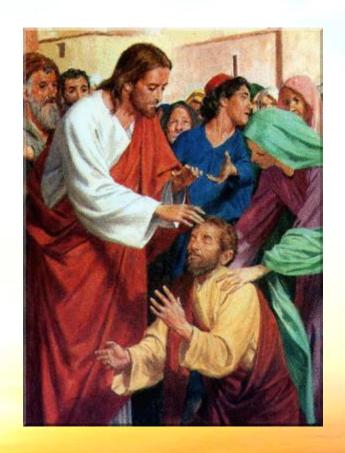
Matthew 12:45

Possession: what's stopping it?

- 2 Thessalonians 1 Concerning the coming of our Lord Jesus Christ and our being gathered to him, we ask you, brothers, 2 not to become easily unsettled or alarmed by some prophecy, report or letter supposed to have come from us, saying that the day of the Lord has already come.
- 3 Don't let anyone deceive you in any way, for that day will not come until the rebellion occurs and the man of lawlessness is revealed, the man doomed to destruction. 4 He will oppose and will exalt himself over everything that is called God or is worshiped, so that he sets himself up in God's temple, proclaiming himself to be God. 5 Don't you remember that when I was with you I used to tell you these things? 6 And now you know what is holding him back, so that he may be revealed at the proper time. 7 For the secret power of lawlessness is already at work; but the one who now holds it back will continue to do so till he is taken out of the way.

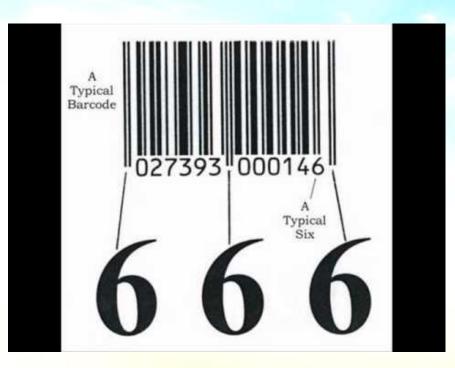


The Mark?

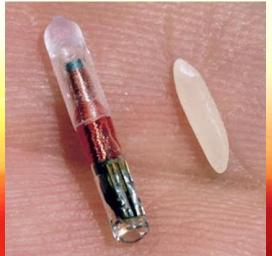


- We receive Gods seal by the spirit
 - John 20:22 And when he had said this, he breathed on them, and saith unto them, Receive ye the Holy Ghost:
 - Rev 13:16 And he causeth all, both small and great, rich and poor, free and bond, to receive a mark in their right hand, or in their foreheads:

Why its not a chip



• Rev 13:16 And he causeth all, both small and great, rich and poor, free and bond, to receive a mark in their right hand, or in their foreheads:



Gods amazing clue!

- Mark 5:7 And cried with a loud voice, and said, What have I to do with thee, Jesus, thou Son of the most high God? I adjure thee by God, that thou torment me not.
- 8 For he said unto him, Come out of the man, thou unclean spirit.
- 9 And he asked him, What is thy name? And he answered, saying, My name is Legion: for we are many!

What's the size of a legion?



FLAVIUS VEGETIUS RENATUS "MILITARY MATTERS"

BOOK TWO
The Organization of the Legion

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DIFFERENCE BETWEEN THE LEGIONS AND AUXILIARIES

The Macedonians, the Greeks and the Dardanians formed their troops into phalanxes of eight thousand men each. The Gauls, Celtiberians and many other barbarous nations divided their armies into bodies of six thousand each. The Romans have their legions usually six thousand strong, sometimes more.

ORGANIZATION of the ROMAN LEGIONS

Under Nero there were 28 legions. The number gradually increased over the years. Each Legion had a name, a number, and its own badge. In addition, there were the Praetorian cohorts, originally the emperor's personal bodyguard, but expanded into an elite corps. By the late 3rd Century, the whole emphasis of the army was moving away from old concepts. Cavalry became increasingly important.

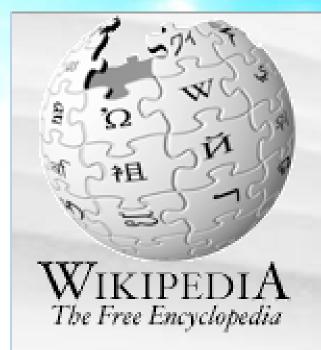
In the early Republic, the legion of the Roman army was a self-contained formation equivalent to a complete army in itself. The smallest unit was the contubernium, a tent party of **Ten men** sharing a packhorse. **Ten such groups formed a company, or centuria, commanded by a centurian.** This was 100 men, Six such companies, grouped in three pairs, formed a cohort. **Ten cohorts made up a legion**.

TYPE	NUMBER		
Contubernium	10		
Company	100		
Cohort	600		
Legion	6000		

A Roman Legion "The number of his name"

- 6000 men
- Divided into 10 cohorts of 600 men each
- Each Cohort divided into 6 "Centuries" of 100 men
- Each Century led by a Centurion

"My Name is Legion, 6 6 6 !" The mark of possession!



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Signiferi

From Wikipedia, the free encyclopedia

The **signiferi** of the Roman legions were the ranks entrusted with various tasks to do with standard-bearing. Early in the Roman Republic the single rank signifer performed all these tasks but later in the Empire the tasks became more specialist with different ranks created for specific tasks, including the aquilifer (eagle standard bearer for the whole legion), imaginifer (bearer of the portrait of the god-like Emperor) and the draconarius (bearer of a cavalry standard).



The Century, Cohort and Auxiliary units of a Roman Legion, carried several different styles of Vexilla (banners), Signums and other types of "Standards" to identify themselves. These various standards were considered as sacred objects representing the spirit and soul of the unit. They were decorated with garlands and sacred oils on special days and occasions. The honor of carrying these "Standards" was entrusted to veteran legionaries who generally were serving their extended enlistments after 20 years of service. Consul Marius established the Eagle or Aquila as the sole symbol of a Roman Legion as part of his "Reforms" of the Roman Military in 106 BC. For a Legion, the "Aquilifer" bore the Aquila-Eagle, while the "Imaginifer" carried the Imago of the Emperor.

The "Aquilifer"



 Each legion had a standard that symbolized it, an eagle, which was a pole with the figure of an eagle at the top, made of gold. In addition a legion carried standards holding an image of the emperor, special flags, and a legion symbol. These standards were objects of worship in the official religion of Rome. For this reason, when legionary standards were introduced into Jerusalem under Pontius Pilate a riot ensued and Pilate was forced to remove them. According to the Roman historian Suetonius, when Cestius Gallus and the Twelfth Legion was defeated the Judaeans captured their eagle, an act of utter humiliation for any legion.











• Mounted below the phalerae or within the phalerae group, could be a **crescent**, possibly relating to Syria or the god Mithras (a favorite deity of legionary soldiers); a Capricorn emblem (Leg XIIII below) or zodiac image indicating the "birth sign" of the Legion during the year or other effigy relating to the origin of the unit.

Imaginifer

From Wikipedia, the free encyclopedia



A model of what an imaginifer may have looked like

 Imaginifer was a type of signifer during the Roman Empire, who carried the imago - the image - of the emperor. The imaginifer was added to the ranks of the cohorts when the Imperial Cult was first established during the reign of Augustus. The imago was a metal three dimensional portrait made from beaten metal. It was carried only in the leading cohort.

The Dragon!



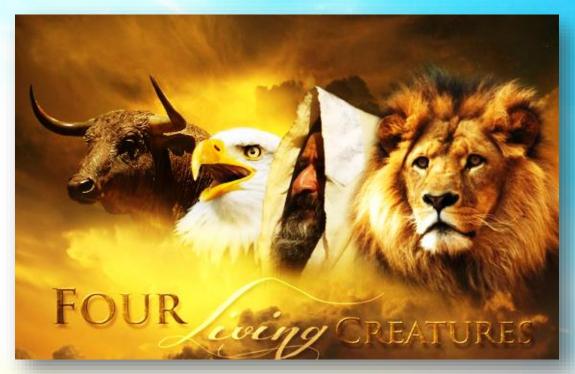
The draconarius was a type of signiferi who bore of a cavalry standard known as a draco in the Roman army. It consisted of a gaping bronze dragon head with a fabric body similar in shape to a short snake behind it. Wind flowed through the bronze dragon mouth and billowed out the cloth tail much like a modern wind-sock. It is thought that some form of whistle was mounted in the dragon's neck in order to make a terrifying noise when galloping.





• The Vexillarius of Cohors III Praetoria in Italy in formation with the legionaries of the unit. Note that the Vexillarius is wearing maile (hamata) body armor and a very impressive lion pelt over his helmet. A Lion (leo) pelt is thought to have been generally worn only by the Aqualifer, Signifer or Vexillarius of a legion/legio unit.

Stolen emblems?



- Revelation 4:6 And before the throne there was a sea of glass like unto crystal: and in the midst of the throne, and round about the throne, were four beasts full of eyes before and behind.
- 7 And the first beast was like a lion, and the second beast like a calf and the third beast had a face as a man, and the fourth beast was like a flying eagle.

The Three, against the Man!



The Eagle; The false prophet
 → demons and fallen angels;
 "The mark of the beast"



• The Lion: The antichrist→ "the lawless one" → the "assyrian" The Name of the beast

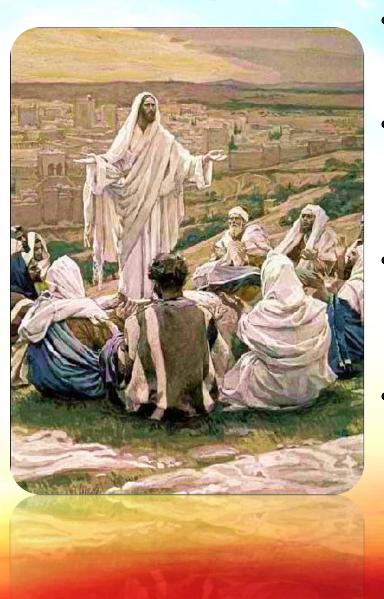


• The Ox or calf; The fallen cherubim → The Dragon → Satan! The Number of his Name

"Name of the Beast?"

- I am come in my Father's name, and ye receive me not: if another shall come in his own name, him ye will receive. John 5:43
- Isaiah 62:2 And the Gentiles shall see thy righteousness, and all kings thy glory: and thou shalt be called by a new name, which the mouth of the LORD shall name.
- Revelation 2:17 He that hath an ear, let him hear what the Spirit saith unto the churches; To him that overcometh will I give to eat of the hidden manna, and will give him a white stone, and in the stone a new name written, which no man knoweth saving he that receiveth it.

Rejoice That YOUR Name!



- Luke 10:18 And he said unto them, I beheld Satan as lightning fall from heaven.
- 19 Behold, I give unto you power to tread on serpents and scorpions, and over all the power of the enemy: and nothing shall by any means hurt you.
- 20 Notwithstanding in this rejoice not, that the spirits are subject unto you; but rather rejoice, because your names are written in heaven.
- 21 In that hour Jesus rejoiced in spirit, and said, I thank thee, O Father, Lord of heaven and earth, that thou hast hid these things from the wise and prudent, and hast revealed them unto babes: even so, Father; for so it seemed good in thy sight.

The Number of his Name Part II



The Fall & The Fallen Ones!

Home > Lexicons > Hebrew > Naphal The KJV Old Testament Hebrew Lex

Strong's Number:	05307	Browse Lexicon		
Original Word	Wor	Word Origin		
נפל	a primitive root			
Transliterated Word	TDN'	<u>r</u> Entry		
Naphal	TW	OT - 1392		
Phonetic Spelling	Part	s of Speech		
naw-fal' 🕪	Ver	b		

Definition

to fall, lie, be cast down, fail (Qal)

to fall

to iaii

to fall (of violent death)

to fall prostrate, prostrate oneself before

to fall upon, attack, desert, fall away to , go away to,

fall into the hand of

to fall short, fail, fall out, turn out, result

to settle, waste away, be offered, be inferior to

to lie, lie prostrate

(Hinhil)

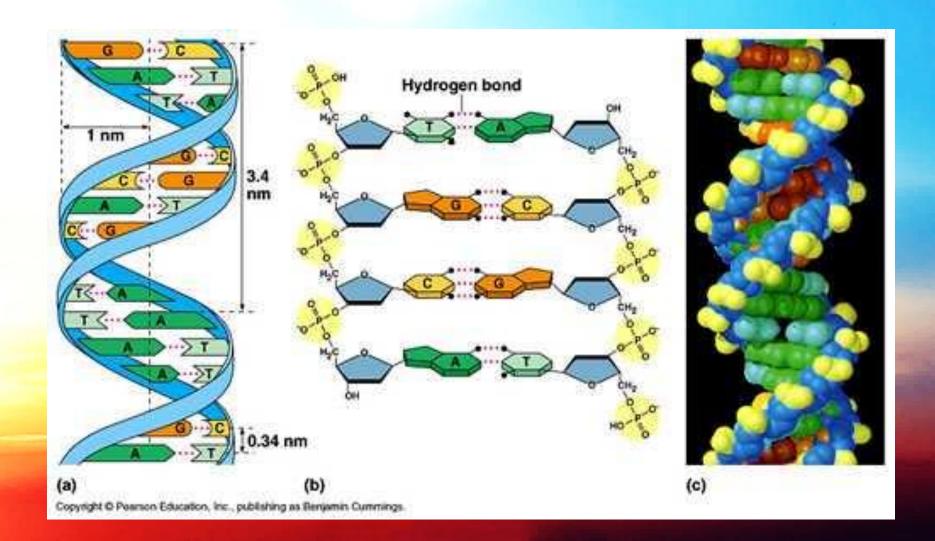
- And, behold, here cometh a chariot of men. with a couple of horsemen. And he answered and said, Babylon is fallen, is fallen; and all the graven images of her gods he hath broken unto the ground.
- Isaiah 21:9

The return of the Nephilim



- Daniel 2:42 And as the toes of the feet were part of iron, and part of clay, so the kingdom shall be partly strong, and partly broken.
- 43 And whereas thou sawest iron mixed with miry clay, they shall mingle themselves with the seed of men: but they shall not cleave one to another, even as iron is not mixed with clay.

The Language of Life



of one speech. Genesis 11:1

- You've probably heard of a molecule called DNA, otherwise known as "The Blueprint Of Life". Molecular biologists have been examining and mapping the DNA for a few decades now. But as they've looked more closely at the DNA, they've been getting increasingly bothered by one inconvenient little fact the fact that 97% of the DNA is junk, and it has no known use or function! But, an usual collaboration between molecular biologists, cryptoanalysists (people who break secret codes), linguists (people who study languages) and physicists, has found strange hints of a hidden language in this so- called "junk DNA".
- Only about 3% of the DNA actually codes for amino acids, which in turn make proteins, and eventually, little babies. The remaining 97% of the DNA is, according to conventional wisdom, not gems, but junk.

Therefore is the name of it called Babel; because the LORD did there confound the language of all the earth: and from thence did the LORD scatter them abroad upon the face of all the earth. Genesis 11:9

- The next big breakthrough came from a really unusual collaboration between medical doctors, physicists and linguists. They found even more evidence that there was a sort-of language buried in the introns.
- According to the linguists, all human languages obey Zipf's Law. It's a really weird law, but it's not that hard to understand. Start off by getting a big fat book. Then, count the number of times each word appears in that book. You might find that the number one most popular word is "the" (which appears 2,000 times), followed by the second most popular word "a" (which appears 1,800 times), and so on. Right down at the bottom of the list, you have the least popular word, which might be "elephant", and which appears just once.
- Set up two columns of numbers. One column is the order of popularity of the words, running from "1" for "the", and "2" for "a", right down "1,000" for "elephant". The other column counts how many times each word appeared, starting off with 2,000 appearances of "the", then 1,800 appearances of "a", down to one appearance of "elephant".

Hebrews 2:9 who was made a little lower than the angels for the suffering of death,

If you then plot on the right kind of graph paper, the order of popularity of the words, against the number of times each word appears you get a straight line! Even more amazingly, this straight line appears for every human language - whether it's English or Egyptian, Eskimo or Chinese! Now the DNA is just one continuous ladder of squillions of rungs, and is not neatly broken up into individual words (like a book).

So the scientists looked at a very long bit of DNA, and made artificial words by breaking up the DNA into "words" each 3 rungs long. And then they tried it again for "words" 4 rungs long, 5 rungs long, and so on up to 8 rungs long. They then analysed all these words, and to their surprise, they got the same sort of Zipf Law/straight-line-graph for the human DNA as they did for the human languages!

There seems to be some sort of language buried in the so-called junk DNA!

Certainly, the next few years will be a very good time to make a career change into the field of genetics.

So now, around the edge of the new millennium, we have a reasonable understanding of the 3% of the DNA that makes amino acids, proteins and babies. And the remaining 97% - well, we're pretty sure that there is some language buried there, even if we don't yet know what it says

"Letters of the language" "A, G, C, T" what is common?

• The structure that is common to them is six sides!

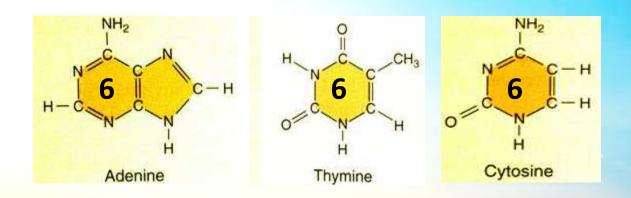
Words of the language "Codons"

The Genetic Code (DNA)

TTT	Phe	TCT	Ser	TAT	Tyr	TGT	Cys
TTC	Phe	TCC	Ser	TAC	Tyr	TGC	Cys
TTA	Leu	TCA	Ser	TAA	STOP	TGA	STOP
TTG	Leu	TCG	Ser	TAG	STOP	TGG	Trp
CTT	Leu	CCT	Pro	CAT	His	CGT	Arg
CTC	Leu	CCC	Pro	CAC	His	CGC	Arg
CTA	Leu	CCA	Pro	CAA	Gln	CGA	Arg
CTG	Leu	CCG	Pro	CAG	Gln	CGG	Arg
ATT	Ile	ACT	Thr	AAT	Asn	AGT	Ser
ATC	Ile	ACC	Thr	AAC	Asn	AGC	Ser
ATA	Ile	ACA	Thr	AAA	Lys	AGA	Arg
ATG	Met*	ACG	Thr	AAG	Lys	AGG	Arg
GTT	Val	GCT	Ala	GAT	Asp	GGT	Gly
GTC	Val	GCC	Ala	GAC	Asp	GGC	Gly
GTA	Val	GCA	Ala	GAA	Glu	GGA	Gly
GTG	Val	GCG	Ala	GAG	Glu	GGG	Gly

 The genome of an organism is inscribed in DNA. The portion of the genome that codes for a protein is referred to as a gene. Those genes that code for proteins are composed of tri-nucleotide units called codons, each coding for a single amino acid.

"The number of a man"



Here is wisdom. Let him that hath understanding count the number of the beast: for it is the number of a man; and his number is Six hundred threescore and six.

Revelation 13:18

Number of a man

- Base pair geometry
- The geometry of a base pair can be entirely characterized by 6 coordinates: rise, twist, slide, shift, tilt, and roll. These values precisely define the location and orientation in space of each base pair in a DNA molecule relative to its predecessor along the axis of the helix. Together, they characterize the helical structure of the molecule. In regions of a DNA molecule where the normal structure is disrupted these values are used to describe the disruption.

Gene pioneer signs his synthetic DNA creation

31 January 2008
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Artists usually sign their work - and genomics pioneer Craig Venter is no exception. Written into the sequence of the synthetic bacterial genome unveiled last week is his name, his institute's, plus those of other key researchers involved.

The genome, modelled on the parasite *Mycoplasma genitalium*, is the longest stretch of synthetic DNA ever produced, at around 580,000 bases. "We're pretty damned proud of what we've done, and we wanted to sign it," says Venter. To make their marks, the team took the one-letter abbreviations for amino acids - "C" for cysteine, "R" for arginine, "A" for alanine, and so on - and included the corresponding DNA sequences in their synthetic genome (*Science*, <u>DOI: 10.1126/science.1151721</u>).

These "watermarks" also have a serious purpose. The plan is to transplant the synthetic genome into a living *Mycoplasma* cell, in the hope that it will "boot up". The watermark sequences will provide a good way of verifying if the transplant is successful by allowing researchers to distinguish between artificial and natural DNA. Venter adds that the watermarks will also help protect the group's intellectual property, making it harder for others to use the synthetic genome without permission.

"The DNA watermarks will provide a way to protect the team's intellectual property" Drew Endy, a bioengineer at the Massachusetts Institute of Technology, agrees that <u>synthetic</u> <u>biologists</u> should

"barcode" their products. This would allow for the rapid detection of synthetic DNA, which may ease growing concerns over the risks of <u>organisms that contain</u> <u>synthetic sequences</u> escaping into the environment. It could also provide an identity tag with information about a sequence.

But Endy urges synthetic biologists to agree on a standardised watermark system, and to research methods that will ensure that such "barcode" sequences do not cause unpredictable biological effects.

Artificial letters added to life's alphabet

13:07 30 January 2008 NewScientist.com news service Robert Adler

Two artificial DNA "letters" that are accurately and efficiently replicated by a natural enzyme have been created by US researchers. Adding the two artificial building blocks to the four that naturally comprise DNA could allow wildly different kinds of genetic engineering, they say.

Eventually, the researchers say, they may be able to add them into the genetic code of living organisms.

The diversity of life on earth evolved using genetic code made from arrangements of four genetic "bases", sometimes described as letters. They are divided into two pairs, which bond together from opposite strands of a DNA molecule to form the rungs of its characteristic double-helix shape.

The unnatural but functional new base pair is the fruit of nearly a decade of research by chemical biologist Floyd Romesberg, at the Scripps Research Institute, La Jolla, California, US.

Romesberg and colleagues painstakingly created a library of nearly 200 potential new genetic bases that are slight variations on the natural ones. Unfortunately, none of them were similar enough in structure and chemistry to the real thing to be copied accurately by the polymerase enzymes that replicate DNA inside cells.

In the near future, Romesberg expects the new base pairs will be used to synthesize DNA with novel and unnatural properties. These might include highly specific primers for DNA amplification; tags for materials, such as explosives, that could be detected without risk of contamination from natural DNA; and building novel DNA-based nanomaterials.

Increased 'evolvability'

More generally, Romesberg notes that DNA and RNA are now being used for hundreds of purposes: for example, to build complex shapes, build complex nanostructures, silence disease genes, or even perform calculations. A new, unnatural, base pair could multiply and diversify these applications.

The most challenging goal, says Romesberg, will be to incorporate unnatural base pairs into the genetic code of organisms. "We want to import these into a cell, study RNA trafficking, and in the longest term, expand the genetic code and 'evolvability' of an organism."

"It requires a long effort by multiple laboratories, but I think ultimately it will lead to some important tools," he says. "The ability to encode amino acids with unnatural base pairs will be quite powerful when it comes."

Journal reference: Journal of the American Chemical Society (DOI: 10.1021/ja078223d)

The Seal Of God & The Mark of The Beast

Part II The Number of His Name



