Kharsag Research Project

Proposed Survey 2009

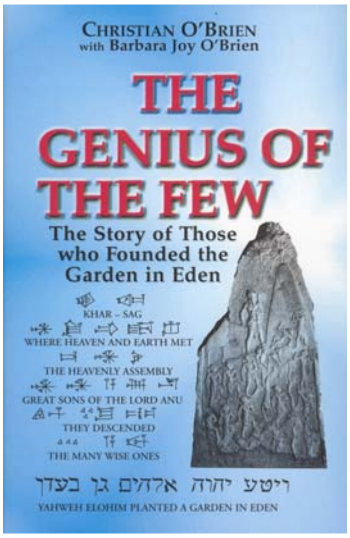
White stone statue of the Lady Ninkharsag (*mama* in Accadian) in the guise of the goddess of irrigation, found during excavations at Mari on the Upper Euphrates in Syria. On display in the Aleppo museum.

*With this Settlement will come prosperity; an enclosed reservoir – a water trap – should be established. The good land is full of water; because of the water, food will be plentif*ul - **The Lady Ninkharsag - Kharsag Epic No.2.** – Translation of archaic Sumerian cuneiform recovered from the remains of the Nippur Library in 1896.

The Patrick Foundation Golden Age Project

Aims of this Research Project

- We seek permission and support from the Lebanese authorities to carry out a preliminary survey and investigation of the Rachaiya South Basin and the surrounding area.
- We also seek to encourage the Lebanese authorities and where necessary others to assist in planning and organising the necessary archaeological and environmental surveys to substantiate the evidence gathered through the research and translations of ancient texts by the authors of *The Genius of the Few* – Christian and Barbara Joy O'Brien.
- To discover whether there are physical features and dated farming evidence, to establish beyond reasonable doubt, the actual *Kharsag* or *Garden of Eden,* as portrayed in the Sumerian, Arabic or Hebraic literature, at this site.



Submitted to the Lebanese authorities

September 2007

Patrick Foundation Independent Research

2 Smallends – Donnington – Ledbury

Herefordshire – HR8 2HY

e-mail: patrickfound@btopenworld.com

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Archaic Tablet 8383 - Sumerian Nippur Library - Decision to Settle

Nippur Archaic Cylinder - To judge from the script, the Nippur cylinder illustrated on this plate (8383 in the Nippur collection of the University Museum) may date as early as 2500 BC. Although copied and published by the late George Barton as early as 1918, its contents, which centre about the Sumerian air-god Enhil and the goddess Ninhursag, are still largely unintelligible. Nevertheless, much that was unknown or misunderstood at the time of its publication is now gradually becoming clarified, and there is good reason to hope that the not too distant future will see the better part of its contents ready for translation.

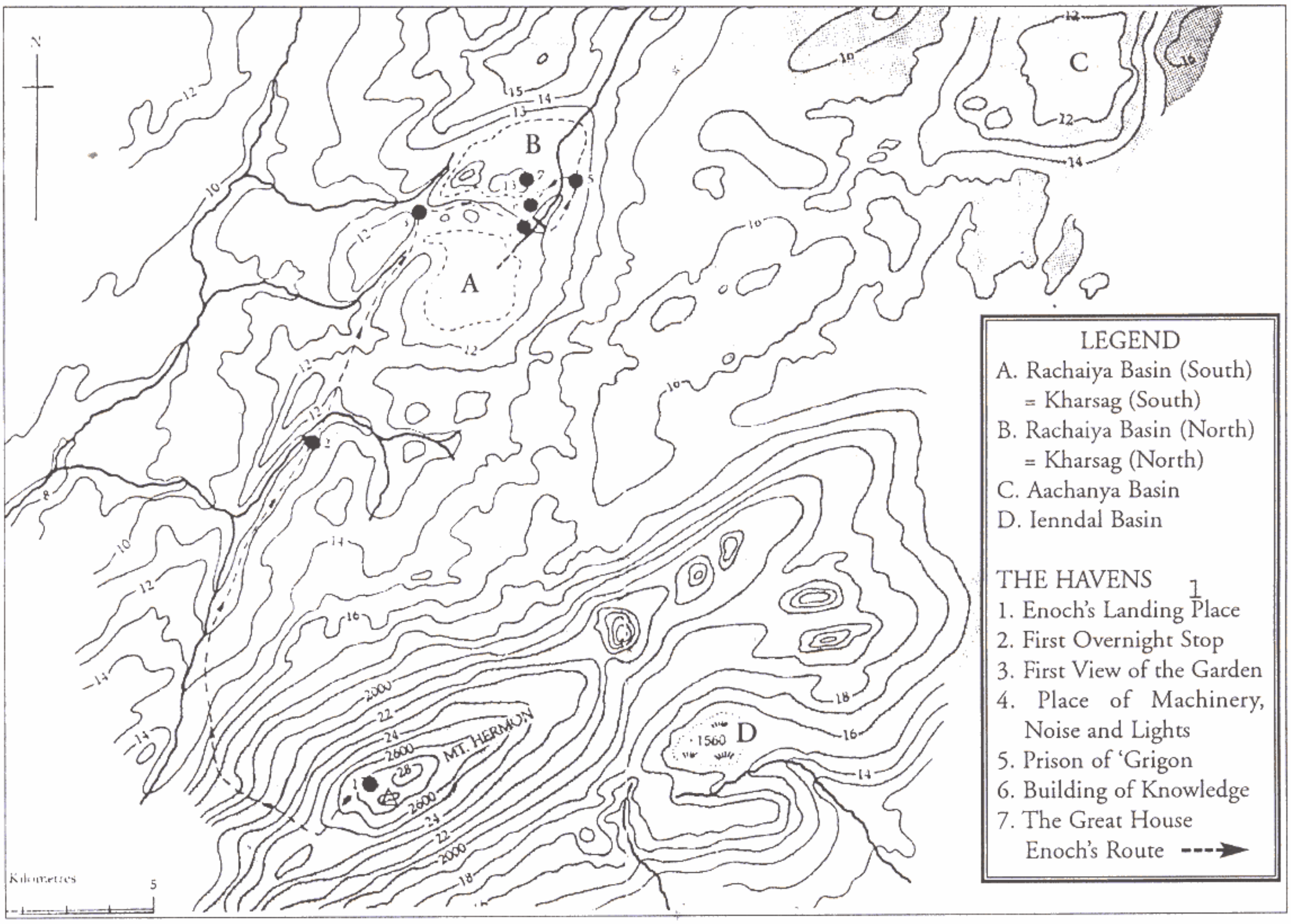
From *Sumerian Mythology* by Samuel Noah Kramer 1963

Proposed site for Kharsag/Eden - is located 8 miles north of Mt Hermon at the south eastern end of the Beqaa Rift Valley, which lies between the snow capped mountains of the Lebanon and Anti-Lebanon mountain ranges (at the top of this satellite image of the Near East) – O'Brien distinguishes the planted Highlands (*ha'shemim*), from the Lowlands (*arez*) within the sheltered and relatively warmer Rift Valley, running beyond Jericho and the Dead Sea to the Gulf of Akaba and the Red Sea.

Environs of the Rachaiya Basin

Mount Hermon (Arabic: جبل الشيخ *Jabal el-Shaiykh*, *Djabl a-Shekh, mountain of the chief* and *snowy mountain)*

The Havens (below right) are those recorded in the Chronicles of Enoch, which describe in detail Enoch's journey to meet the Great Lord – Chapter 4 - *Genius of the Few*



Map 3. *To illustrate the Environs of the Rachaiya Basin and Mount Hermon*

Map from p. 314 *Genius of the Few*

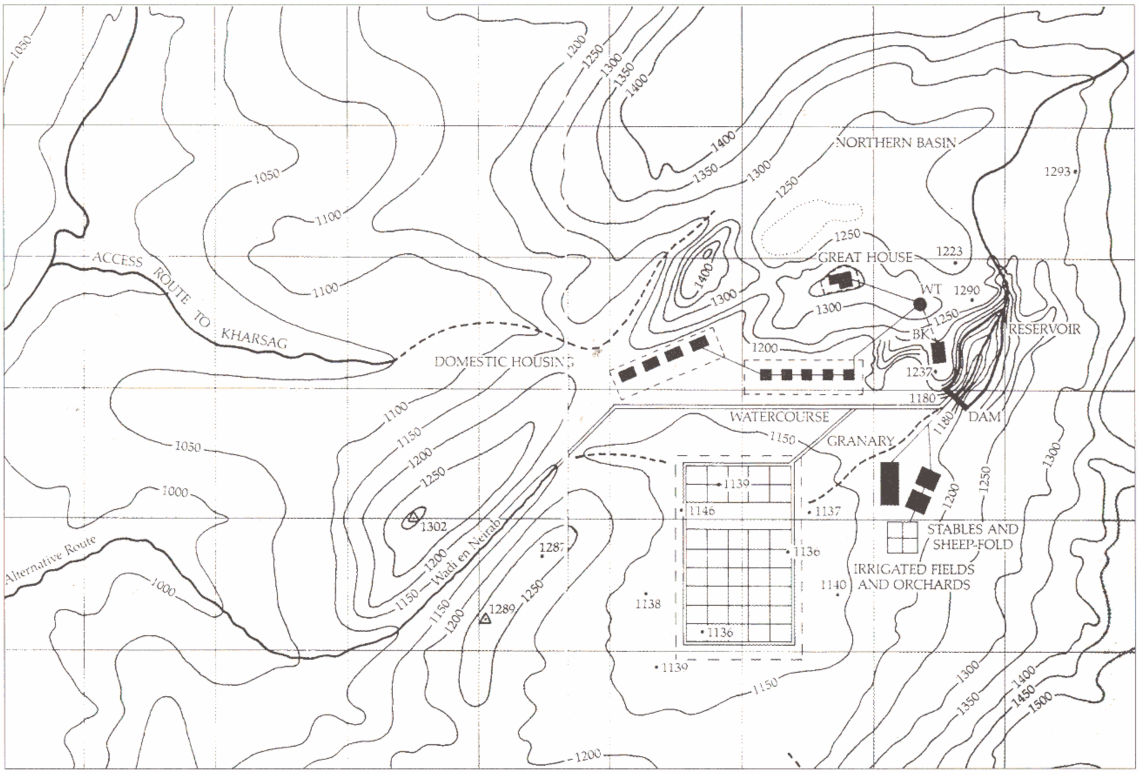
Proposed Survey Area

Looking south to Mt Hermon, over the Rachaiya North and South Basins, with the village of Kfar Qouq on high ground to the left foreground, and the town of Rachaiya in the right background. The shading is the result of the satellite images taken at different times of the year. This shows different levels of flooding in the south basin

Christian O'Brien in the *Genius of the Few* provides the evidence that a dam was constructed and reservoir formed in the narrow valley east of Kfar Qouq, and that an overflow watercourse was built along the north bank of the south basin to take surplus water into the Wadi en Neirab, middle right.

This would have provided irrigation in what would in consequence have been a large, dry, fertile and level area for livestock, crops and orchards in a former lake-bed. The Sumerian cuneiform records that the dam and watercourse were destroyed by a 1,000 year storm. This event is dated to c. 6,200 BC from linked evidence.

Outline Contour Map of the Rachaiya Basin with Speculative Placements of Structures mentioned in the Kharsag Epics – Features not to scale (p. 315 *Genius of the Few*) - The Great Watercourse is shown running East–West from the Dam Wall Overflow to the Outlet into Wadi en Neirab – Google Image showing the watercourse below



Background to this Proposal

The survey is based in and around the Rachaiya Basin South, 8 miles (12 kms) north of Mt Hermon in Lebanon (Latitude (DMS) 33^{o} 30' 4" N Long (DMS) 35^{o} 50' 22"E). This inter-montane valley lies above the Bekaa Plateau on the anti-Lebanon Mountain range close to the Jabal Ash-Shakh (Mount Hermon) range. It has abundant supplies of fresh water and fertile soils derived from volcanically extruded and weathered rock, together with sediments within a former lake bed.

Rachaiya town is 25 miles (37.5 kms) from Damascus and 35 miles (52.5 kms) from Beirut, our main port of call for communications and liaison with the authorities and archaeological departments, with our second communication centre being Damascus, where we hope to gain support and cooperation from both Lebanese and Syrian authorities.

Kharsag translates from the archaic Sumerian as *head enclosure*, and is named from the Kharsag Epics, a series of clay cylinders and tablets, inscribed in cuneiform from the Nippur library, and translated by Christian O'Brien, who read natural sciences at Christ's College, Cambridge. From 1935 he spent many years as an exploration geologist in Iran, where he was involved in the discovery of the Tchoga Zambil ziggurat (French Delagation Archeologique En Iran of its findings from Mission de Susiane 1966).

In 1970 he retired as the head of the international oil operating companies in Iran, and was awarded a CBE in 1971 for his work. He then devoted his retirement to researching the many enigmas of prehistory, surveying and discovering the Integrated Astronomical Observatory Line A - Hatfield Forest to Wandlebury, near Cambridge, and the Bodmin Moor Astronomical Complex in Cornwall, England, both dated to c. 2,500 BC. He established the overwhelming mathematical probability and proof that they were designed for complex observational astronomy.

In the search with his wife Barbara Joy for the master builders who constructed them, he followed the evidence back to the land of Canaan and Sumeria, and established the need to master archaic Sumerian cuneiform, Aramaic and Hebrew texts and languages.

O'Brien became the scholar who continued the work of Samuel Noah Kramer, who was born in the Ukraine in 1897, and died in the United States in 1990. Kramer was one of the world's leading Assyriologists, and a world renowned expert in Sumerian history and language.

The cylinders and tablets, recording the Kharsag Epics, form part of the Nippur collection held at the University Museum, Philadelphia in the USA. They describe in detail the agricultural, and advanced technical activities of the primary Sumerian Gods, An, Enlil and Ninhursag. The detail within the Kharsag Epics are supported independently by the Chronicles of Enoch, and the early chapters of Genesis.

Christian O'Brien in his book *The Genius of the Few*, first published in 1985 and co-authored by his widow Barbara Joy, sets out the evidence that Kharsag and the Garden of Eden were one and the same, and that this record was a pre-historic reality rather than a biblical myth.

He concluded that the south Rachaiya Basin met the requirements as being the most probable location of the Kharsag/Eden site. And further that; *a group of culturally and technically advanced people who settled in this inter-montane valley in the Near East had established an agricultural and teaching centre at about 8,200 BC. (Now re-calibrated to about 9,300 BC).*

He derived his choice for the location of Kharsag from a wide range of disciplines, including the descriptions of the area given by Enoch when he was taken to meet the Great Lord and record all that was going on. O'Brien finally used the French surveyed 1:20,000 map of the area, to eliminate three other possible inter-montaine basins before deciding that the Rachaiya south basin site, best matched the evidence.

People Involved

The Patrick Foundation Golden Age Project, set up in 1998 by **Edmund Marriage**, is run in partnership with **Barbara Joy O'Brien,** co-author of the books, with the specific purpose of continuing and promoting the O'Brien scholarship, together with protecting the author's copyrights on the wide range of subjects and discoveries made in the course of their work.

In November 2006 Edmund Marriage was able to study the area, identified by Christian O'Brien as the Kharsag/Eden site, using the Google Earth website satellite imaging facilities. His study of the images confirmed the strong physical feature of the watercourse, together with terrain and contour features, which support the accuracy of Christian O'Brien's ground plan. The Kharsag Research Project is run by **Edmund Marriage** in his role of an independent researcher and administrator of the O'Brien interests.

Aims

- We seek permission and support from the Lebanese authorities to carry out a preliminary survey and investigation of the Rachaiya South Basin and the surrounding area.
- We also seek to encourage the Lebanese authorities and if necessary others, to assist in planning and organising the necessary archaeological and environmental surveys to substantiate the evidence gathered through the research and translations of ancient texts by the authors of *The Genius of the Few* – Christian and Barbara Joy O'Brien
- To discover whether there are physical features and dated farming evidence, to establish beyond reasonable doubt, the actual *Kharsag* or *Garden of Eden* as portrayed in the Sumerian, Arabic or Hebraic literature, at this site.

Objectives

- To provide the Lebanese authorities with all possible cooperation and assistance in the undertaking of archaeological and other research deemed necessary on this project.
- To continue the work started by Christian and Barbara Joy O'Brien and to support the objectives of the Patrick Foundation in the pursuit of knowledge and its dissemination to the wider public.
- The purpose of this preliminary survey is to investigate, photograph and film the structural features in the Rachaiya Basin and surrounding area, and if possible take a number of sediment core samples, and locate sites for geophysical studies.
- To discuss the options available for funding and conducting archaeological surveys of the research area.
- To discuss the options available for funding and conducting and environmental surveys of the research area.
- To analyse environmental and cultural data obtained from the site in order to explore the origins of agriculture and pastoralism in southern Lebanon, from around 9,000 BC or earlier.
- To build upon the works of Christian O'Brien and the Patrick Foundation, linking and networking with those able to add their support and evidence in establishing a clearer picture of our history.

Survey Areas

Survey Area 1: Watercourse and Associated Features

Survey Area 2: Dam and Reservoir in the valley east of Kfar Qouf

Survey Area 3: Structural Features in and around Kfar Qouq

Survey Area 4: Springheads, aqueduct fed ponds, and natural lakes

Survey Area 5: Irrigated Fields, Orchards, and Irrigation Channels

Survey Area 6: Structural Features in the Wider Area, including Aiha

Survey Area 7: Quarry Sources for Ancient Stones

Survey Area 8: Wadi-n-Neirab – Storm Water Overflow

Survey Area 9: Access Routes from Hermon, Beqaa and Lowlands

Survey Area 10: Identify sites for taking sediment core samples

Survey Area 11: Identify recent volcanically active areas.

Survey Area 12: Features and dating of local agricultural terracing

Survey Area 13: Residual vegetation and plant remains over area

Survey Area 14: Evidence of the area being fenced or walled

Survey Area 15: Temples and cave structures on Mt Hermon

Overhead Images of Survey Areas 1 - 5

Overhead of Great Watercourse

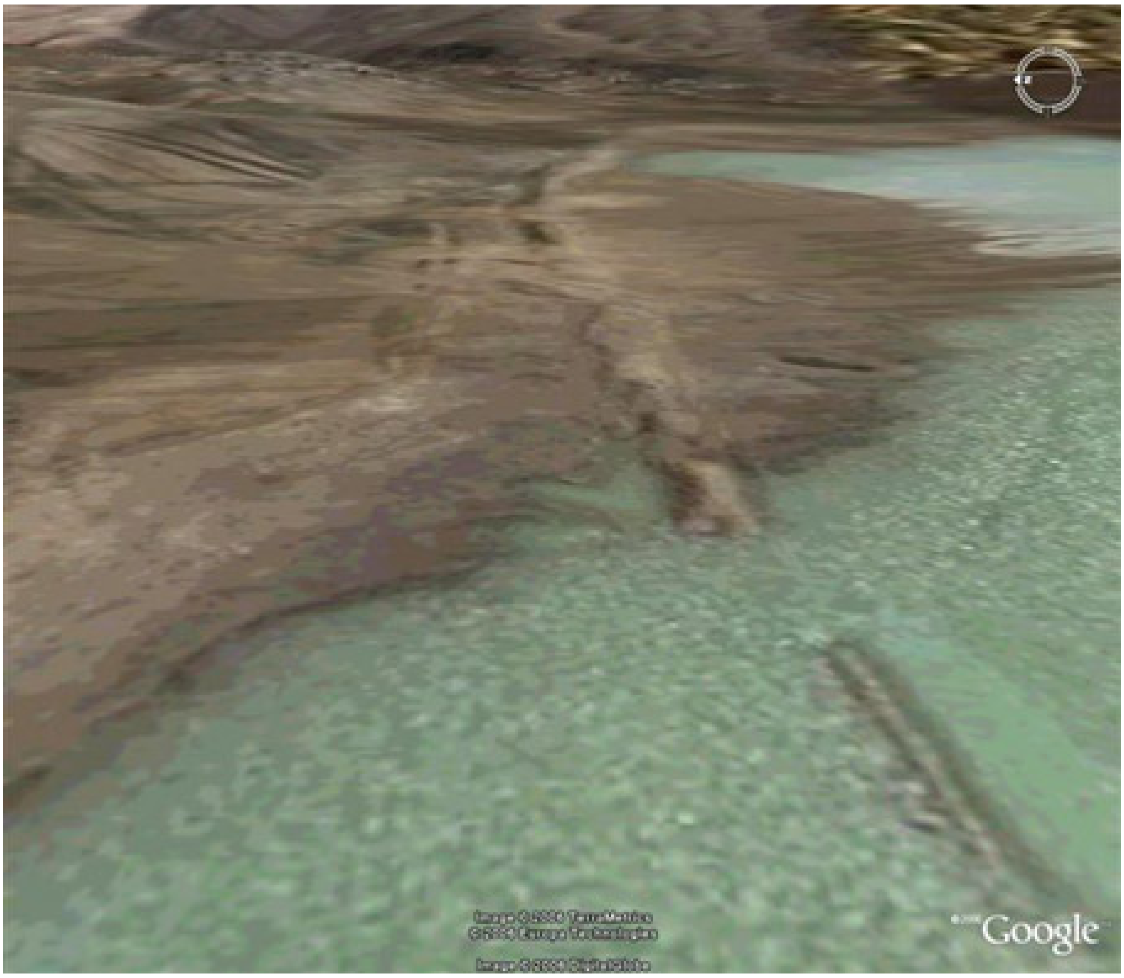
Survey Area 1

Looking East up the Watercourse to the Dam

Survey Area 1

Looking Back to the Dam

Survey Area 1



Area of the Siting of the Dam Wall in the Valley below Kfar Qouf

Survey Area 2

Site of Enlil’s Great House – Kfar Qouq

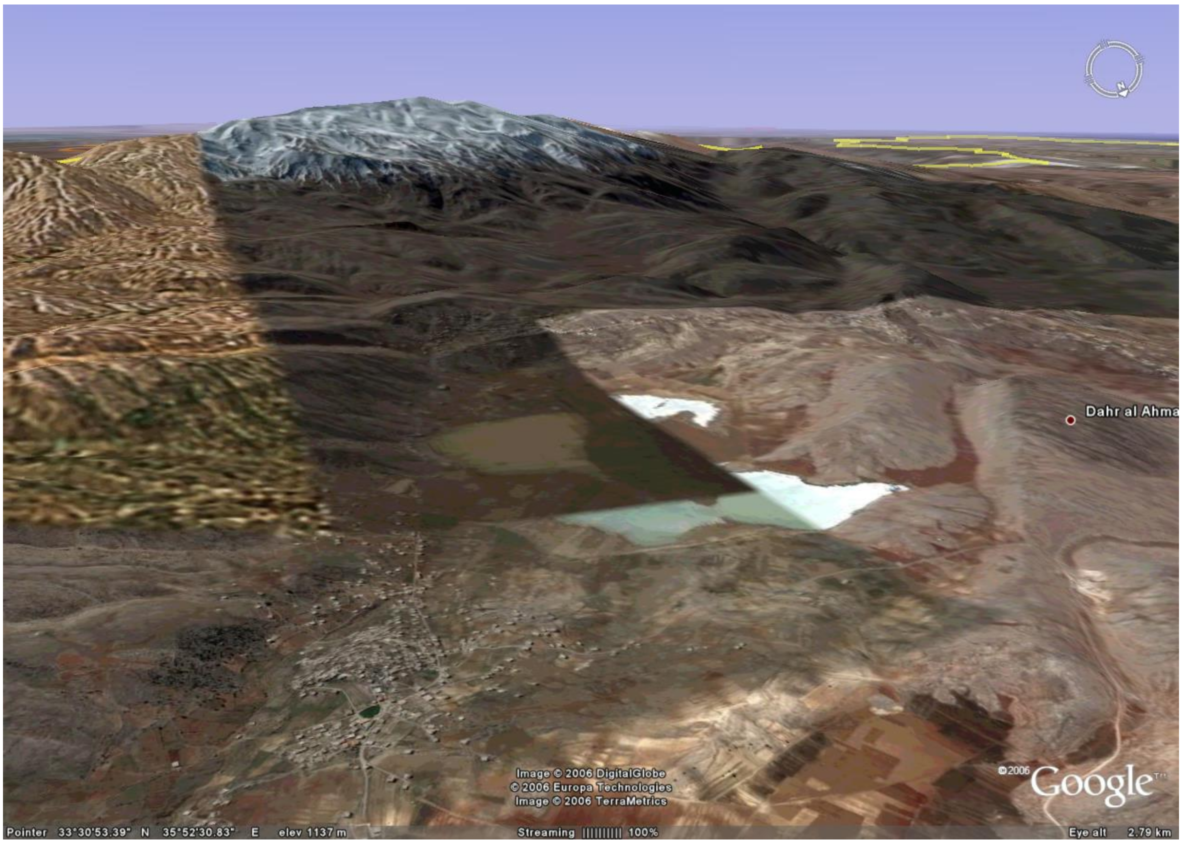
Survey Area 3

Circular Features on the High Ground West of Kfar Qouf

Survey Area 3

Springheads, Aqueduct Fed Ponds and Natural Lakes

Survey Area 4

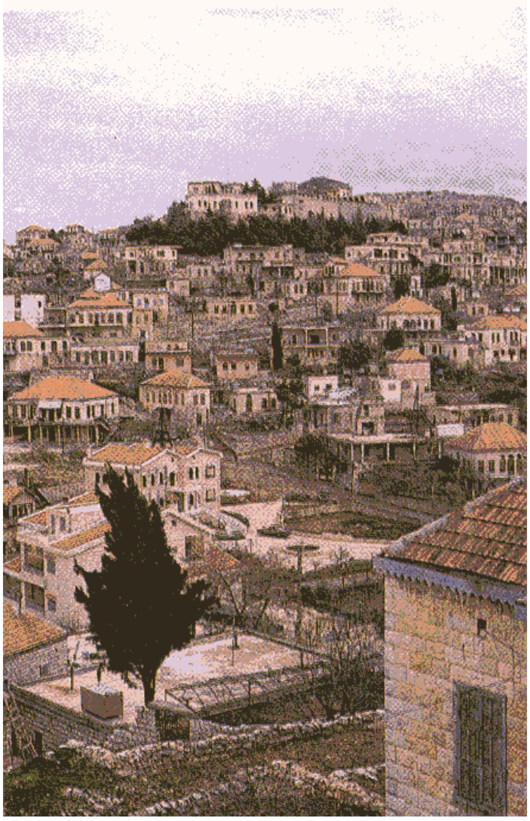


Looking north down into the Basin from Rachaiya

Survey Area 5

Rachaiya al-Wadi

(Extract from tourist brochure)



From Chtaura, proceed along the Damascus road to Masnaa (border post). Just before the post turn right, toward Rashaya. This is where Lebanon's early national leaders, including Bshara El-Khoury and Riad El-Solh, were held by French mandate authorities during the 1943 rebellion that triggered Lebanon's independence. Their prison was an eighteenth century citadel that can be visited today.

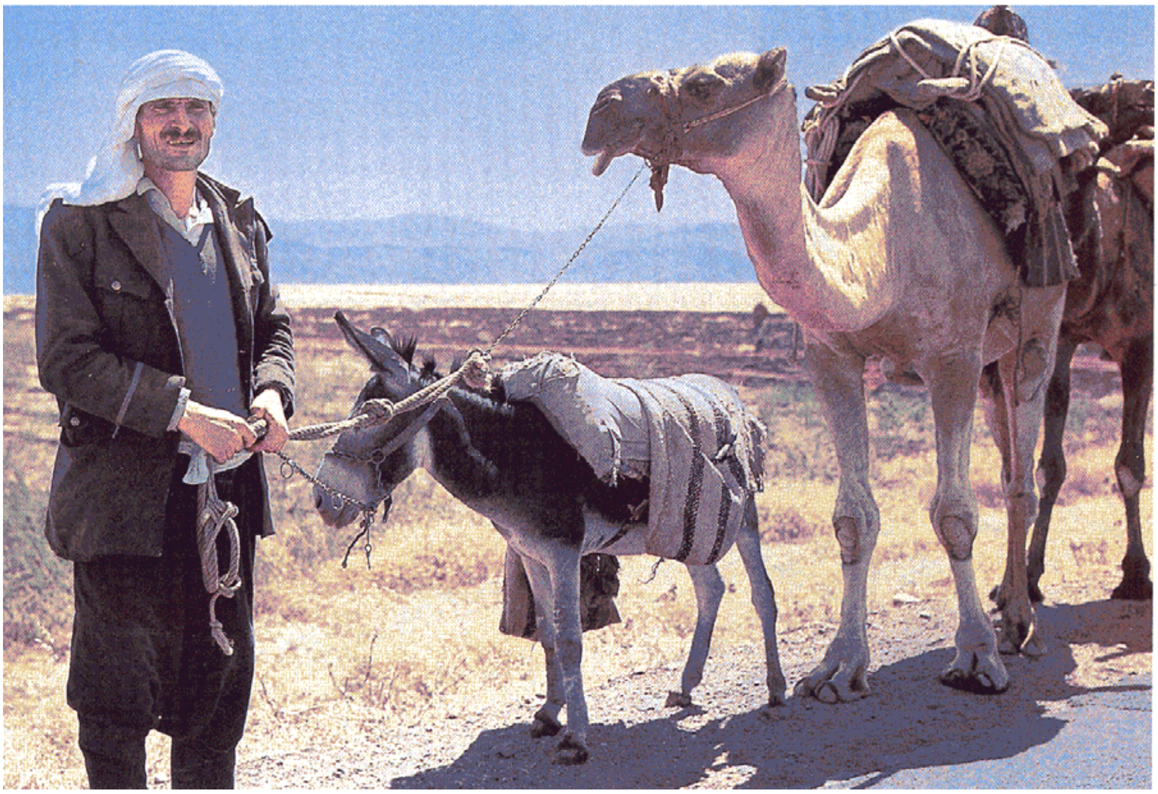
The Lebanese Army, which is now stationed at the castle, will assign a. guide to show you around the old vaulted chambers and the rooms where the Lebanese patriots were held.

The town of Rashaya, in a remote corner of Lebanon, has been only lightly touched by the modern building boom affecting most of the country. On its cobbled main street small shops sell old fashioned oil stoves, reflecting the needs of this chilly mountain town where the giant Mount Hermon (snow-covered six months of the year) looms overhead. This town is also known for its locally made gold and silver jewellery.

On the way to Rashaya from Chtaura try to take the route through the hilltop town of **Sultan Yaqub,** where there are spectacular views of the valley below. Turn right at Marj and continue through Khiara toward' Sultan Yaqub. This town, visible for miles around in every direction, also makes a good landmark.

Aiha

(Extract from tourist brochure on local village)



Take the Rashaya road from Masnaa and continue four kilometers on to Aiha, parking near the pond at the centre of the village. Aiha is built on the foundations of numerous Roman temples and structures. In some cases Roman walls have been reused in present-day houses and once-visible temple foundations have disappeared into modern structures as basements. At one household, a stone relief carving of a robed figure sits in the yard. Alongside it is an ancient stone well and temple debris.

Numerous column drums, mouldings and dressed stones have been incorporated into the walls in the village's northwest section, and massive retaining walls of the Roman enclosure terrace can still be seen - now as part of modern houses.

Aiha's residents will gladly show you around their intriguing town,

Ain Harsha

(Extract from tourist brochure on key local site)

From Chtaura drive in the direction of the border post with Syria, (Masnaa), but turn right toward Rashaya just before the post. Continue through the villages of Dahr El-Ahmar and Labia to Ain Harsha village whose high-walled terraces wind their way around the curves of the hillsides.

From here you have to walk. The rocky, exposed path (steep at first but levelling off) from the top of the village leads to the temple through a wild and beautiful landscape. On the walk, which takes about forty minutes, farmers and shepherds will greet you on your way and willingly give directions and colourful renditions of the history of the temple. The temple can also be reached by walking down from the higher village of Ain Ata.

One of the best preserved temples on Mount Hermon, Ain Harsha, is built of local limestone and blends in so well that it is virtually camouflaged among the rocky crags and boulders. A large stone (broken in two) in front of the temple, carries an inscription in Greek that dates it to 114-115 AD. The temple was restored in 1938-39 and the west wall-the side you see as you approach-is so perfect it is easily mistaken for modern. Around the temple are more remnants of ancient habitation, including sarcophagi.

Extracts from the Kharsag Epics (see data on p. 28)

The proposed archaelogical and environmental surveys at this site may be assisted by the following selected extracts from the cuneform records running in sequence, which describe specific people, structures, plants, crops, vegetaton, domesticated animals, and a wide range of other features and activities.

As a check list to be verified by archaelogical and environmental surveys and research, it can focus attention on the self evident advanced technology of our ancesters The identification and where possible the dating of specific items, will support the accuracy and validity of the O'Brien translation and thesis.

The lord of the Granary had not yet arrived; there, the grass had not yet become green. The lord of the Plough had not yet prepared the land and the water; for the lord of the Plough, the implement had not turned over the hard earth.

The cattle-shed had not been given running-water; had not been watered from the overflow; the ass had not been watered; the seed had not been watered.

Then, the well and the irrigation channels had not been dug; they had not been dug for the ass and the cattle. Because of the sunny enclosure, and the lord of the Granary, the harvest would be heavy.

The Anannage, the Great lords, had not yet arrived; The shesh-grain (term not yet understood) of thirty days did not exist; the shesh-grain of fifty days did not exist; the small grain, the mountain grain, the animal fodder, did not exist.

Hand utensils and clothes did not exist.

The lord of the Plough had not sown the grain; then, the enclosure had not been erected.

Together with the Great lords, the Great Lady had not arrived.

The faithful lord Ugmash had not taken observations of the movements of the Sun.

Mankind learned from the Great Shining Ones; they set things in order.

Man had not yet learned how to eat and how to sleep; had not learned how to make clothes, or permanent dwellings.

People crawled into their dwellings on all fours; they ate grass with their mouths like sheep; they drank storm-water from the streams.

Decision to settle - Choice of location – water plentiful

Fertility of the Soil – she spoke of testing the food soil

Importance of Irrigation - 9,500 BC and 5,500 BC at this location

Winter Snow – Cedar buildings – Seven pests of the cedar trees

Great cedar built house within the sanctuary - Cedar wood fires

Great stone built watercourse or canal – the sides are strong

Stone walled dykes – Four irrigation channels (four rivers of Eden) running from the main watercourse.

High stone built reservoir – worry about the height of the reservoir

The bird discovers the sown field - Two cups of good wine they poured out for her.

We must burn the cedar-tree pests - there are seven kinds; my receptacle is good for burning, in the middle of the Serpent area.- [spoke] of destroying all the insects on the vines with a great light before Sunrise.

You spoke of high water-channels - a mighty stream of high water; it must be brought to your young plants - and the high water-stream to the trees. ...

She spoke of its Granary; its house and garden, of the desirability of the loftily-placed house. Spoke of its irrigated enclosure - of building roads - of a maternity building for mothers - its site high up.

She spoke of creating a watered garden - with tall trees; [spoke] of the loftily-built tree plantations; spoke of the strong storms flooding the lofty cedar-tree enclosures;

The stone jars were pressed down with grain (good harvest).

At the Building of Knowledge, the Lord Enki was stricken with sickness.

At his home, her man - the Lord Enlil - had eaten rich food; had drunk abundant water.

Now, warm milk was served to him; he could not swallow cooked food. For food, he took heated milk.

To the Lord Enlil, running a high temperature (Literally - 'burning in his bed)'

'Protection has overcome it: In Eden, thy cooked food must be better cooked.

In Eden, thy cleaned food must be much cleaner.

The sides of the watercourses are strong, but its swift flow dams up the angry waters; the damming-up could cause the Reservoir to overflow in the night.

At that time, where the lords planted greenery, its fruit covered the extensive enclosure; the lord of the Granary made it beautiful. The lords rejoiced in the enclosed place - in its food enclosures - in its shady orchards.

Where the lord of the Granary had planned abundant vegetation, the Anannage, in their bright dwellings in the spacious enclosure, ate abundantly, but were not content.

Of the excellent milk from the spacious sheepfold, the Anannage, in their bright dwellings in the spacious enclosure, drank abundantly, but were not content.

Because of the surplus food from the spacious enclosure, they made a favourable decision that Mankind should be raised to an equal place.

At that time, the lord Enki was speaking to the lord Enlil. Father Enlil had appointed the lord of the Granary to erect that splendid, enclosed dwelling

the splendid dwelling - the light dwelling - place with lofty water ... ...

The lord Enki and the lord Enlil conversed animatedly...

The lord of the Granary, from the splendid watercourse [had watered] the cattle-shed ... ...The cattle-shed was surrounded by a wall ...he covered the stocks of food in a lofty building.

The lord of the Granary irrigated the fields; he made their bright, enclosed places and cultivated fields; he made firm the wall of the cattle-shed; he appointed a herdsman for his abundant cattle: the lord of the Granary was made responsible for the building.(Literally - 'was set over the destiny of the building').

Rich pasture-land was established for the abundant, fat cattle; its fields were full of lively horns; the vigorous young animals raced about the Heights. The lord of the Granary and the Cattle-Shed multiplied the offspring.

Where the perched House stood, the ground was made shady; and then the boundary was fenced-in.

My Lady, when the storms come, the Mountains flood: 'Keeper of the fenced enclosure, protect thy Lady: The Lady Ninlil banked-up the watercourses; she spoke in favour of sluices; she had them made.

My Prince - Great Ox of unbridled strength; Splendid Serpent of the shining eyes; Teacher of the digging of all canals; creating a mass of cedar-trees as a wind-break for the plantations; spoke of cultivating well with trees for shade.

The great cedar-tree was felled, and removed, by road, from the mountain-forest in the Highlands. He built strong houses with cedar-wood, dwellings of aromatic wood - and the Great House of Enlil. The fenced House was established - building of stone fireplaces.

She made a plan to share out food and drink in their midst, fairly, among the many cold houses at Kharsag. She made a joyful feast - two large oxen were roasted - the weak became drunk and could not stand.

The four walls protected the Lord from the raging cold. The fate of the Granary rested on its thick walls - it was preserved from disaster, from the power of the storm-water; it was protected by its surrounding wall - it was not destroyed. The flood did not destroy the cattle. Kharsag had a furnace built into it against the cold; in many houses, fires were established for comfort.

[But] many houses were overwhelmed when the storm-water broke into them. ... ...

The remaing Kharsag Epic Tablet 8317 covers a 1,000 year storm, and tablets 19,751, 2,204, 2,270 and 2,302 record the Final Destruction of Kharsag, overwhelmed by flood water, destroying the dam, reservoir and disabling the great watercourse, which we believe can still be seen on the Google images. From evidence of severe flooding in the Jordan Rift valley, this catastrophic event is dated to be around 6,200 BC on current assessments. Global Catastrophe, which brought our ancestor gods to this location, finally moved their progeny on to other locations around the world. They appear to have visited these other locations, and deployed their advanced technology, soon after arriving at Kharsag at a date, which now seems to be around 9,500 BC.

Data for the identification of the Kharsag Epic Tablets

The autographed texts and transliterations from the original Sumerian, cuneiform-inscribed tablets are to be found in *Miscellaneous Babylonian Inscriptions* by Professor George A. Barton, published by the Yale University Press and the Oxford University Press in 1918. The tablets, themselves, are part of the Nippur collection held in the University Museum at Philadelphia, U.S.A. Data necessary to their identification is listed below. Kharsag Epic numbers and titles are those allocated in this volume.

Kharsag Epic	Title	Museum Number
	Chapter Three - Where Heaven and Earth Met	
1	The Arrival of the Anannage	14 005
2	The Decision to Settle	8 383
3	The Romance of Enlil and Ninlil .	9 205
4	The Planning of the Cultivation	11 065
5	The Building of the Settlement	8 322
6	The Great House of Enlil	8 384
7	The Cold Winter Storm	8 310
	Chapter Eight - The Destruction of Kharsag	
8	The Thousand Year Storm	8 317
9	The Final Destruction	19 751+, 2 204+, 2 270+, 2 302

Notes - The biblical story of the Garden in Eden has had many counterparts; but their documents are often little known outside specialist circles. Even within these circles, few have recognized them for what they are, as they tend to be obscured by apocryphal overtones. But one, fortunately for our thesis, was written in clear and secular terms, unmarred by those deification processes which were later to bring the story into such disrepute.

That counterpart was inscribed on clay tablets in Sumer - doyen of the civilizations born in the lower Mesopotamian Valley - where a whole series was made over a period covering the third millenium BC. They give the impression of being coveted library possessions, which were copied in many places, and in many centuries, in sequential *re-printings*. The copies from which the account in these chapters is taken, were buried under the destruction of war, and were not brought to light again until American archaeologists excavated at Nippur (a Sumerian city some eighty kilometres south-east of Babylon) at the beginning of our own century, nearly five thousand years after they had been inscribed.

From *The Genius of the Few* by Christian and Barbara Joy O'Brien

Hierarchy of the Kharsag /Garden of Eden

Names from the texts appear in this brief summary, to provide a guide to establish other names used for the same role, the same individual, or subsequent successors, within an ordered and disciplined role society.

- **The Most High** = Supreme Commander of Anannage = Leader of the Shining Ones = Yahweh Elohim = An = Anu = Ptah = *Nawu* = *Ukqili* = *Bunjil* = *Puluga* = *Allah* = *Amun* = *Amen* = *Baal* = *Baal Hadad* = *Bel* = *Manu* = *Manitu* = *Manco Copac* = *El Shaddai* = *El Elyon* = *Quetzalcoatl* (Yahweh would appear to be the title specifically adopted for an individual at a much later date).

- **The Lord of the Spirits** = Lord of Cultivation or Hoe = Enlil = *Osiris*

- **Seven Archangels = Two Eyed Serpents** = Anannage Council = Elohim = Senior Teachers = Seven Richis = Ancient Masters = *ap-kar-lu* = *genie* .

  Gabriel = Governor of Kharsag = Ninlil/Ninkharsag = Inanna/Bel'it/Isis = Neith/Mama/Kali/Ka/Coatlicue = Serpent Lady = Queen of Heaven = Earth Mother **– Uriel** = Lord of the Land = Enki – **Raguel** = Sun Wisdom and Law = Utu/Ugmash/Shamash/Ogimus/Ogma/Og – **Michael** = Captain of the Guard – **Raphael** = Chief Medical Officer – **Sariel** = Representative of the Watchers – **Remiel** = Supervisor of Instructions. Thus far in the first named we have the Ennead of Nine. *The ninefold pantheon of Gods - who begat gods.*

- **Angels = One Eyed Serpents = Anannage** = Elohim = *en-ge-li* = Lords of the Cultivation = *ap-kar-lu* = *genie* = *djinne* = *djoune* = *mal'ak* = *ha'neshim* = *tuatha de danann* = *serpents* = *druids*.

- **The Watchers** = Craftsmen and Teachers = Leader Shemjaza = Teams of ten under a Craft Leader, plus groups of fifty and one hundred, under respective leaders – *Two hundred descended in the days of Jared on the summit of Mt Hermon.* They were drawn from a wide range of physical types, some very large (Nephelim) and some very small (Igigi = Sumerian and Babylonian). Assistants and possibly servants, to the One Eyed and Two Eyed Serpents.

  Please note: Horned turbans and wings denoted divinity and rank. A primary name indicating roles (in green), for a succession of individuals, which was to produce, through the early city state system, the Golden Age, or Great Harmony, or Tao, which lasted thousands of years.

Ap-kar-lu, Genie, Djenoun or Angel

Ap-kar-lu translates as three words, father or farmer – enclosure – bright or shining. Because of the association with enclosure, the logical translation reads - *bright farmer from the enclosure*. The images of the ap-kar-lu below remained unchanged in basic detail for more than 4,000 years with strict rules on maintaining accuracy (Woolley). The wings and horned hat, or turban, denoting a divine being and rank. From Genie we derive the word genius. These individuals doing real jobs, were attributed, by the early peoples of Mesopotamia, as the gods who had provided domesticated crops, animals and the technology of civilisation. They featured prominently in the throne room of the palace accredited to Sargon II at Khorsabad, c. 850 BC and many different versions on the same theme can be inspected in the Assyrian room at the British Museum caring for wildlife and farming.


We can speculate on the folk memory or reason, for wings being attached to the images of the ap-kar-lu. We have important clues of their origin, or mistaken identity, from Enoch, and the image on the right of the traditional feathered coat of people of rank. In this case a Maori Princess wearing one in 1921: *Their clothes were remarkable – being purplish [with the appearance of feathers]; and on their shoulders were things that I can only describe as 'like golden wings'* – ***Enoch*** *– Secrets of Enoch SE I:2-10 PP*

The Origins of Agriculture by Harold Peake - 1928

Lastly let us turn to the testimony of tradition. About fifty years before the beginning of the Christian era Diodorus Siculus was writing his history, in which he gave the story of Osiris and Isis, who were associated in Egypt with the cultivation of corn. In this account he states that Isis discovered wheat, or to be more exact emmer and barley growing promiscuously about the country along with other plants and unknown to mankind. In another passage he states that the country in which these plants were found by the goddess was Nysa, which he describes as a high mountain of Phoenicia, far away. It is significant that Mount Hermon, on the slopes of which in 1908 Aaronsohn first found Emmer growing wild, lies about thirty miles inland from the sites of the Phoenician settlements of Tyre and Sidon.

Time will, perhaps, show us which, if any, of these three suggestions, is the true solution of our problem; either the first or the last seems the most probable. In any case the balance of evidence seems in favour of the view that wheat was first cultivated at some spot in South-West Asia, in all probability within a few hundred miles of Aleppo. Whether one of the three grains was first cultivated, after which the knowledge spread to the regions in which the others grew wild, or whether, on the other hand, two or three different centres experimented independently with different kinds of wheat we cannot be sure. Since Wild Barley is found more commonly in Asia than in Africa, it is natural to expect that it was first cultivated in the same region in which wheat also was first grown. But, until it can be shown that the predynastic graves in which barley has been found near Silsileh and at Nega-ed-Dêr are later than sequence date 40, we cannot be sure that the dwellers by the banks of the Nile had not made independent experiments in the cultivation of that grain.

Euphrates, having nearly killed out the game on which they had formally subsisted, searching for nuts, berries, and roots, like the Epipalaeolithic inhabitants of Europe, and, being unable, like their western contemporaries, to live on clams and limpets, with an occasional oyster feast. Hungry and despondent they were at times driven, like the inhabitants of Queensland or Kordofan, to collect the seeds of wild grasses, until there arose a woman, who was to be their saviour and to lay the foundations of civilization.

It was we may well believe, about 5000 BC, or conceivably some centuries earlier, on the slopes of Mount Nysa, in Phoenicia, far away, that this woman collected the seeds of barley and of emmer, which there grew wild, and scattered them upon a bare surface of the mountain side, where they were watered by the dew of Hermon that descended upon the mountains of Zion, so that the seed that she had cast upon the hillside she found increased a hundredfold after many days. This woman, one likes to think, was immortalized by the Egyptians as Isis, and as Cybele, Agdistis, and Dindymene by the peoples of Asia Minor, later by the Greeks as Demeter and by the Romans as Ceres. Her memory has been preserved almost to our own time by our country folk as the Corn Goddess, whose effigy was carried to the barn in the last harvest wagon.

Origins of Agriculture by Professor Daniel Zohary - 1993

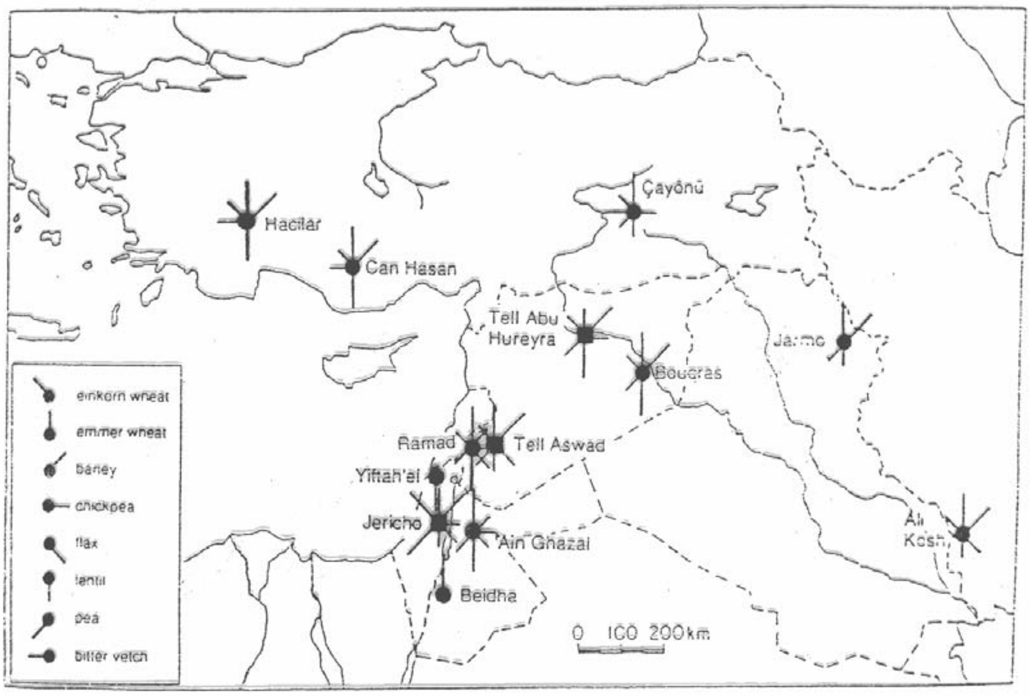


Figure 9.1 Crop assemblage in the early neolithic farming villages in Southwest Asia before 6000 bc (uncalibrated radiocarbon dates). ■: Earliest sites, with deposits containing remains of crops dated to the eighth millennium bc. ●: Somewhat later sites, dated to the seventh millennium bc. A short whisker indicates that the crop is relatively rare and a long whisker that it is relatively common among the excavated plant remains. (Adapted from Zohary & Hopf 1993: 37).

The ability to identify and accurately date a wide range of plant and bone remains, and reach reliable conclusions on the domestication of wild seeds and animals, provides examples of the many related sciences, which now allow history to be reconstructed in great detail. The earliest and therefore the most important sites for Near East Agriculture are Jericho, Tell Aswad and Abu Hureyra.

In the thirteen years since this information was compiled further discoveries with dating, emphasise the focus on Southern Lebanon as the source for the diffusion of domesticated agricultural crops and animals.

Golden Age Project Comment – 3rd January 2007

The above extract from the paper presented by Professor Daniel Zohary, comes from the *Origins and Spread of Agriculture and Pasturalism in Eurasia* - A collection of papers that came into being following a three day conference at the Institute of Archaeology, London in September 1993, where 23 speakers presented papers on a wide range of subjects, covering, epidemiology, genetics, geography, linguistics, and zoology. It gathered together specialists within a multidisciplinary scientific inquiry into this important subject. Expanded, revised and edited by Professor David Harris the contributors to the 29 chapters are leading names within their professions.

Mode of Domestication of the Founder Crops of South West Asian Agriculture – Daniel Zohary - Discussions and Conclusions

Genetic tests that are sufficiently comprehensive and specifically planned to throw light on the mode of origin of the Southwest Asian founder crops have not yet been attempted. The genetic evidence cited in this chapter consists mainly of facts extracted from experiments designed to answer totally different questions. Inevitably, these are just fragments of information, frequently in need of further confirmation and additional support from intentionally designed tests. In spite of these limitations, the available evidence leads to the following conclusions:

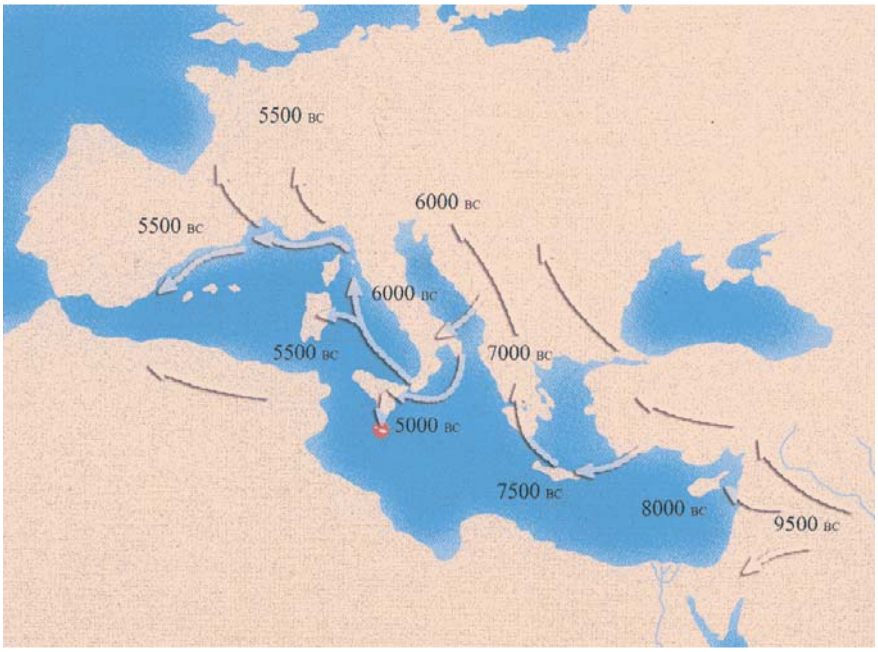
The mode of domestication of the Southwest Asian founder crops (as well as other cultivated plants) need not remain an open question. Several kinds of genetic tests can be proposed for obtaining critical evidence. If carried out on a sufficient scale, such examinations could provide firm evidence for discriminating between “monophyletic” and “polyphyletic” origins.

Some of the available genetic evidence (such as chromosome polymorphism in lentil, chloroplast DNA polymorphism in barley, sibling species in tetraploid wheats, the nature of the loss of wild-type seed dispersal and germination inhibition) already appear to be highly indicative. Taken together with the floristic information on species composition, they suggest that at least emmer wheat – the most important crop of Southwest Asian and European Neolithic agriculture – as well as pea and lentil (the main legumes) were each taken into cultivation only once, or at most only very few times. Evidence pertaining to the mode of origin of einkorn wheat, chickpea, bitter vetch and flax is much more meager, yet the data seem to be compatible with the notion of a single origin in each case. Only barley, where two different non-shattering genes (bc and bt) have been discovered (Takahashi 1964), is there an indication that this important crop has been taken into cultivation more than once. Yet even here the chloroplast DNA data suggest that only very few events have occurred.

In conclusion, the available data, fragmentary as they are, appear to support the hypothesis that the development of grain agriculture in Southwest Asia was triggered (in each crop) by a single domestication event or at most by very few such events. However, although such mode of origin is indicated for the majority of the founder crops, the data tell us very little about the way the Southwest Asian Neolithic crop “package” was assembled. It remains an open question whether these crops were taken into cultivation together in the same place, or whether different crops were domesticated (perhaps each only once) in different places. Yet once the technology of crop cultivation was invented, and the domesticated forms of wheat’s, barley, pulses and flax first appeared, they probably spread over the Near Eastern arc in a manner similar to the way in which they later spread into Europe: not by additional domestications in each species but by diffusion of the already existing domesticates. **In other words, soon after the first non-shattering and easily germinating cereals, pulses and flax appeared, their superior performance under cultivation became decisive and there was no need for repeated domestication of the wild progenitors.** Moreover, because this new system of crop cultivation expanded rapidly, there was little chance for grain agriculture to develop independently elsewhere in Southwest Asia or Europe. This is apparently true not only for the Neolithic founder crops but also for the first Southwest Asian domesticated herd animals: sheep and goat (cf. Uerpmann, Legge and Hole in Chs 12, 13 and 14 in this volume).

From *The Origins and Spread of Agriculture and Pasturalism in Eurasia* edited by David Harris

Spread of Agriculture from the Near East – Current Views



From *Malta before History* – Forwarded by Colin Renfrew

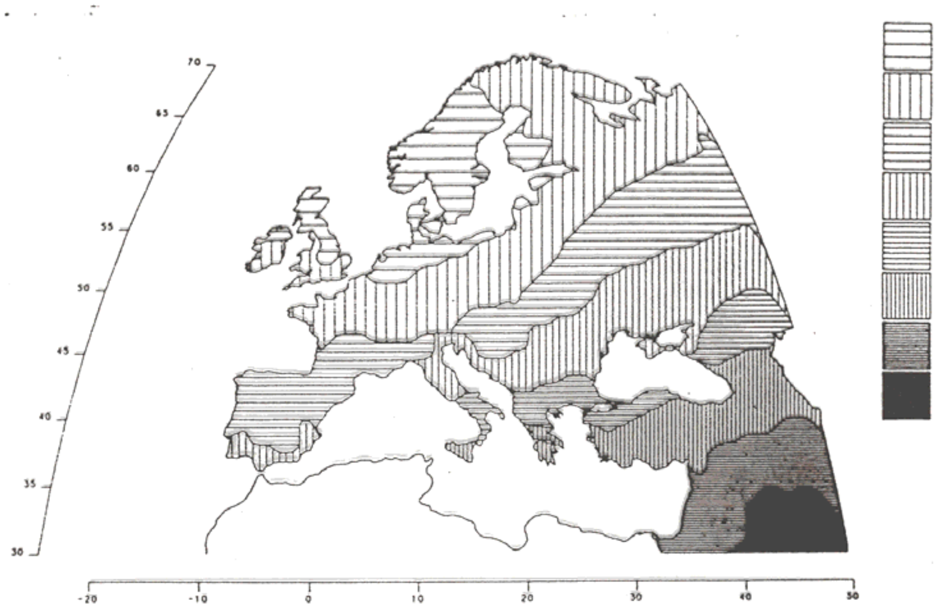
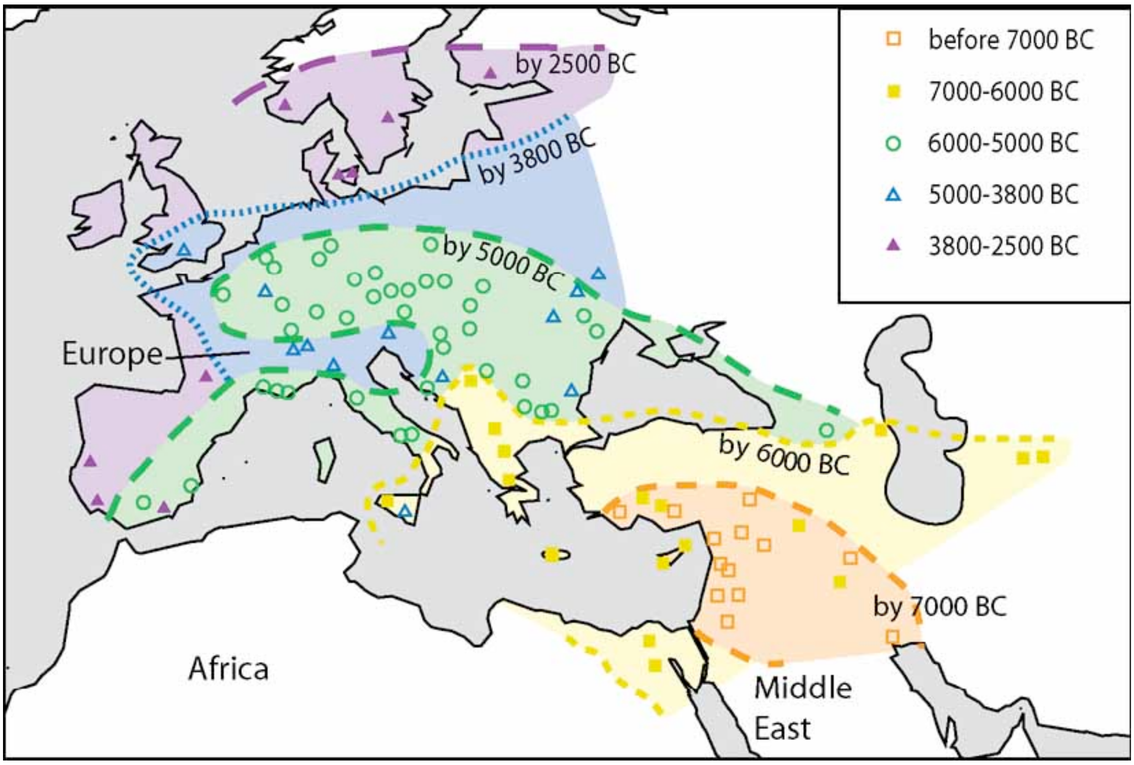


Figure 5.4 Molecular genetic evidence for the spread of farming into Europe. The map illustrates the first principal component (PC) of molecular genetic variation in Europe, suggesting demic diffusion from Anatolia, probably associated with the spread of farming. The range between the maximum and minimum values of the PC has been divided into eight equal classes, which are indicated by different intensities of shading. The direction of increase of PC values is arbitrary. (From Cavalli-Sforza et al. 1994: 292; reproduced by permission of the authors and Princeton University Press.)

From the *Origins and Spread of Agriculture and Pastoralism in Eurasia* – Ed. David Harris

Domestication of Plants by Lloyd Pye - 2006

Domestication of plants and animals supposedly began as early as 11,000 years ago in the Fertile Crescent of the Near East (light brown area below). Two thousand years later it began in the New World in the highlands of Central America. This is puzzling because crops grown at altitude are much more labour intensive than in valleys. Also the technological leap from wild grains and grasses to useful foodstuffs has not been duplicated by modern botanists. No useful domesticated plants have been created for the last 5,000 years. So how did Stone Age hunter-gatherers living in mountains decide to miraculously converting wild grains and grasses into edible foodstuffs? As with megalithic structures, it seems highly improbable that ordinary humans could have done it.



Geological Hazards of Lebanon by C.D. Walley

A main concern in Lebanon is that of earthquakes as the area is in an active region. Beirut has been destroyed many times by earthquakes and tsunami (*tidal waves*), most notably in 551 AD. Lesser quakes have occurred since. Even small earthquakes may have triggered landslides. A subtler hazard is that of soil erosion. The steep slopes of Lebanon and the high rainfall means that the soils, in many cases the product of thousands of years of formation, are easily eroded. These soils are not being replaced. Related to this are widespread landslides on various scales due to the steep slopes, wet winters and de-forestation. Geology has largely controlled the history of Lebanon. It has given the region its fertility with the high rainfall and excellent springs. However, this is localised, demands hard work to farm due to the steep slopes, and is easily destroyed. As a result wealth based on agriculture has not proved easy. Many Lebanese have traditionally migrated or gone into commerce. – **Project Note** - Deposits of sediment and erosion by water will create both problems and opportunities with the geophysical surveys and sediment core sampling required by the proposed research.

Methodology

As far as we know there has not been a full archaeological or environmental survey carried out on the site in the last 36 years. Dissertation research carried out by Lee Marfoe in 1979, who until his death in 2003 was the assistant professor at John Hopkins University and the Oriental Institute/NELC, was concerned with the long-term development of settlement, population and society in the Beqaa Plateau in the Lebanon. We hope that our initial survey, together with available works by others, will encourage a wide range of contributions to add significantly to the knowledge and understanding of site.

Ordered *protohistoric* agricultural people became evident in the archaeological record at about 10,000 BC, in the Near and Middle East, and comparative research by Zohary 1999, Hillman 1996, Postgate 1994, Maisels 1994, 1993, Fagan 1990, Wenke 1990, Clutton-Brock et al 1989, Nissen 1988, Clark 1977 confirms this, indicating the tenacity of human populations to occupy and settle in post-glacial environments (*Holocene*).

Those Involved in the Project

Edmund Marriage – Principal of the Patrick Foundation – ARICS, MRAC - Qualified in Agriculture and Land Agency at the Royal Agricultural College Cirencester and Wye College, London University. Founder of British Wildlife Management, Work Groups for Wildlife (Rehabilitation), the Quality Driving and Shooting Initiatives, with a career in countryside and wildlife management, property, fund management, and independent research.

Barbara Joy O’Brien - Honorary fellow of the Royal Geographic Society in London, award winning poet and co-author and widow of Christian O'Brien.

Desmond Astley-Cooper – Consultant and historian on the Lebanon and the Arab World.

Steve Gagne – Consultant, author, teacher and specialist on issues relating to the origins of agriculture, agricultural genetics, diet and food, early civilisations and the production of food.

Laurence Gardner – Consultant, genealogist, constitutional historian, Fellow of the Society of Antiquaries (Scotland), former Presidential Attaché to the European Council of Princes, best selling author, and historical and scientific research specialist.

Robert Armstrong – Film and documentary maker and director of the Holistic Channel. Partner in Gaia Communications.

Karl Guildford – Information Technology and Public Relations.

Geoff Ward – Media consultant, author and journalist.

Paul Bedson – Project Manager and Archaeological coordinator and Researcher for the Kharsag Research Project

Assistance

British Council in the Lebanon
Directorate of Antiquities, Ministry of Culture, Lebanon
University of Balamand, Tripoli, Lebanon
Department of History and Archaeology, American University in Beirut
University College London
Cambridge University
Oxford University
British Museum

Personal Profiles

Christian O'Brien read Natural Sciences at Christ's College, Cambridge and spent many years as an exploration geologist in Iran, in Canada, and in other parts of the world. In 1936 he was involved in the discovery of the Tchoga Zambil Ziggurat in Southern Iran. In 1970 he retired as the head of the international oil operating companies in Iran, and was awarded a CBE in 1971 for his work. He then devoted his retirement to researching the many enigmas of prehistory, surveying and discovering the Integrated Astronomical Observatory Line A - Hatfield Forest to Wandlebury, near Cambridge, and the Bodmin Moor Astronomical Complex in Cornwall, England, both dated to c. 2,500 BC. He established the overwhelming mathematical probability and proof that these structures were designed for complex observational astronomy and went on to discover from Early Sumerian and other ancient texts, the origin of their builders, and the founders of agriculture and civilisation in the Near East c. 9,500 BC. The Path of Light provides the remarkable supporting evidence from the long lost recorded words of Jesus, rediscovered within the Egyptian Coptic records of the early Christian Church. Christian O'Brien died in February 2001 aged 87.

Barbara Joy O'Brien has played a full part in the research, with a special interest in the history of religion. She is also a poet with several publications and awards to her credit.

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Location of Rachaiya and Site of Kharsag, known later as the Garden of Eden, with the proximity of Tyre, Sidon, Damascus and Baalbek

Supporting Documents on the Origins of Agriculture and Global Catastrophe

Origins of Agriculture Index

From Plato’s Dialogue *The Critias* c. 355 BC

Once Upon a Time

Once upon a time the Gods divided up the Earth between them - not in the course of a quarrel; for it would be quite wrong to think that the Gods do not know what is appropriate to them, or that, knowing it, they would want to annex what property belongs to others. Each gladly received his just allocation, and settled his territories; and having done so they proceeded to look after us, their creatures and children, as shepherds look after their flocks. They did not use physical means of control like shepherds who direct their flocks with blows, but brought their influence to bear on the creature's most sensitive part, using persuasion as a steersman uses the helm, to direct the mind as they saw fit and so guide the whole moral creature. The various Gods, then, administered the various regions, which had been allotted to them. But Hephaestos and Athene, who shared as brother and sister a common character, and pursued the same ends in their love of knowledge and skill, were allotted this land of ours as their joint sphere and as a suitable and natural home for excellence and wisdom. They produced a native race of good men and gave them suitable political arrangements. Their names have been preserved, but what they did has been forgotten because of the destruction of their successors and the long lapse of time. For as we said before, the survivors of this destruction were an unlettered mountain race, who had just heard the names of the rulers of the land but knew little of their achievements. They were glad enough to give their names to their own children, but they knew nothing of the virtues and institutions of their predecessors, except for a few hazy reports; for many generations they and their children were short of bare necessities, and their minds and thoughts were occupied with providing for them, to the neglect of their earlier history and tradition. For an interest in the past and historical research came only when communities had leisure and when men were already provided with the necessities of life. That is how the names but not the achievements of these early generations came to be preserved.

The Origin of Agriculture by Steve Gagné - 2006

Theories of Plant Domestication

In the distant past, a few *Homo sapiens* made a decision that altered the biological, psychological, and spiritual essence of humanity. That decision was to work in partnership with the land through the domestication of plants and animals. Researchers from numerous scientific disciplines have made great strides in attempting to explain the origin of agriculture. However, exactly when, how, and why this happened at all is still very much a scientific mystery.

The information gleaned from extensive research in this multi-disciplinary pursuit has offered a range of insights into how humans adapt to social and environmental pressures, develop patterns of health and disease, and structure sophisticated forms of culture and civilization. These ideas about agricultural origin are rooted in the *cultural evolution* theory, which today serves as the basis upon which academic beliefs and ideas are formed and supported by scientific research and modern technology.

Much of this research is based on fossil records, comprised of bones, seeds, and stone tools gathered from caves, hearths, and wherever ancient settlements can be uncovered. These records help us to formulate possible circumstances for addressing the following questions:

1. Where and when were plants first cultivated and identifiably domesticated?
2. What evidence is there to support current theories, and/or what alternative interpretations can we draw from the available evidence?

The Cultural Evolution Theory, Methodology and the Fertile Crescent

The earliest domestication of plants may have originated in the Near East's "Fertile Crescent," an area that stretches from the eastern shore of the Mediterranean Sea and curves around like a quarter moon to the Persian Gulf.

For nearly two centuries, explorers and scientists from different parts of the world have traversed this area in search of the origins of civilization and agriculture. Einkorn and emmer wheat, barley and lentils, goats and sheep all purportedly originated here between 5,000 and 10,000 years ago. Religious texts, legends, and archeological discoveries document the antiquities of Sumer, Ur, Babylon and other thriving cultural centers. This part of the Near East housed a literal treasure trove of artifacts, bones, and seeds that would be used to substantiate the cultural evolution theory. This archeological evidence has helped create a consensus that has become the basis of today's textbooks on ancient history.

The most thoroughly researched area of the world for the advent of civilization, the Fertile Crescent, is held today as the model to which all other such research sites throughout the world are compared. The Fertile Crescent, goes the theory, is where it all began—agriculture, civilization, all of it. Indeed, this "cradle of civilization" idea is so entrenched a part of historical orthodoxy that its axiomatic status has served to discredit those pieces of evidence that seem to challenge it.

This sort of fitting fact to theory is not new in scientific methodology. Archeological and anthropological researchers commonly revise initial testing results for findings; this is a normal part of scientific procedure when deemed necessary. For example, South and Central America are still termed “New World” countries, the underlying assumption being that their development must postdate that in the Near East.

However, increasing amounts of controversial data are being found both in the Americans and in parts of Asia. Such evidence is tested with a variety of technologies, including accelerator mass spectrometry (AMS), which is in essence an upgraded form of radiocarbon dating.

AMS can accurately date samples as small as a single grain while detecting and reducing errors from fossil displacement. This can be especially useful when a sample (say, of bone or seed) has a different date than that of the strata. However, even with the latest technology, much of the seed remains found are so severely carbonized or decomposed as to make it extremely difficult to determine whether a sample is wild or domestic.

Carbonized seed remains are a common source of agricultural evidence. The process of carbonization occurs when organic compounds are subjected to high temperatures and converted into charcoal. While this process does preserve remains for reliable analysis as to composition, it also causes morphological changes that can make it difficult to determine wild varieties from their domestic counterparts. Among grass seeds, there is also the problem of trying to determine the relationship, if any, between the wild grasses (emmer, einkorn, and barley) of 10,000 years ago to those of the present. Wild stands still grow throughout the Fertile Crescent and beyond.

The Independent Location Theory

While ancient plant remains have been extensively studied in the Near East, such is not the case in the “New World.” Plant domestication research in Mexico and South America involves about a half dozen cave sites.

In Mexico, samples of squash seeds and beans dating around 7,000 to 9,000 BP (“before present,” meaning before the radiocarbon baseline of 1950)1 have been found in the deepest strata in some of these caves. Domestic squash seeds found in a cave at Oaxaca, for example, were dated at 9790 BP—the oldest date of any domestic plant species found in the New World. Testing was based on dating a charcoal sample found next to the seeds; because of the extreme antiquity of the date, the seeds’ age was immediately cast into question. It was suggested that the seed samples had somehow been displaced downward from the upper level of the cave; or alternatively, that the charcoal sample had somehow been displaced upward from the deeper layer.2 Both explanations are possible, yet one cannot help but wonder why experts feel compelled to resort to such elaborate reasoning when the discoveries occur in a location so far removed from the established Near East cradle.

The Mexican sites, furthermore, are not alone in this. The people of other ancient civilizations from the Peruvian highlands, China’s Yangtze River valley, and parts of

Egypt, India, and Papua New Guinea, all may also have domesticated plants dating back as far as those of the Fertile Crescent. However, the excavations for evidence of agriculture at these locations are still in their infancy, and cannot yet be compared to the extensive findings in the Fertile Crescent.

Another part of the world with a long history of agriculture is South Asia, where a wide variety of annual and perennial forms of “wild” or “free living” rice survives today without human intervention. Not too many years ago, domestic rice was thought to have a history of between 1,000 and 2,000 years; current findings have pushed its origin back much further. The recent discovery of a handful of rice, found in the village of Sorori in central Korea and dating back 15,000 years, strongly suggests that an agricultural practice here coincided with or even preceded that of the Fertile Crescent—where agriculture is still held to have originated.

The age [of the Sororian rice] challenges the accepted view that rice cultivation originated in China about 12,000 years ago. . . .The region in central Korea where the grains were found is one of the most important sites for understanding the development of Stone Age man in Asia.3

After thousands of years of cultivation, it is difficult to establish the identity of the original wild progenitor of domestic rice. Researchers struggle with whether present “free living” rice is truly wild, a cultivated escapee, or something between: cross-pollination, genetic exchange, expanding landscapes, and shrinking natural habitats have distorted genetic qualities between wild and domestic species. “Weedy” forms of rice have also evolved over time, escaping into unmanaged natural habitats, flourishing at the edges of agricultural landscapes, and exchanging genetic material with both wild and cultivated varieties.

Even as they wrestle with the problem of potential multiple domestication sites, researchers are also faced with this paradox of the origins of agriculture: Why did hunter-gathers begin domestication of plants in areas with ample resources of wild foods? Thus, experts today still cannot state conclusively where plants were first domesticated and agriculture began—and the very hypothesis that it began because of hunter-gatherers’ need for a new food source is under challenge as well.

Classification, Morphology, and Genetic Testing

When determining whether a plant should be classified as domestic, scientists look for large and fast-sprouting seeds, glume (grain hull) adherence, and strong *rachises* (the part of the grain that attaches the seed to the stalk). These traits are considered markers of domestication because, since they are naturally selected against, in wild species, they could evolve only under cultivation.

Large seed size, for example, is usually considered a marker showing an adaptive response to selective pressures relating to domestication. The hunter-gatherer’s deliberate planting of slightly larger, pre-selected seeds from wild stands into seedbeds rather than into the plant’s natural wild habitat is believed to eventually cause morphological changes in the plants, resulting in larger, domestic-type seeds. By selecting wild mutant seeds with thinner glumes and stronger rachises, early hunter-gatherers were able to build up a seed supply of mutant seeds from wild stands over time. It is from this supply of stored mutant seeds that domestic cereals are said to have originated.

It is important to know that, even with the multiple scientific disciplines used to study agricultural origin, the sources of evidence vary considerably in reliability. The three important founder grains from the Fertile Crescent—emmer wheat, einkorn wheat, and barley—are the earliest examples known to be located near their wild relatives. There are several species growing today in the same area that are viewed as possibly being the original ancestors of these domestics.

However, after intensive study of morphologies and genetics, including analyses of plant proteins and interfertility testing, we are often still perplexed by a wild progenitor to which the domestic species appears morphologically identical *but with which it has no genetic compatibility.* To illustrate this "looks can be deceiving" aspect, Daniel Zohary states:

A special case of species diversity is provided by "sibling species," that is, taxa so similar morphologically that it is very difficult—or even impossible—to distinguish between them by their appearance; yet, crossing experiments and cytogenetic tests reveal that they are already effectively separated from one another by reproductive isolation barriers such as cross-incompatibility, hybrid inviability, or hybrid sterility.4

A well-known example of sibling-species relations is that of wild and domestic emmer wheat. *Triticum araraticum,* one species of wild wheat, is morphologically indistinguishable from domestic emmer wheat. However, all attempts to cross breed the two have failed, thus proving that the former was not in fact the progenitor of the latter. Furthermore, a true ancestor, morphologically different from emmer wheat *yet with identical chromosomes,* was found and successfully interbred, thus linking it credibly to emmer as a potential wild progenitor.

Wild progenitors used to be classified as separate species from domestics but are now ranked along with the domestics as a separate subspecies. For example, domestic emmer, *Triticum turgidum,* is the subspecies *dicoccum.* Its suggested wild ancestor, once called *Triticum dicoccoides,* is now classified as *Triticum turgidum dicoccoides.* What are the most obvious differences between them? The domestic grain somehow got larger, and the rachis got tougher and less brittle.

But are these variations, together with the fact that interbreeding was successfully accomplished under laboratory conditions, enough to identify *Triticum dicoccoides* as the wild ancestor of domestic *Triticum turgidum?* Or is there a danger here of leaping to simplistic conclusions?

We must remember that numerous factors, such as changes in climate or animal and human intervention, have influenced genetic variations and diversification among the wild progenitors over thousands of years. While it is generally believed that the wild progenitors of most cultivated plants have been satisfactorily identified, many researchers recognize the need for more data.

The simple identification of a morphological change does not, in itself, constitute adequate documentation of a plant species having been brought under domestication. Linkage must be provided between the observed morphological change and a set of causal behavior patterns. It is not enough simply to document phenotypic change. It is also necessary to explain why such change appears in response to a newly created environment of domestication.5

The example of wild and domestic emmer, *Triticum turgidum,* may fit most additional criteria for domestication, being that both the wild and domestic emmer could successfully interbreed and had identical chromosomes. Yet is it not possible that the putative wild ancestor of emmer could in fact have once been a cultivated escapee itself, one which then adapted to a wild environment over thousands of years?

Another example is the fragments of emmer wheat dated 9,500 BP from the southwestern tip of the Fertile Crescent at Jericho. Evidence as to whether the fragments are wild or domestic is still inconclusive. Other samples of emmer dated 9,700 BP and found just north of Jericho near Damascus, however, are domestic.6 Keeping in mind these specimens are thousands of years old and have been through extreme changes, is it not possible that, again, what are thought to be wild samples of emmer are simply genetically altered cultivars, that is, a once-cultivated subspecies that has since run wild?

In order to consider this possibility, we must reexamine the common assumptions about our earliest agriculture origins: could these “origins” in fact be examples of *re-emergence* from previous cycles of civilizations?

Without giving this consideration due weight, we are left with the mysterious appearance of numerous species of grasses, some of which share similarities to cultivated grain species both genetically and morphologically. One could argue that the dates of our examples fit the conventional time line (10,000 years for domestication), yet these are only a few examples of what has been found.

The recent and totally unexpected find of several grains of morphologically domestic emmer wheat at the Palestinian site of Nahal Oren also raises the possibility that grain was under cultivation as early as 14,000 BC.7

An archeological site called Ohalo II in Israel reveals 19,000 well-preserved grass grains. Among the specimens are pieces of wheat and barley dating 23,000 years ago8—about 7,000 years older than the Nahal Oren samples cited above! In light of findings such as these, it seems quite possible that many wild progenitors could be cultivars from a civilization or civilizations predating the orthodox theory for agricultural origin.

What are often called wild progenitors of domestic grasses may be suspect for other reasons. Several other sites in the Fertile Crescent have combined specimens of wild and domestic emmer, einkorn, and barley. The mix of wild progenitor and domestic is often interpreted as signs of early cultivation from wild to domestic. However, these may simply be examples of separate food stores for ruminants and humans. And while animal domestication does not happen until around 8,000 BC, according to orthodox timelines, it is still possible that a sufficient condition of pre-animal husbandry existed to account for wild grass harvests.

Cultivars and Wild-Growing Domestics

Einkorn wheat represents another perplexing example of early wild and domestic plant research.

The present-day northern portion of the Fertile Crescent yields broad bands of wild einkorn, yet research has designated the wild progenitor of domesticated einkorn as being restricted to a small region near the Karacadag mountains in southeast Turkey, far removed from the northern broad bands of wild einkorn. If the northern stands of wild einkorn are not the progenitors of domestic einkorn, then what are they? Could they be a once-domestic species that ran wild at some distant period of prehistory, eventually having adapted to their present environment?

It is believed that hunter-gatherers living in permanent settlements were harvesting a species of wild einkorn 11,000 year ago along the Euphrates River.9 If hunter-gatherers were already harvesting by that time, perhaps they had been harvesting it for thousands of years before that time. What species of wild einkorn was this? Was it the progenitor of domestic einkorn, the species found in the Karacadag mountain region? Or was it another species, like the one representing the broad bands of the northern regions, a species that never became domesticated?

For that matter, what about the modern wild einkorn found in the area comprised of Israel, Lebanon, southwest Syria and Jordan? This Palestinian variety has large seeds, often larger than those of domestic wheat.10 Could these, too, be feral crops that were once cultivated in antiquity and have now adapted to the regions? Large seed size is considered a marker of domestication—yet this wild species has seeds larger than most domestic species.

As long as we are focused on the Fertile Crescent, let us consider the origin and introduction of barley, the third founder crop of this region.

Two types of domestic barley have been recovered here from early settlements. It has been suggested that hunter-gatherers harvested wild barley before domesticating two-rowed barley, followed shortly afterwards by six-rowed barley. Between these two types, two-rowed barley shows more of the wild barley characteristics; both two and six-rowed domestics have been found together in early settlements.

Wild barley, like wild einkorn and emmer, develops brittle rachises for dispersal when fully ripened. These rachises are segmented so individual spikelets and grains can be shed from top to bottom when ripe. Only about five to ten percent of the rachises are semi-tough in wild barley, and this small percentage represents the average amount of seed that is held to the stalk at the time of maturity.

According to theory, early hunter-gatherers selectively chose seeds from these specific stalks at an early stage before ripening; they did so because even if the five to ten percent of rachises held their seeds, at maturity they would immediately fall to the ground when pulled by the hands of humans. The hunter-gatherers (so goes the hypothesis) would have saved these partially ripened seeds for planting stock.

In order to be motivated to do this, these hunter-gatherers would have had to believe that these wild grass seeds, after being planted in homemade seedbeds, would produce larger, more stable seeds and larger yields after a few generations. Are we to assume that they knew what the outcome would be before they tried it? And are we to further believe that these wild grasses could genetically morph into domesticates through simple cultivation and planting techniques, when it has still not been demonstrated today, nor is there any evidence that such a demonstration is possible, that a wild, mutated seed can be transformed into a domesticate through cultivation in a foreign seedbed?

As with emmer and einkorn wheat, it is not uncommon to find wild and domesticated barley fragments together in archeological sites. In areas of the Fertile Crescent, fully cultivated emmer wheat and two-rowed barley have been recovered from ancient sites, accompanied by wild-weed einkorn, ryegrass, and other weeds considered pre-adapted to cultivation. It is still highly questionable whether or not the selective pressures imposed on wild grasses, as suggested by the cultural evolution model, caused the morphological changes that resulted in domesticated varieties of cereals.

Early hunter-gatherers were just as highly attuned to their food sources as modern day hunter-gatherers. With hundreds of thousands of years' experience in finding food, knowing which plants to eat, observing animals in their natural habitats, and incorporating some of these habitats into daily life, it is difficult to believe that these people, who hunted and ate ruminants, were ignorant about the wild grasses eaten by these animals. After all, countless generations of hunter-gatherers used wild grasses for bedding, weaving baskets, and fuel. Could these tough, brittle, wild grains really have been food for these early people, as suggested by some leading specialists?

While there is plenty of evidence for wild grain harvest, there is actually little evidence supporting human consumption. Evidence for the latter is restricted to a few Paleo feces found in caves. The location and lack of evidence would suggest that a famine or climatic disturbance might have been in effect, causing the humans to hole up in the caves until it was safe to venture outside. If this were the case, the usual foods may have become scarce, causing those people to eat whatever they could find. (We must also consider the possibility that Paleolithic peoples were able to process wild grasses, rendering them digestible and fit for human consumption, without the pottery to soak the grains or cook them, but this possibility is quite slim.)

Proteins can be useful genetic markers for distinguishing wild ancestors from domestics. Shared genetic characteristics, if found, can reveal the wild progenitor of the domestic. However, this methodology is difficult to apply if the wild progenitor no longer exists, as is often the case, leaving us with hypothetical ancestors that must have been the progenitors of existing wild species.

Cross-pollination, genetic exchange, and environmental changes have blurred the lines between wild and domestic varieties over thousands of years. Along the way, opportunistic weeds of many varieties have joined the mix and contributed to new gene pools. In essence, it becomes increasingly difficult to determine whether the domestics came from weeds or the weeds came from the domestics.

A good case in point is *teosinte,* a diverse group of wild grasses native to Mexico, Guatemala, and Honduras.

Teosinte is suspected to contain the progenitor of domestic maize because the two are genetically compatible and successfully crossbreed through repeated hybridization in fields. They differ, however, in the morphology of the female ear. The few small seeds of teosinte husks look nothing like the large, fully seeded ears of maize. Teosinte has numerous branching stalks, each culminating in a few small, shattering seed spikes. Corn, (maize) on the other hand, is a single stalk containing an ear of tightly arranged, rowed seeds that cannot disperse naturally.

Because of its unique makeup, some experts believe teosinte to be a descendant of domestic maize; most agronomy books and relevant literature see it the other way around, and present teosinte as the wild ancestor of maize. Yet regardless of which direction one subscribes to, teosinte-to-maize or maize-to-teosinte, how such an extraordinary transformation could have taken place in the remote past at all is an inexplicable mystery.

Many varieties and sizes of domesticated corn have been found in deep levels of caves throughout Mexico, revealing the extensive knowledge of plant genetics and breeding techniques among early inhabitants of Mexico and Peru. A comparison of proteins between teosinte and domestic maize reveals some similarities, and no species of wild maize has yet been found. Some teosinte types have been categorized as subspecies, yet there are no morphological indications of their transformation into domestic maize.

With all our current technology, it seems reasonable that we should be able to create a domestic species from a wild one in a controlled environment, simulating an early hunter-gathers' planting methods—if that is indeed what happened. What would it take? In addition, if this would prove the prevailing theory of wild mutant seed transformation, why haven't we yet done it?

Identification of chromosomal affinities between wild and domestic crops is another method for finding wild progenitors. If cultivated crops show full homology and interfertility with a wild species from the same genus, then that wild species could be recognized as the ancestor of the crop. This may be misleading, though, because chromosomal affinity does not necessarily determine ancestry. This is especially true when there are wide variations in morphology, as is typical with many grain progenitors and their domesticated offspring.

An obvious advantage of domestication traits is that they evolved only under cultivation and are strongly selected against and absent in the wild.11

If this is true, it should be easy to reverse the process and produce wild, "shattering" crops from domestics once the specific gene sequence is found. ("Shattering" crops are those wild forms whose seeds drop to the ground upon ripening, rather than adhering to their stalks, as do the seeds of domestics.)

Crosses between wild progenitors and the cultivars have shown that this shift is brought about by a recessive mutation in one major gene or (more rarely) by a joint effort of two such genes. In all these crops, breeders have also performed many intra-crop crosses (between cultivars). Except for barley, none of these within-crop crosses has been reported to produce wild-type brittle or dehiscent…12

It would appear that our ancestors were able to “tweak” that single gene from wild grasses so that it could not be reversed. Only domestic barley, with its two independent recessive genes, has successfully produced wild type, brittle grains and these are still different from the “wild species.”

Aside from wild chenopod pseudo-cereals that shed their seeds in a couple of days at maturity and can be husked by simple rubbing and winnowing, the idea of pre-agricultural peoples regularly consuming wild grasses (progenitors of einkorn, emmer, barley, rye and spelt) as promoted by some researchers may simply be an attempt to promote and maintain the cultural evolution theory as applied to plant domestication. The premise that Paleolithic humans ate wild grasses that may have led to the eventual domestication of the wild species also supports this gradual-step theory. This is not unlike the theory that seed plant cultivation followed other vegetable plants. Evidence for hunter-gatherers cultivating propagated vegetables before seeds is lacking, but the theory of a gradual-step process comfortably fits the current paradigm.

Could these grass species of einkorn, barley, and emmer, so often suggested as the wild progenitors of their modern day domesticates, be something other than wild?

Based on the hypothesis that over thousands of years a plant could experience numerous morphological changes, is it not possible for a once-domesticated plant to revert to some semblance of a wild version? We have already mentioned how it has been suggested that wild grass species, once cultivated, could morphologically transform within 300 years when transplanted into seedbeds. An example of this morphological change could appear as brittle rachises becoming “semi-tough” enough to be identified as cultivated.

While this may be possible, it raises another question: could other important markers (thinner glumes, larger seeds, greater adaptation to climate and soils, resistance to diseases and pests, etc.) that resulted from selection pressures and were found in domestic species also have morphed along with the rachises, or did some of these traits occur earlier and others later?

Some of these developments are major adjustments to a wild grass species involving genetic manipulation at some level in the process, and there is no indication these markers, not to mention increased nutrition and faster sprouting time, could have occurred consecutively or simultaneously over a few hundred years by being planted in seedbeds, even if the seeds were carefully selected, wild, mutant seeds. Granted, some hunter-gatherers from the epi-Paleolithic period knew a great deal about the growing cycles of plants (and even about seed planting and cultivation to some degree), but the genetic manipulation of a wild grass species into a productive, nutritious offspring is something quite extraordinary.

The question thus remains: who were these people and how did they know how to manipulate plants at the genetic level? Evidence at many archeological sites indicates that the knowledge for plant domestication was already there and was not an evolutionary process.

The idea that many of these “wild” species of cereals are actually cultivars is a realistic consideration. Edgar Anderson addresses this important issue in his book *Plants, Life and Man.* He suggests that we consider previous cycles of cultivation when examining what we think are “wild relatives” of our basic food crops.

This is indeed a consideration for researchers, as it is now well known that some species were in fact cultivated before the time they were once thought to have originated. Corrections in origination dates, along with genetic mixing of wild and domestic crops, environmental pressures, and time can realistically contribute to de-evolution of a domestic species.

An example Anderson gives, of how one might encounter in a jungle a smaller version of a cultivated fruit, giving the first impression that it is a wild relative of the domestic version, is an all-too-common occurrence. While it is possible that what you are witnessing is a wild food, it has been repeatedly shown that many of these wild-appearing foods are remnants of refuse heaps, a seed spit out of a hunter’s mouth after finishing his lunch from home where he cultivated the fruit, or a garden escapee. I have personally encountered wild-growing samples of cacao, coffee, papaya, avocado and other familiar varieties while in the remote jungles, far from any agricultural base, of South and Central America.

Anderson also points out the great variations among wild-growing domestic avocados in Central America. Such variations appear to an even greater extent among avocados presently growing under managed cultivation. He brings to attention the fact that apples appear in pastures, forests and fields throughout the country, yet none were here in America when the first European colonists arrived. Apples are likely from Asia, where various species are native. We do not know how much of a connection the wild-growing apples have with previous cycles of cultivation, but they are, without question, examples of cultivated apples that have run wild. The same is likely true for many “wild” relatives of cereal grains. At my home in Vermont, we have three apple trees and two pear trees on our land. We were the first on record to build on this particular spot yet, although we did not plant the trees, they are not wild fruit trees.

Wild weeds are highly successful plants that can easily overcome a disturbed habitat, as evidenced in most gardens by weed races commonly found among domestic annuals and perennials. Early hunter-gatherers, like their modern counterparts, are known for having collected and stored a variety of wild seeds. Most of these seeds are known for specific uses, such as food or medicine. But what evidence is there that pre-agricultural peoples actually used wild grasses for their own consumption?

Jack Harlan, an authority on agricultural origins, was able to prove that a small group of people, within a period of just three weeks, could harvest by hand enough wild grain to sustain themselves for one year. To some, this classic study suggests that our ancestors did the same. However, it does not prove that they did nor answer why they did it if they did. Were harvests for pre-domestic ruminant consumption, or for some other highly useful purpose?

Recently, a team of international scientists found fields of wild einkorn wheat in the Near East that provides the closest genetic match to domestic einkorn. By obtaining DNA samples of 68 separate lines of cultivated einkorn, all samples were found to be closely related. DNA profiles were also taken from 261 separate populations of wild einkorn in the same area. Of the 261 wild samples, 19 from the volcanic region of the Karacadag Mountains in Turkey were distinct from the other wild einkorn lines. Further analysis showed that 11 of the 19 samples had a close phylogenetic similarity to the cultivated einkorn. As a result, these 11 wild samples could be identified as modern descendants of the wild progenitor for einkorn wheat.13

Note that these wild samples were identified not as wild progenitors but as *descendants* of a wild progenitor, based on their similarity to the domestics. But how can they credibly be seen as descendants of a wild progenitor if we do not know where or what the wild progenitor is? Phrases such as “similar to,” “related to,” “descendants of,” and so on imply a link to some long-lost original strain of wild grass that, through a series of mutations, became the domestic grain we know today. Yet, in many cases, there is still no actual progenitor.

Evidence does strongly suggest an area for the earliest domestication of einkorn wheat, but, like so many other domestic plants, the wild progenitor remains elusive. What we have are suspected descendants of these elusive wild progenitors, much like the situation in the study of human origin with its search for the elusive “missing link.”

The Process of Cultivation and Other Theories

The presence of grinding stones, sickle blades, and storage structures in many early hunter-gatherer sites indicates a long reliance on wild seeded plants, particularly wild grasses. Refinement of harvesting and cultivation techniques by selectively choosing plumper seeds eventually transformed fields of grain into crops with thinner husks, stronger and less brittle rachises, stalks with increased seed clusters, larger and more dependable yields after harvesting and threshing, increased nutritional value, and spare seed for storage. These newly cultivated crops could have eventually replaced their wild counterparts in importance. After much trial and error, these once-wild grasses, first through careful selection of suitable wild seeds and later through repetitive cycles of sowing, reaping and harvesting, became domestic crops fully dependent on human intervention.

Some archeobotanists believe morphological changes, which include changes in size, shape and form, could have taken place anywhere from 100 to 300 years after the first time a seed was planted in a seedbed by early hunter-gatherers. Others believe it may have taken longer, up to 1,000 years. This is an interesting hypothesis that appears to be based on sound evidence, albeit interpreted though the theory of cultural evolution. Nevertheless, it is a hypothesis—not a fact. The evidence is therefore open to interpretation from alternative perspectives as well.

In *Origins and Seed,* Gordon Hillman discusses cultivation as a precursor to domestication and suggests that cultivation in the Jordan Valley could have started as early as 12,000 BC. He further states, “However, detecting the start of cultivation will, as ever, be problematic.” The reasons for this, says Hillman, are that “cultivation prior to domestication can be recognized only from indirect evidence, not from the remains of crops themselves” and “domestication itself is often difficult to detect.” Further influences in the process would include unripe harvesting and genetic infiltration of wild genes from neighboring populations of wild grasses.

Indeed, even with the most rapid domestication, it is inevitable that “modifier genes” would have ensured that the crops continued to contain an admixture of wild forms for many centuries … This effect, combined with the inherent problems of distinguishing wild and domestic cereals from charred remains [archeological records], ensures that detection of domestication in the archaeological record will continue to be extremely difficult.14

So, why cultivate in the first place? Why spend centuries planting something that will not produce the desired result for generations? Furthermore, when the plant finally does reach its full potential its product becomes a causal factor, according to many historians, in both the creation and downfall of civilization. Authority Jack Harlan nicely sums up the scientific position on the question of cultivation:

What does planting and reaping, planting and reaping, that is farming, do to the genetic architecture of annual seed crops? Most of our answers to this and similar questions have been intuitive or simple guesswork.15

Again, while there is no doubt that wild grasses played an important role in the lives of hunter-gatherers, it may not have been for food.

What about those 261 “wild” samples from the Fertile Crescent, only 19 of which have genetic similarities to domestics? Could these be additional examples of cultivars that have morphologically reverted to their present status after running wild some thousands of years ago?

Research has shown that some early hunter-gatherers from the Fertile Crescent practiced what is called *vertical transhumance,* wherein groups of people would seasonally move their campsites from low elevations to higher elevations in the spring to harvest ripening wild grasses and to hunt wild goats and sheep that followed these ripening grasses. If we remove the cultural evolution model as an interpretation for this scenario, we are left with typical pastoralists herding their flocks to ripening grasses. Admittedly, this would be at a time well before they are believed to have had domestic animals—but the truth of the matter is that, as with our inconclusive results concerning plant domestication, we really do not know when animals were first domesticated.

The majority of researchers still either hold to the Fertile Crescent theory or believe that plant domestication began independently in several parts of the world within the last 5,000 to 10,000 years. Both perspectives depend on the cultural evolution theory for their basis. Either orientation posits a long period of experimenting by hunter-gathers with wild grasses and roots predisposed to domestication before agriculture appeared on a large scale.

But is it possible, at least in some of the major areas where agriculture began, that plant domestication did not happen through this evolutionary process of human experimentation? Although it specifically addresses contact between the hunter-gatherers and early farmers of central and northern Europe, the editors of *Last Hunters—First Farmers* offer another suggestion that could easily be applied to any number of other locations where agriculture began:

The origin of agriculture involves only *a very few places in a few brief moments* of time. The spread of agriculture is the primary means through which farming has become the basis of human subsistence. It would seem essential to keep *both colonization and adoption,* and the kinds of evidence and questions that they involve, in mind in any discussion of the transition to agriculture.16

Conclusions

Agricultural origins cannot at present be conclusively proven to have begun close to 10,000 years ago when additional evidence for agriculture extends further back in prehistory. What can be unequivocally stated is that agriculture had already emerged several times in numerous parts of the world in the last 12,000 to 20,000 years, and possibly as early as 50,000 years ago, with the last 6,000 years producing the most evidence for this cultural phenomenon.

New findings challenge the hypothesis that humans first began as hunter-gatherers and later evolved to agriculturists some 10,000 years ago—a hypothesis that at present has no solid basis in proof, yet is readily believed by many.

Genetic manipulation of plants, particularly cereal grains, occurred at some point in prehistory by people who already had the knowledge to do so. These same people created a vital and lasting human food source, no doubt for very specific reasons.

In each of the major areas of the world where plants and animals were domesticated, we find legends, both written and oral, describing the origin of agriculture as a gift of the gods, culture-bearers who taught indigenous peoples agriculture and the sciences of civilization. (I have written about this elsewhere, in an article soon to be posted on my website www.stevegagne.com) Could this possibly be coincidence, the accident of mere imagination?

Our ancestors left us more than bones, seeds, stone tools, priestly cults and ritualistic incantations to exotic gods—they left us examples of extraordinary feats of engineering, architecture and sustainable methods of agriculture. They left us legends, myths, epics, and sagas. Isn't it about time we hear them out?

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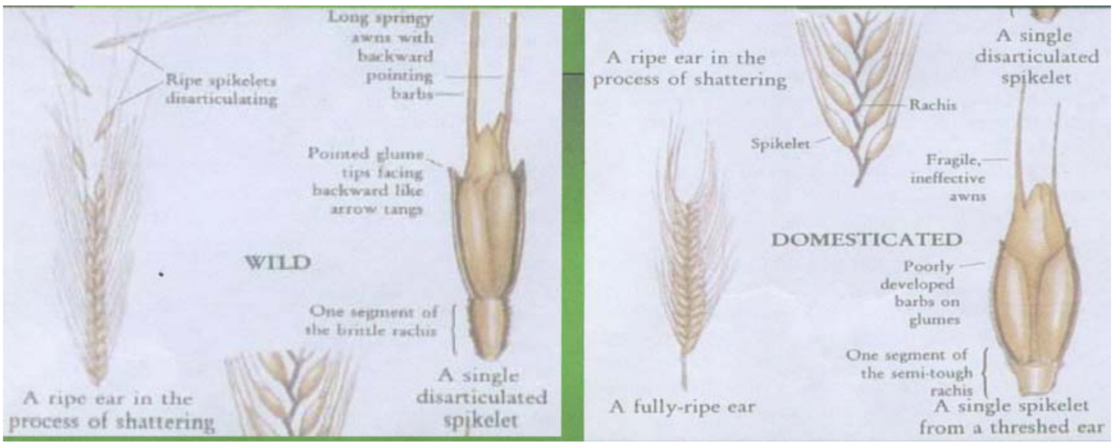
Early Forms of Wheat – Emmer and Einhorn

The miracle of wheat begins with wild emmer and einkorn, early grains that have small, tough seeds that cannot be effectively processed for food, or easily digested by humans. Yet somehow Stone Age *farmers* grasped that if they kept harvesting and culling and replanting the largest of these useless seeds, eventually they would produce larger, softer seeds that could be harvested, processed and digested by progeny of dozens of generations removed from them. Such a high level of selfless dedication to the future is clearly not possible today, so it seems equally unlikely 10,000 years ago.

The Miracle of Rachis and Glumes



Each wheat seed has a husk (glume) connected to its stalk at a joint known as a rachis. Wild rachis and glumes are durable until maturity, when they become too brittle to be harvested. Rachises of domesticated wheat, have been altered to be exactly durable enough to withstand harvesting but also altered to release when threshing. These exact modifications seem entirely too precise to be accidental, and the same occurs in several other wild plants to produce domesticated plants.

From Lloyd Pye www.lloydpye.com

Domestication of the Chickpea required Summer Irrigation and the Scientific Skills available at Kharsag

The press report below features additional evidence to support the fact that the founder domesticated agricultural crops, now being located in the same region and dated around the same time, all required considerable skill and scientific knowledge in the production of the first domesticated seeds. This is also the case in the Domestication of the Fig. – Comment by Golden Age Project.

Chickpeas role in lifting the domesticates mood - Chickpeas were hard to domesticate but had many benefits for early communities.

Norman Hammond Archaeology Correspondent -.*The Daily Telegraph* 2nd July 2007

Chickpeas have become a familiar part of our diet as Mediterranean and Middle Eastern dishes have increased in popularity: hoummos is now a supermarket staple, and Elizabeth David and her successors have brought Spanish *garbanzo* stews and Italian ceci with pasta to the dinner tables of Middle England.

Although *Cicer reticu/atum* formed part of the "founder package" of early crop domesticates in the Middle East about 11,000 years ago, along with wheat, barley, peas, lentils and bitter vetch, it was unique among them in not being wide-spread as a wild plant.

While the others are found more or less from Anatolia to Aghanistan, wild chickpeas are known only from a few locations in southeastern Turkey, although this is the region in which, if anywhere, the first farmers seem to have emerged.

Chickpeas also keep their seeds in the pod, not shattering them like wild peas and lentils, keeping stands of the plant small and localised. As a winter crop it is subject to devastating fungal attacks of Ascochyta blight, and in converting it to a summer crop to avoid this, farmers risk the loss of up to 90 per cent of the yield from water shortage.

In other words, chickpeas are not an easy or obvious domesticate, and their inclusion in the earliest crop package must have had some other reason.

Why "the rare and agronomically problematic chickpea" was chosen, including "the development of a novel agronomic practice, summer cropping, which may involve a considerable loss of the potential yield", lay in its protein content, according to a study by Zohar Kerem and colleagues in the *Journal of Archaeological Science*. They suggest that experimental cultivation by early farmers yielded a seed with a high level of the important amino acid tryptophan.

"Dietary tryptophan determines brain serotonin synthesis, which in turn affects certain brain functions and human behaviour," the investigators say, noting that its effects are perceived by both animal and human consumers. Extraction of the amino acid by microwaving and measurement by re-versed-phase chromatography showed that chickpeas of both the larger Kabuli and the older and smaller Desi cultivated types had more than three times the tryptophan level of wild seeds.

Cultivation yielded a seed with a high level of tryptophan

The nutritional value of the cultivated seeds, measured using standard World Health Organisation criteria, was double that of wild seeds for children, and almost double for adults. "Our results suggest that consuming domesticated chickpea will elevate the levels of tryptophan available for processes other than growth and maintenance, for example bio-synthesis of brain serotonin," the team says, noting that cooking did not affect the amino acid level.

Selection for a high-tryptophan crop such as chickpea "was dependent upon prehistoric humans' ability to recognise naturally occurring variability", meaning that the effects of eating even wild seeds must have been empirically appreciated. Farm animals have been seen to do just this and "diets enriched with tryptophan were recently shown to induce accelerated growth", they say.

Tryptophan is a precursor of serotonin in the brain: more of the former in the diet leads to more of the latter in brain tissue, which in turn may create a well-fed feeling of satiety and at the same time increase ovulation rates in women. Serotonin is also implicated in cognitive ability, so "trytophan availability may affect cognitive performances related to social behaviour and emotional processing, especially under stress. This implicates tryptophan in lowering of aggression and decreased quarrelsomeness in healthy human volunteers," the team reports.

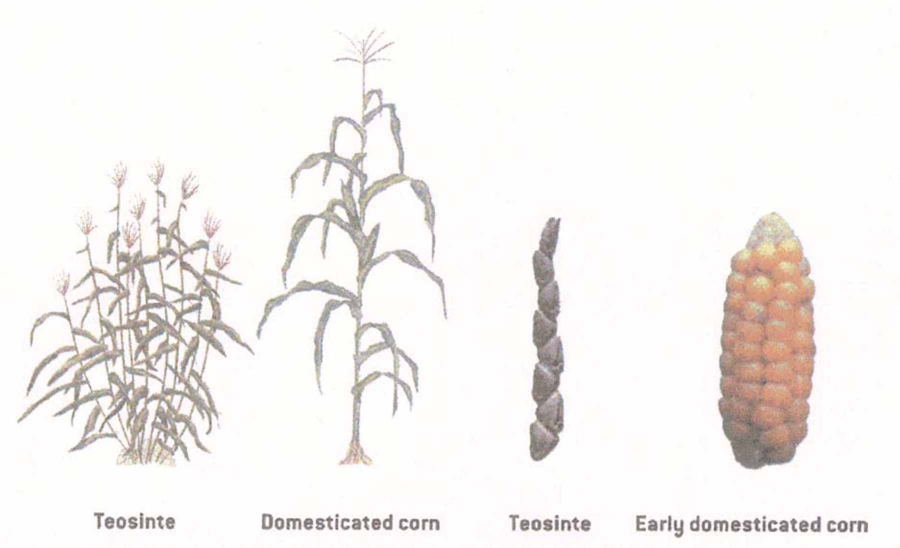
Establishing this must have been a process of trial and error after initial observation of the wild seeds utility, and "the rarity of wild Cicer *reticulatum* and the agronomic difficulties involved in chickpea cropping call for an unorthodox explanation for the motivation to retain chickpea as a crop plant." Cultivation raised the value of the plant enormously as a food source, and its association with higher ovulation rates, more frequent births and better-fed infants would have benefited early communities.

The cognitive benefits of serotonin would have led to more innovative cultural activities and increased self-confidence, the authors surmise. "The choice of chickpea should be looked upon as another step in establishing a new human-environment relationship, in which accumulation of knowledge through complex trial-and-error processes ended up in the adoption of this staple plant."

This research suggests that hoummos, with olive oil and sesame paste, as well as chickpeas, seems to be a dish good for the body, the mind, and one's sense of wellbeing.

Journal of Archaeological Science 34: 1289-93

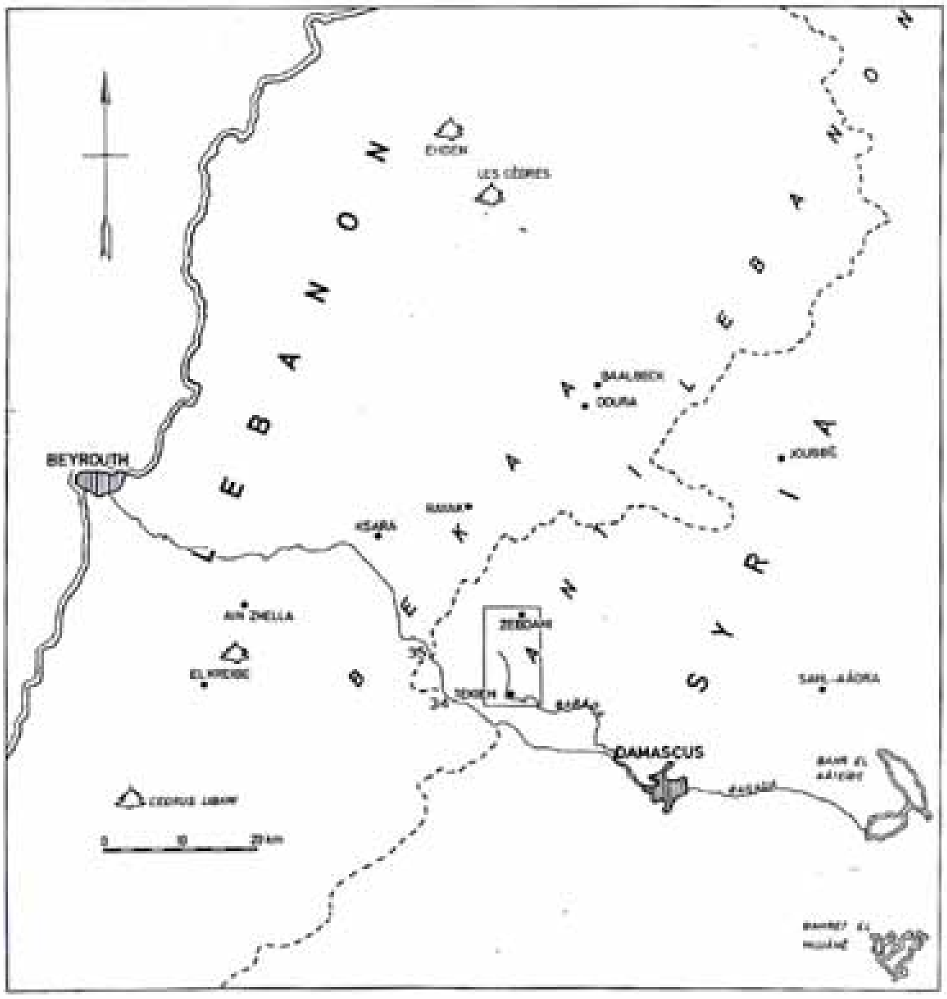
Early Corn Created by Selection ?



Modern Maize's single stalk has kernels conveniently packed in a few large, easily harvested cobs. Its wild ancestor, teosinte grass, had several small stalks, each with many spikes. This transformation is far more dramatic than with wheat and other grains, yet it supposedly occurred by the same process: Stone Age hunter-gatherers began to harvest and plant the plumpest seeds of the tiny, indigestible teosinte grass, did it for dozens of generations, with no appreciable benefit for themselves, then hundreds of years later the modern digestible hybrid had emerged to become a staple.

From Lloyd Pye www.lloydpye.com

Domesticated Maize Pollen found in a Core Sample dated at 7,500 BC, close to Kharsag – Experts said it was impossible



Map of Lebanon and part of Syria including the coring and surface sampling sites.

Official Document Extract - Historical or archaeological evidence can also be important in dating non-documentary records such as pollen diagrams. In the case of one core from southwest Syria, the presence of an exotic pollen type, that of maize *(Zea mays)*, helped show that the upper part of the core dated to recent centuries and not to the early Holocene as had previously been proposed (Bottema, 1977). Maize is a native to the Americas and was only introduced into the Old World as a crop after the Spanish conquest of Mexico in the sixteenth century.

Golden Age Project Comment - *Conventional archaeology could not accept the Bottema evidence that maize pollen was found at this location as early as 7500 BC. However, this eminent professional can now be shown to have been correct.*

Domestication of the Fig close to Kharsag (head enclosure or Eden) c. 9,000 BC - Southern Lebanon area, near Mount Hermon – Press Release, 4/6/06.

Additional supporting evidence for the O'Brien thesis of a restart of agriculture and civilisation, at the site identified as Kharsag in archaic Sumerian cuneiform texts, comes from scientific evidence of domesticated figs, reported last week in Science.

Nine small figs and 313 fig fragments were found at Gilgal 1, a village in the Lower Jordan Valley, eight miles north of ancient Jericho, known to have been inhabited c. 9,000 BC.

The scientists compared the ancient figs with modern wild and domesticated variants, and determined that they were a mutant selectively propagated by local people. This edible fig would not have survived without human intervention.

People had decided to intervene in nature and supply their own food, and this marked a dramatic change from 2.5 million years of human history as mobile hunter gatherers.

This shift to a sedentary lifestyle grounded in the domestication of at least twenty wild crops and the domestication of the pig, goat, sheep and cattle arrived in the same area about the same time.

This would suggest that the knowledge required for what was a very complex technology was imported from elsewhere.

The seven Sumerian Kharsag Epics translated by Christian O'Brien and contained within the *Genius of the Few*, describe in detail the processes involved, and the real down to earth farming lives of the gods Anu, Enlil and the Lady Ninkharsag, the original Divine Triad of ancient peoples.

Was fig first fruit of man's agricultural endeavours ?

The Daily Telegraph - Roger Highfield - Friday, June 2, 2006

The dawn of agriculture may have come with the domestication of fig trees near Jericho some 11,400 years ago, archaeologists report today.

The discovery of ancient carbonised figs suggests that fruit, rather than grains that are traditionally thought to have heralded agriculture, may yield the earliest evidence of purposeful planting.

The figs date back roughly 1,000 years before wheat, barley and legumes were domesticated in the region, making the fruit trees the oldest known domesticated crop, a team reports today in the journal Science.

Nine small figs and 313 fig fragments were found at Gilgal I, a village in the Lower Jordan Valley, eight miles north of ancient Jericho, known to have been inhabited for some 200 years before being abandoned roughly 11,200 years ago.

"This is the oldest evidence for deliberate planting of a food-producing plant, as opposed to just gathering food in the wild," says Prof Peter Bellwood of the Australian National University in Canberra.

The find is all the more remarkable because the figs sat ignored for decades. They were collected in the 1970s and 1980s but were forgotten after the Israeli archaeologist who led the excavation died.

Then the Israel Museum in Jerusalem invited Prof Ofer Bar-Yosef, a Harvard University archaeologist, to study the finds. Today Prof Bar-Yosef and Prof Mordechai Kislev and Anat Hartmann of Bar-Gan University in Ramat-Gan announce how the figs have a remarkable story to tell about the history of mankind.

"Eleven thousand years ago there was a critical switch in the human mind - from exploiting the earth as it was to actively changing the environment to suit our needs," says Prof Bar-Yosef.

"People decided to intervene in nature and supply their own food rather than relying on what was provided by the gods. This shift to a sedentary lifestyle grounded in the growing of wild crops such as barley and wheat marked a dramatic change from 2.5 million years of human history as mobile hunter-gatherers."

The carbonised figs were not distorted, suggesting that they may have been dried for human consumption. Similar fig drupelets were found at a second site about a mile west of Gilgal.

The scientists compared the ancient figs with modern wild and domesticated variants, and determined that they were a mutant, selectively propagated by local people.

In this variety of fig, known as parthenocarpic, the fruit develops without insect pollination and is prevented from falling off the tree, allowing it to ripen.

However, because such figs do not produce seeds, they are a reproductive dead end unless humans interfere by planting, shoots from the parthenocarpic trees.

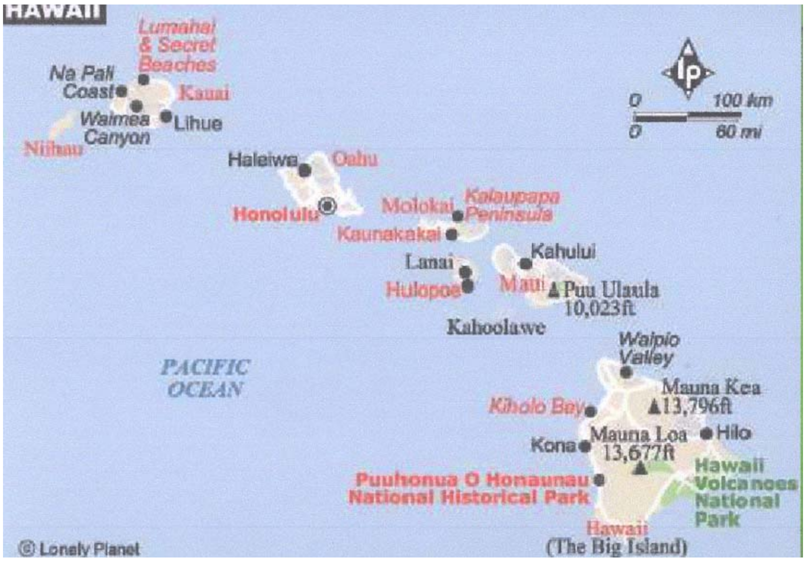
"Once the parthenocarpic mutation occurred, humans must have recognised that the resulting fruits do not produce new trees and fig tree cultivation became a common practice," Prof Bar-Yosef says. "In this intentional act of planting a specific variant of fig tree, we can see the beginnings of agriculture. This edible fig would not have survived if not for human intervention."

The mutation responsible for this parthenocarpic variety arises on some fig trees, but relatively infrequently. The abundance of the fig remains therefore implies that humans recognised these rare trees and propagated them by planting branches. Ease of planting may explain why figs were domesticated some five millennia before other fruit trees, such as the grape, olive and date.

Prof Bar-Yosef says: "The reported Gilgal figs, stored together with other staples such as wild barley, wild oat and acorns, indicate that the subsistence strategy of these early Neolithic farmers was a mixed exploitation of wild plants and initial fig domestication"

Hawaii's Mysterious Cotton

The Hawaiian island chain is the world's most isolated: the nearest continental landfall is San Francisco, 2,400 miles away. Whatever people, animals, and plants arrived in volcanic islands did so by conquering awesome distances. Yet when Captain Cook landed in 1778, Hawaiian cotton – a wild hybrid species with one set of chromosomes from the New World cotton and another from Old World cotton – was already well established. How did it get to be a hybrid and how did it get to Hawaii?



From Lloyd Pye www.lloydpye.com

Domestication of the Date

Royal Cemetery of Ur – Excavated by Sir Leonard Wooley

The date palm was very important in ancient Mesopotamia. Date pits were found in the Royal Cemetery itself, and plant remains from other Mesopotamian sites include date pits as well as the wood of the palm. Many texts from this and later periods concern date orchards and related matters; there is even a word, defined in the *Pennsylvania Sumerian Dictionary that* refers to an item of jewellery in the form of the flowering branch of the date palm.

In ancient Mesopotamia, the date palm undoubtedly had symbolic significance. Remember that in cultivated date groves the female fruiting trees are pollinated by hand from the male trees. Miller reasons that it is just a short, conceptual step from the fertility of the date palm to that of human sexuality. This connection is reinforced: the Mesopotamian goddess **Inanna** (Ninkharsag), known for her part in the *sacred marriage* ritual, considered herself: *the one who makes the dates be full of abundance.* The Sumerians knew her as **Inanna**, Queen of Heaven and Earth.

The Sex Life of Dates

Male and female flowers of the date palm grow on different trees, and since the male flowers are needed to pollinate the female flowers, groves of palm trees have both male and female trees. Natural groves have about half male and half female trees, while in cultivated groves, like those of ancient Mesopotamia, many female fruiting trees are pollinated by hand from just a few male trees. An acre of cultivated date trees averages one male palm to a harem of 49 female palms. Date palms have been pollinated by hand for centuries

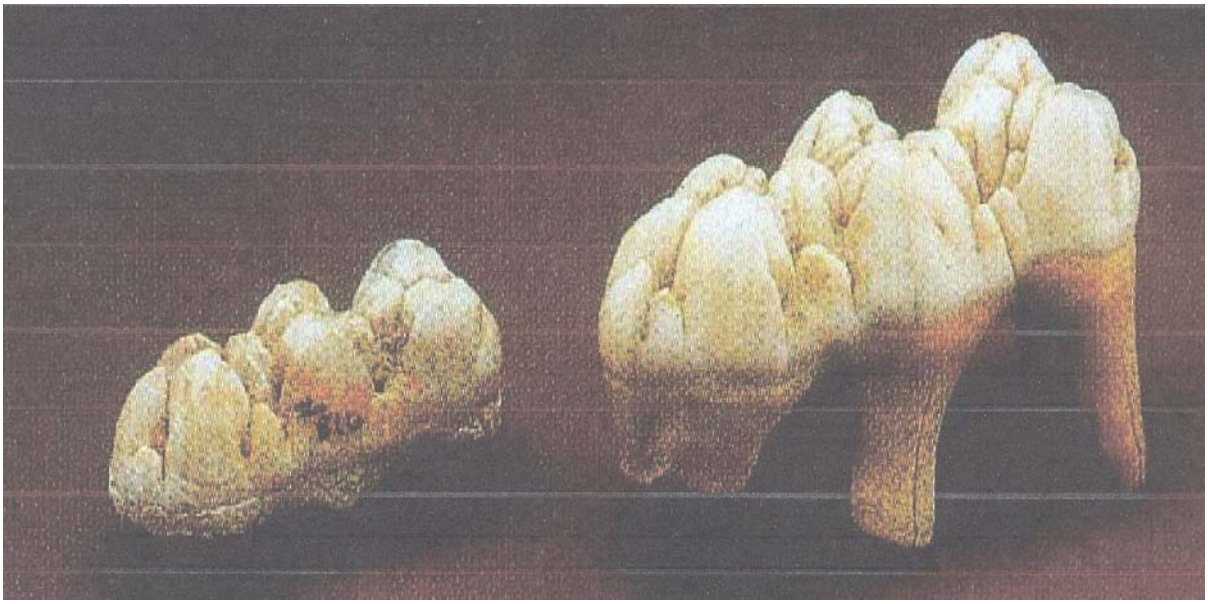
Miller thought the gold ornaments from the graves resembled the male and female branches of the date palm tree:

Flowering branch of the male date palm (left). The male blossom is fluffy white and star-shaped. Female blossoms resemble beads on a string.

Fruiting branch of female date palm(right)**.** About 7 months after pollination, dates are ready for picking.

From Wild Boar to Domesticated Pig



Here also the effects of domestication on wild animals is abundantly clear. The tooth of the wild pig (above) is three times larger than the same tooth in a domesticated pig. Yet we are asked to accept and believe that Stone Age people would be willing to endure generations of living cheek-by-jowel with ill-tempered, heavily horned, wild sheep, cattle, and the razor sharp tusks of pigs, so that their distantly removed progeny could enjoy the benefits of their labours !

From Lloyd Pye www.lloydpye.com

Be grateful you don't live with a Water Buffalo

Picture: DRAGON NEWS PICTURE AGENCY

It is more docile than a cow and may be the animal of the future for the British flood plains. Its large boxy hooves and flexible leg joints are ideal for mud and it can even graze under water by closing its nostrils. It pulls carts and is used for buffalo flat racing. Its milk is richer than cow milk and its meat has less cholesterol. It can break out of ordinary fields and swim even the largest river, but is easily kept in by electric fencing. The Chinese even toilet-train it.

Domestication of the Dog by Will Hart

Extract from Life Technology News - Tuesday, October 03, 2006

You may ask what do the dog and Stone Age dietary habits have to do with solving the enigmas of mankind's ancient past? The answer is everything. Until recently, it was believed dogs (Canis familiaris) came from a variety of wild canines such as wolves, coyotes, dingo's, jackals, etc. But the latest DNA research shows that the wolf alone is the ancestral race of all dogs.

This poses a set of very difficult problems. The first dog would have been a mutant wolf. However, wolves are extremely sensitive to the genetic fitness and strength of each member of the pack. They are constantly testing and establishing a stringent social pecking order and only the alphas reproduce. So how would a mutant ever have survived and reproduced given the rigours of pack behaviour? No wolves in captivity have produced viable mutants and geneticists tell us mutants are normally unfit and do not survive.

We are faced with a real conundrum. If we pose that early human tribes intervened and bred wolves into dogs we are faced with an equally impossible scenario. How could primitive humans have known it was possible to selectively breed a wild animal into one possessing only those traits beneficial to them? We take the characteristics of dogs for granted, however, they present us with a profound mystery. A dog is the embodiment of only those wolf traits that people find useful, attractive and safe. How did genetically illiterate Stone Age humans achieve this feat of genetic engineering?

This problem is compounded when we are confronted by evidence from our earliest civilisations showing that salukis, sight hounds and the pharaoh hound, had already been bred in ancient Sumeria and Egypt. How is it possible our ancestors, recently emerged from the Stone Age, could have successfully engineered purebred lines at the onset of civilisation? In addition, dogs are not only temperamentally different from their wild progenitors, they differ physiologically as well.

A wild alpha male and female only breed once a year, whereas dogs can breed any time. Wolves shed their winter coats, dogs do not. These diverging physiological characteristics take time to develop, in fact, many generations. Again, how did our ancestors at the onset of civilisation accomplish this?

This mystery is underscored by the fact most of the modern dog breeds originated thousands of years ago. Science has not even addressed most of these issues let alone have the experts satisfactorily explained how wolves became dogs 100,000 years ago nor have they shown the step-by-step transitions. Purebred dogs just suddenly appear in the archeological record as if by magic. This is also true of agriculture and our key cereal and legume crops. Wheat, corn, beans and rice pose a second set of genetic enigmas.

Research into the dietary habits of Stone Age tribes around the globe show our ancient hunter-gatherer ancestors subsisted on leafy plants and lean muscle meats. This makes perfect sense because these foods were readily available, took little or no processing, and wild game could be cooked over an open fire. The problem with our grain crops, and they are the basis of civilisation, is wild grass seeds are so miniscule the cost/benefit of harvesting them was not in favour of it. They also require harvesting, threshing and cooking technology since they have to be boiled extensively. This was technology Stone Age Man lacked.

The reason grains have to be cooked is that the human gut is not adapted to digest wild grains. This makes it very clear the use of wild grass seeds as a primary food source is of recent origin. Our Paleolithic ancestors did not subsist on them. Once again, this poses a set of formidable problems that need to be studied rigorously. If our ancestors did not harvest and eat wild grains, how could they have domesticated and bred the wild species so quickly?

Without many generations of trial and error experimentation culminating in a vast body of agronomic knowledge and agricultural practices that would have included genetics and breeding, it is all but impossible to understand how the agricultural revolution was brought about. Official science tries to explain the evolution of nomadic hunter-gatherers into sedentary, crop-growing farmers by claiming they discovered crops quite by accident. We are told it happened when a primitive villager tossed a seed bearing plant into the trash pile and noticed that it sprouted.

But that trite tale can hardly explain how they selected the best wild species to use as the basis for the agricultural revolution. There are thousands and thousands of potential wild plants that could be turned into agricultural crops. How is it people with very little experience with wild grasses were able to pick the best varieties to breed? This represents a quantum leap. What we are asked to believe is that our ancestors, without much experience at the seminal stage of civilisation, were able to select and breed the very best varieties of wild grass species.

How do we know this is true? Because we still grow the very crops they supposedly selected even after 5000 years of continuous technological and agricultural development. We are asked to suspend disbelief and accept they also constructed the largest precision-engineered stone building the world has ever seen the Great Pyramid of Giza using only primitive hand tools and backbreaking labor. Something is obviously wrong with this picture.

Is it logical to assume our Earthly ancestors could (or would) have thrown together the agricultural revolution and then the entire civilisations of Sumer and Egypt out of whole cloth? No it is not; and neither do these suppositions represent sound science.

For those of us in the alternative history camp, one of the most fundamental questions we must impress upon the public and upon official science is to ask where are the antecedents and precedents?. Show us the slow Darwinian stages of development that official history presupposes. How can you explain the sudden appearance of genetically altered food crops and advanced engineering techniques at the onset of human civilisation?

We need step-by-step documentation and incontrovertible evidence and it ought to be copious and devoid of missing links since we are supposedly talking about events that occurred thousands and not tens or hundreds of millions of years ago, as is the case with biological evolution.

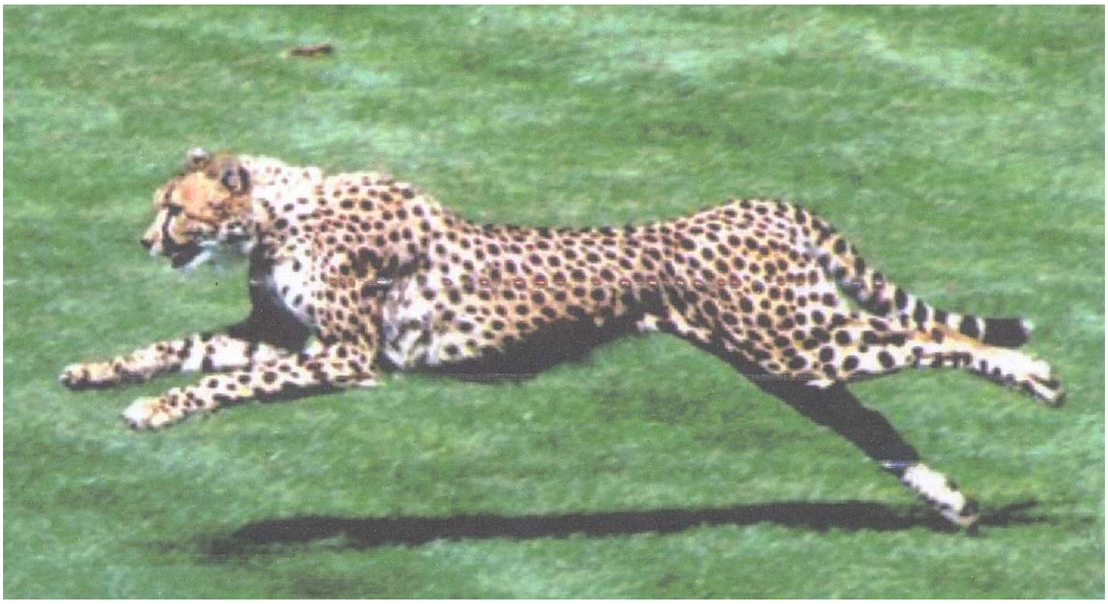
Where did our Paleolithic ancestors acquire the knowledge and skills to breed wild plants into food crops while also constructing planned cities? How did they achieve an exacting command of the principles of civil engineering as exhibited in Sumerian and the Harrappan civilisation of the Indus Valley? How did humans go from mud huts and collecting leafy plants to building ziggurats, flush toilets, public bathhouses (Mohenjo Daro), making bread in ovens, and inventing process metallurgy seemingly overnight? In plain language, where is the proof the missing links demonstrating your (official science) theories are confirmed in the archaeological record and meet simple standards of logic and commonsense?

Turning to what our ancestors in Sumer, Mexico, Egypt and Peru have to say about the origins of agriculture and civilisation we find a very different story. According to the ancient records, written and oral traditions, none of the earliest civilisations claimed they invented it. What is of profound interest is they are in unanimous accord in claiming they were given the arts of civilisation by the gods.

It is very unlike human nature to give credit to anyone else for anything we have invented or achieved. The ancient Egyptians left copious records of every aspect of their culture in a huge collection of artwork, hieroglyphics and texts. Yet we find no reference in their 3,000 year history as to how or why they built the pyramids. What a curious lapse of documentation for such a communicative race assuming they did indeed built the pyramids. Would they have omitted any reference to their most important monuments? That seems a preposterous supposition and yet Egyptologists gloss over it as they do the lack of mummies in the alleged pyramids-as-tombs scenario they embrace without blushing.

These are all clues, pieces of a vast planetary puzzle, telling the story of the Genesis Race. The references to these gods that arrived on Earth to uplift man are described in the Bible and other ancient texts and traditions.

Cheetah – King of Domestication



Cheetahs are the clearest example of a species that could not possibly have been selectively bred by humans. One of the earliest domesticated cats, it is a unique hybrid of cats and dogs. Its skeleton is mostly that of a cat, but it sits like a dog. It has a unique flexion in its spine that neither cats nor dogs have, which lets it be the top sprinter in the animal kingdom (60 mph). To stabilize high-speed turns, instead of soft cat pads and retractable claws it has tough dog's pads and permanently extended dog's claws. Its fur is dog hair but its spots are cat hair. Most stunningly, every cheetah has the same DNA. They are clones.

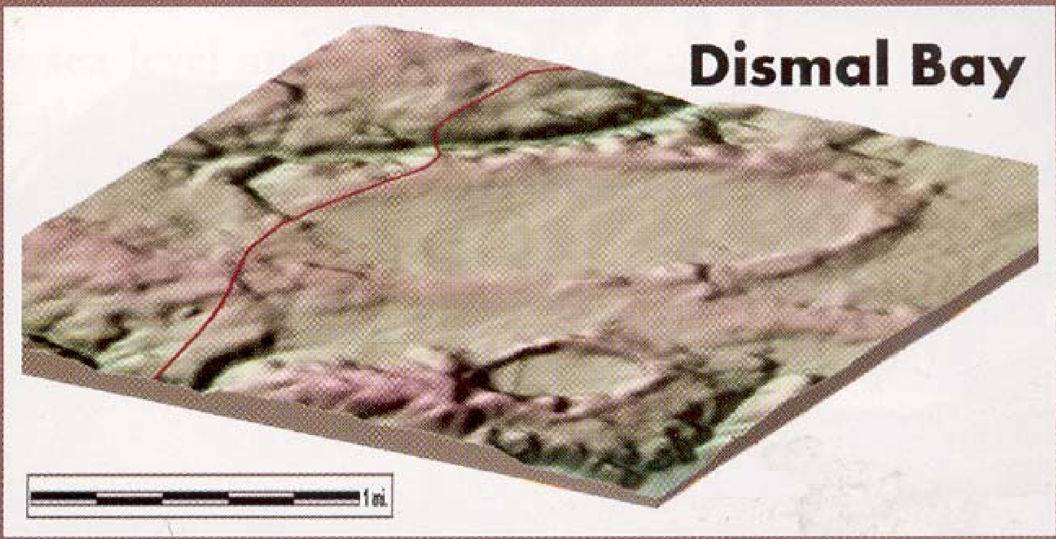
From Lloyd Pye www.lloydpye.com

Global Catastrophe Index

From Plato's Dialogue *The Criteas* - Senior Priest to Solon at the temple dedicated to Neith (Ninkharsag) at Sais, Nile Delta c. 560 BC.

O Solon, you Greeks are all young in your minds, which hold no store of old belief on a long tradition, no knowledge hoary with age. The reason is this. There have been, and will be hereafter, many and divers destructions of mankind, the greatest by fire and water, though other lessor ones are due to countless other causes. Thus the story current, also in your part of the world, that Phaethon, child of the Sun, once harnessed his father's chariot, but could not guide it into his father's course and so burnt up everything on the face of the earth and was himself consumed by a thunderbolt – this legend has the air of a fable; ***but the truth behind it is a deviation of the bodies that revolve in heaven around the earth and a destruction, occurring at long intervals of things on earth by a great conflagration****… Any great or noble achievement or otherwise exceptional event that has come to pass, either in your parts or here or in any place of which we have tidings, has been written down for ages past in records that are preserved in our temples; whereas with you and other people again and again, life has only just been enriched with letters and all other necessities of civilization* ***when once more, after the usual period of years, the torrents from heaven swept down like a pestilence, leaving only the rude and unlettered among you****. And so you start again like children, knowing nothing of what existed in ancient times here or in your own country… To begin with, your people remember one deluge, though their were many earlier; and moreover you do not know that the noblest and bravest race in the world once lived in your country. From a small remnant of their seed you and all your citizens are derived; but you know nothing of it because the survivors for many generations died leaving no word in writing".*

Evidence of impacts at the end of the Ice Age



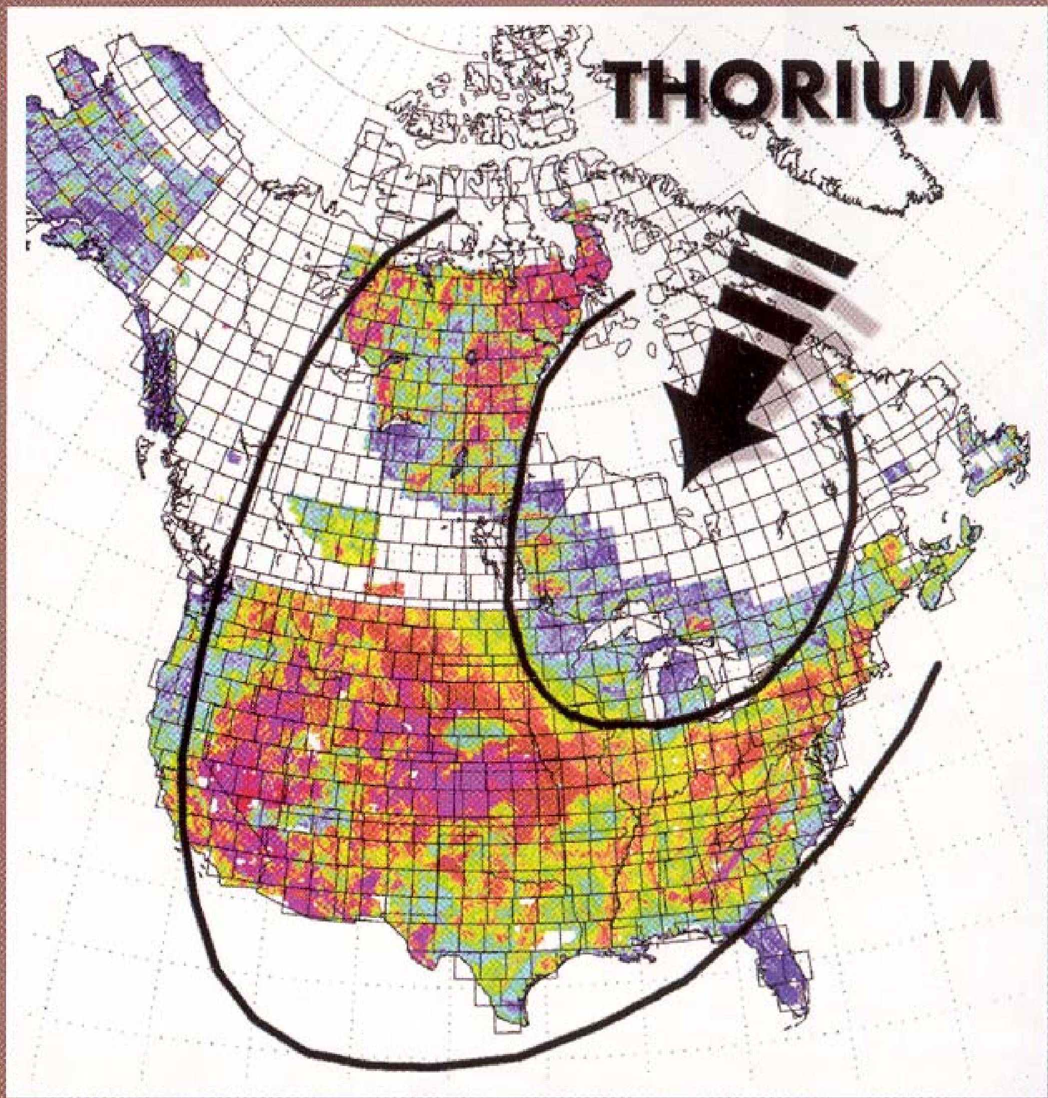
DISMAL BAY. This computer-generated side view of a mile-long Carolina Bay in North Carolina looks much like a lunar or Martian impact crater. For comparison, the tiny red line is a highway.

CAROLINA BAY CRATER. Some scientists believe the Carolina Bays were caused by a cosmic impact. There are hundreds of thousands of them in North America, all pointing in the same direction.

Source: USGS, www.terraverver.com

From the *Cycles of Cosmic Catastrophe* by Richard Firestone et al

Footprint of a Comet



RADIOACTIVE EARTH. Two baffling areas of high-level radioactive potassium exist in the western United States and around Hudson Bay in Canada. Did some cosmic catastrophe put them there?

Sources: USGS and Geological Survey of Canada

From the *Cycles of Cosmic Catastrophe* by Richard Firestone, Allen West and Simon Warwick-Smith

Arawak, Caribbean Tribe – Warning Fire from the Sky

Ages ago, the Creator became impatient with all the evil in the world and decided to destroy it and create a new one. Looking around the Earth, the Creator could find only one righteous family that deserved to live. Appearing to them one day, the Creator told them, "Go dig a large pit, cover it with logs, and pile sand over the top. After it is done, seal yourselves up inside the pit for protection."

The family recognized the ominous tone in the Creator's voice, so without any questions, they quickly began to dig the pit. Just as they finished sealing themselves inside, the Creator sent a terrible rain of fire and hail down from the sky to destroy the world.

Inside their pit, the ground shook so violently from the concussions that they were afraid the walls might collapse on them. Huddled in the middle of the pit, they heard the roaring and crackling of the fire as the forests around them burst into furious flames. The air in the pit rapidly grew warmer and warmer until it was almost too hot to breathe. The family began to fear that the pit was not deep enough to protect them, but soon, the noise stopped and the roof of the pit grew cooler to the touch.

After a while, the family came out to find a changed world. The fire had scorched the Earth as far as they could see in every direction, so that almost every living thing had been destroyed. Some animals and a few other People survived to rebuild the world.

RETOLD FROM BRETT - I880

From *The Cycle of Cosmic Catastrophe* by Richard Firestone, Allen West and Simon Warwick-Smith

Timetable of the Events

Consequences of the Supernova explosion

39,000 BC

KEY DATES FOR THE EVENT

41,000 years ago
—Massive increase in global radiocarbon
—Magnetic field almost reverses
—Millions of animal species go extinct in Australia

↓

34,000 years ago
—Large increase in global radiocarbon
—Magnetic field almost reverses again

↓

16,000 years ago
—Northern ice sheets in rapid meltdown

↓

13,000 years ago
—Sudden increase in global radiocarbon
—Magnetic field wavers again
—Millions of animal species go extinct in the North
—Clovis-era cultures disappear
—Clovis flint peppered with iron pellets

Fig. 1.8. The most important Event-related dates in calendar years before the present day (BP).

From *The Cycle of Cosmic Catastrophe* by Richard Firestone, Allen West and Simon Warwick-Smith

Three Stages of Supernova Explosion Impact - Review of Isotopes

The cosmogenic isotope data are all consistent with the following:

First, a supernova exploded about 200 light-years (60 parsecs) from Earth 41,000 years ago, bathing Earth in cosmic radiation and increasing global radiocarbon by 150 percent, along with major increases in lOBe, 36CI, and 26 AI.

Second, about 7,000 years later, another event increased global radio carbon substantially again. The shell of debris from a supernova initially travels at about 6,000 miles per second (10,000 km/s), so assuming that ejecta from the supernova reached us at that speed in 7,000 years, the supernova would have been 230 light-years (72 parsecs) from Earth, which agrees very well with the distance above. The second event most likely involved the arrival of high-velocity, isotope-rich material ejected from the supernova.

Third, 20,000 years after the second event, at the end of the Ice Age, the last major event occurred, bringing yet more radiocarbon to Earth, most likely from the supernova debris wave passing the Earth. The arrival time of this event is consistent with the shock speed of the supernova remnant, which we would expect to have been moving faster than 2,000,000 miles/per hour (1,000 *km/s).* All three events from the supernova correspond very well with the evidence in the geological record on Earth.

The Survivors: The Navajo - The third event in the supernova scenario includes impacts on Earth by supernova debris, comets, and asteroids. The following story from the Navajo describes many events that are consistent with an impact to the north of the tribe in Canada and the northern United States: the explosion, the storms of black sand and ash, the heavy snowstorm from the north, the flooding, and the extinctions.

The End of the Third World - During the last world before "this one, men, women, and animals fought constantly. Begochiddy (son of the Creator), called Golden Child of the Sun, warned the People, "If you do not stop all this fighting, a great and terrible flood will come upon you that will destroy the world. "

For a while, the People listened and tried not to fight, but then Coyote, who loved to cause trouble, could no longer restrain himself. He stole a child from a river monster, and war broke out again. Then one day in the midst of a big battle, the people were startled by a great explosion that came from all directions. Suddenly a fierce storm of black sand and ash blew in from the east. Very soon, a storm of harsh yellow sand blew in from the west. Not long after that, a storm of stinging ice and blinding snow that looked like white sand came down upon them from the north. Then, without warning, a torrent of water poured out of the Earth and began to rise, swirling all around them higher and higher. Most splashed around helplessly until they sank under the waves. Only a few people and animals managed to climb into a giant hollow reed that floated toward them on the rising water. Before long, nearly every living thing in the world had drowned.

Seeing that it was over, Begochiddy waved a hand over the water, and it flowed back down into the Earth. Then Begochiddy called on the giant dust devils to spin out across the wet Earth and dry it out. When they finished, the Fourth' World began.

RETOLD FROM BRUCHAC - 1991

From the *Cycle of Cosmic Catastrophes* by Richard Firestone, Allen West, and Simon Warwick-Smith

Recent Ice Cap displaced from current North Pole after Axis Shift, caused by Comet impact on a low trajectory into the North Pole Ice Cap, or massive electromagnetic influences within our solar system – c. 10,500 BC

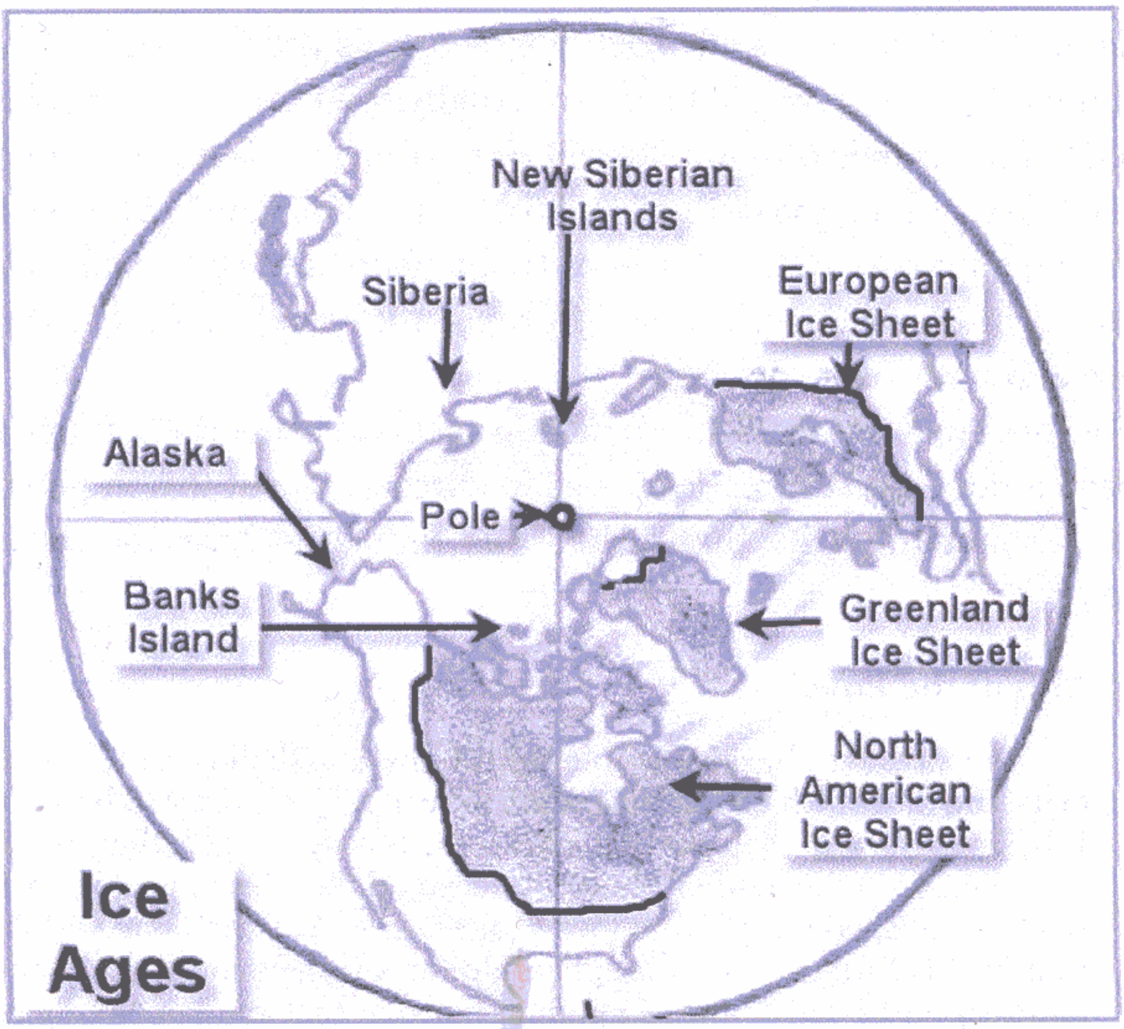
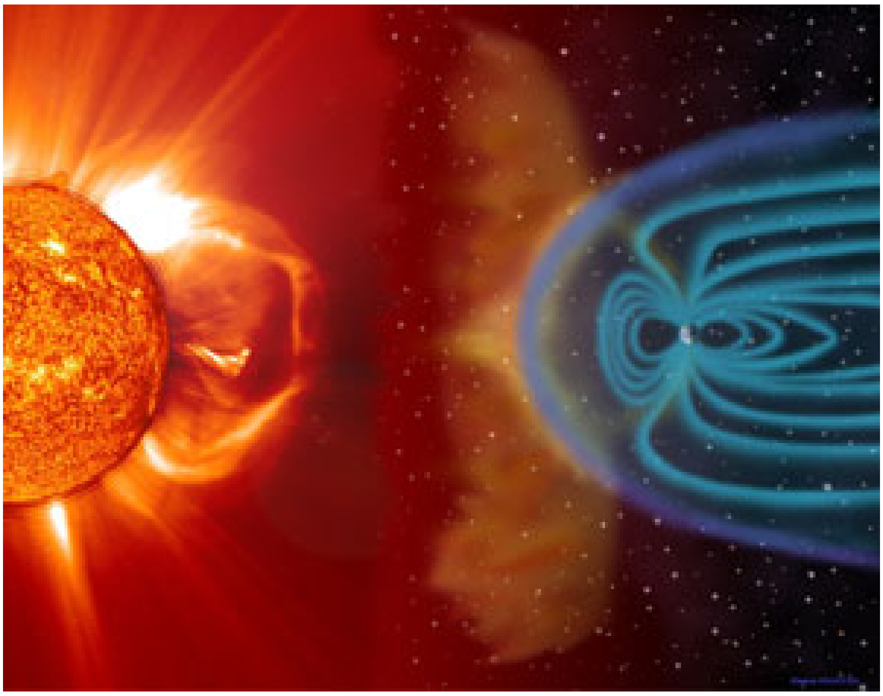


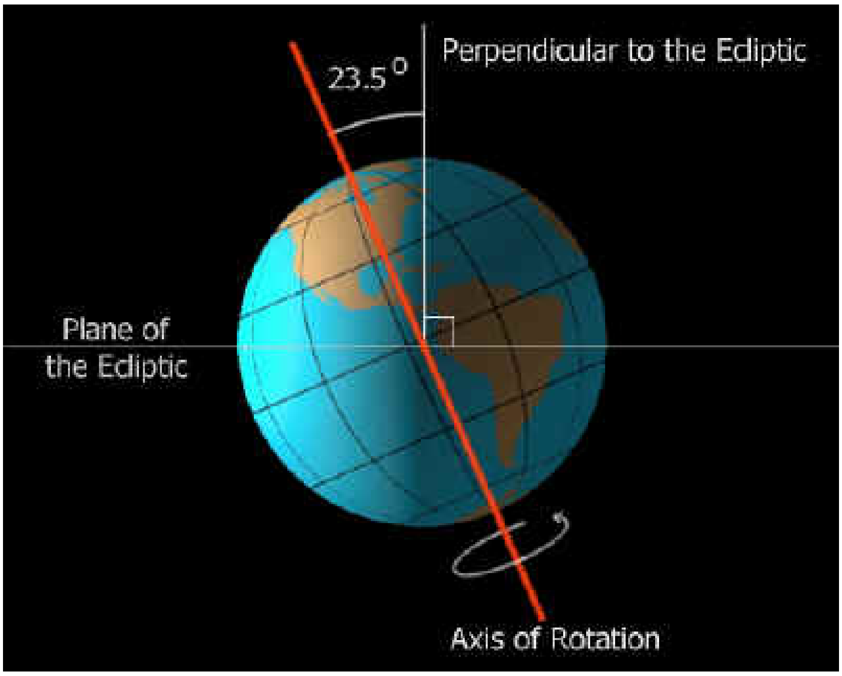
Figure 3 - Recent Ice Cap displaced from current North Pole

From the *Message from the Ancestors* by John Gagnon

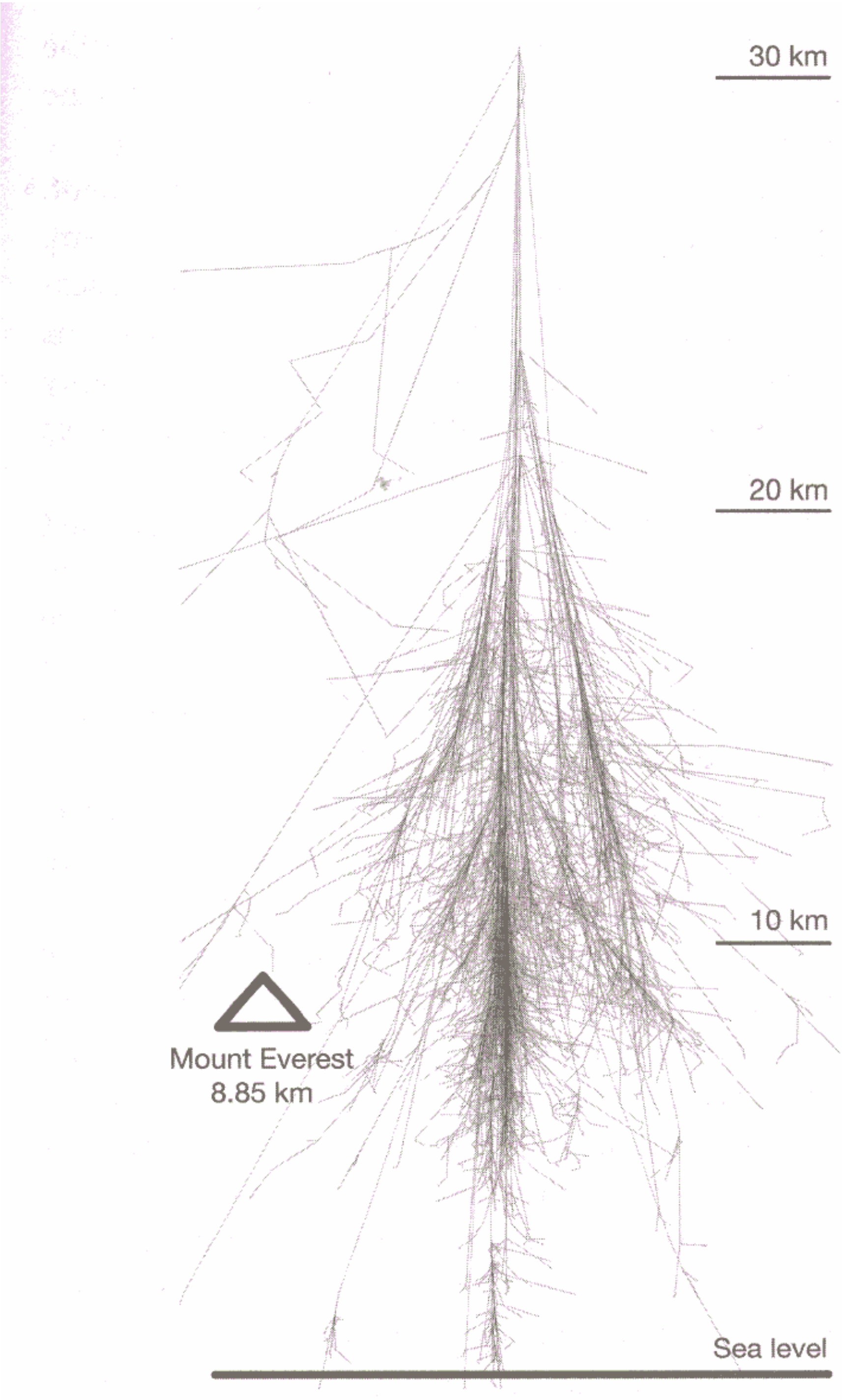
Mechanics of Earth Axis Shift – Electromagnetic Forces



The gravity based theories on the workings of the universe, put forward by Newton and Einstein, are being replaced by plasma based knowledge deriving from an understanding of the electro-magnetic science. The image above shows the eruptions from the surface of the sun, the solar wind, and the magnetic positive (sun) and negative (earth) relationships. The earth's magnetic field provides protection from solar and cosmic radiation, however, under certain conditions, such as under extreme solar activity, or the close passage of large objects, or impacts, the earth can be moved or even tip over on its axis with catastrophic implications for life on earth



The Adventures of Cosmic Rays

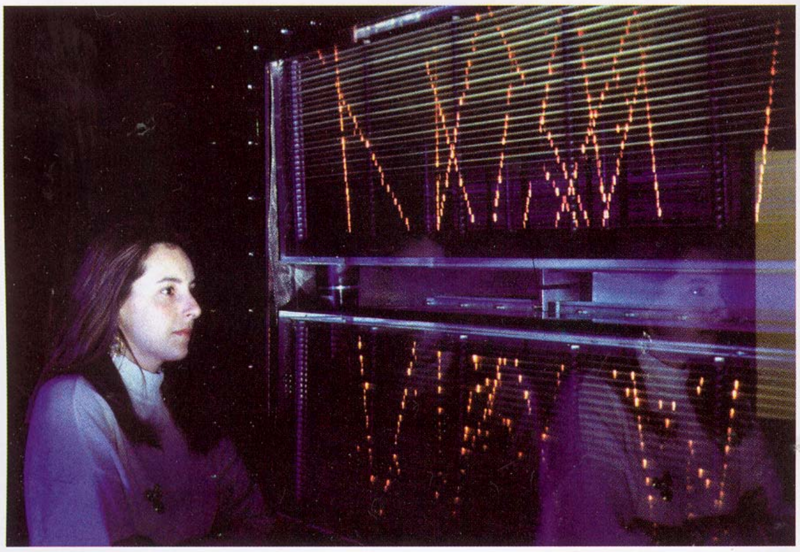


5. When an energetic cosmic-ray particle hits the Earth's atmosphere it produces a shower of sub-atomic particles of many different kinds. Nearly all of them are stopped by our aerial shield and only a few reach the lowest altitudes. (CORSIKA calculations by Fabian Schmidt, University of Leeds)

Visible Tracks of Cosmic Rays

From *The Chilling Stars – A New Theory of Climate Change* by Henrik Svensmark and Nigel Calder

Visible Tracks of Cosmic Rays



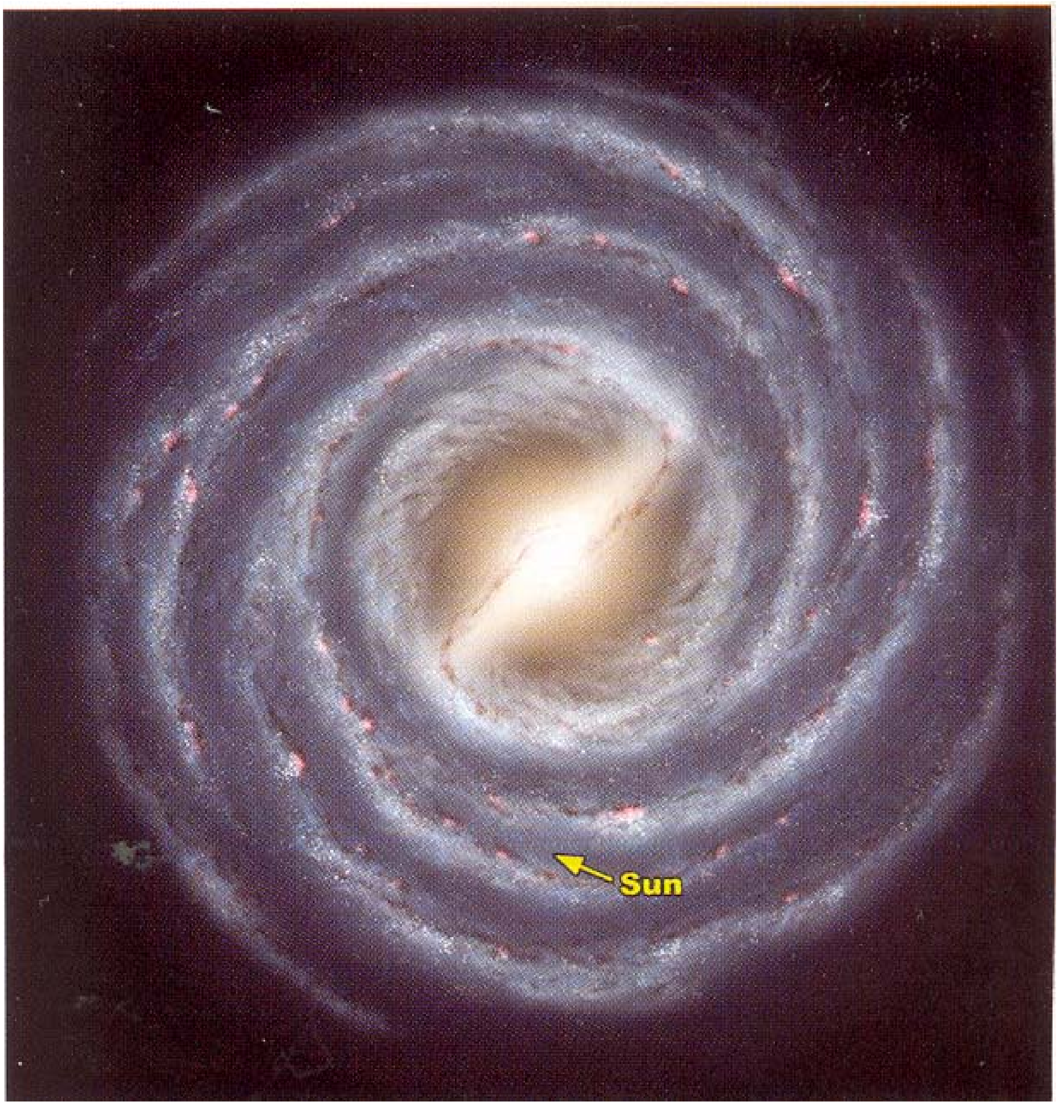
vii. Tracks of natural cosmic rays coming through the ceiling are made visible by sparks in a detector at a public exhibition at the CERN laboratory in Geneva. No one notices this ceaseless rain of high-energy particles riddling our environment and our bodies, but the clouds do. (© CERN)

Low clouds that cover huge areas of the oceans are the chief regulators of the climate

xii. Low clouds that cover huge areas of the world's oceans are the chief regulators of the climate. Their extent varies with the intensity of cosmic rays penetrating to low altitudes, which originate mainly from the most energetic particles thrown out by exploded stars. (© Margaret Worrall)

From *The Chilling Stars – A New Theory of Climate Change* by Henrik Svensmark and Nigel Calder

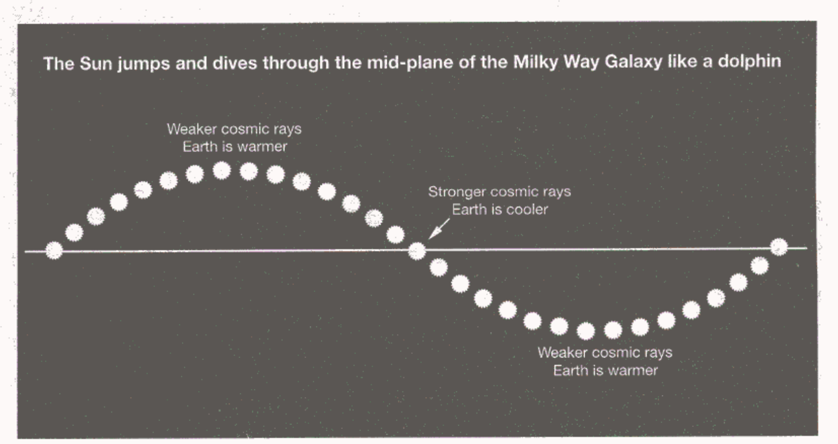
Our Sun and its associated Planets Orbits the Centre of the Milky Way Galaxy



This artist's impression of the Milky Way Galaxy, based on the latest astronomy, shows the suburban location of the Sun and its planets amid the outlying spiral arms where bright, short-lived stars are concentrated. While the Sun orbits around the centre of the Galaxy, the spiral pattern rotates like a catherine wheel, but at a different rate. As a result, the Earth experiences high cosmic rays and cold climates during the Sun's passages through the spiral arms. (NASA/JPL-Caltech/R. Hurt (SSC/Caltech))

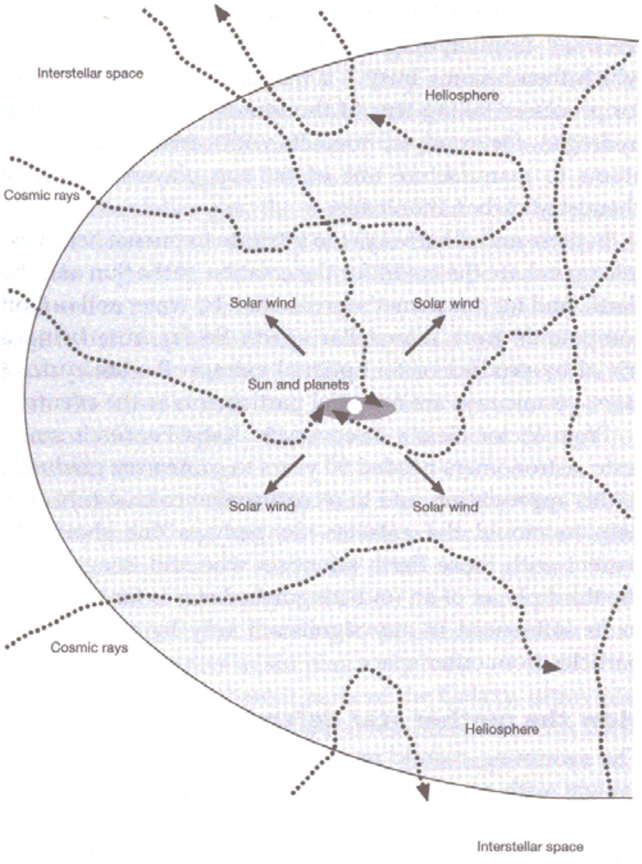
From *The Chilling Stars – A New Theory of Climate Change* by Henrik Svensmark and Nigel Calder

The Sun jumps and dives through the mid-plane of the Galaxy



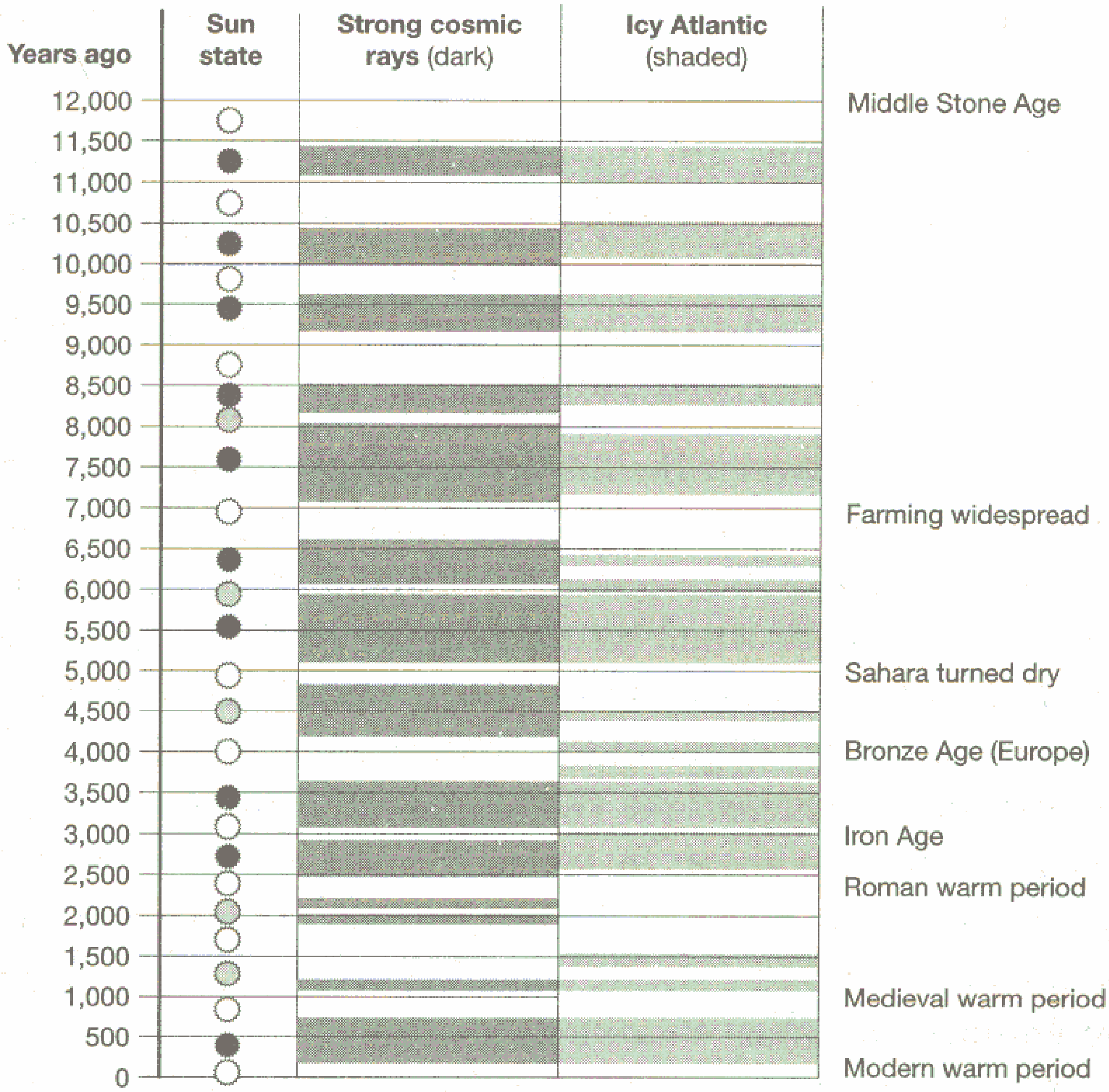
14. Past wobbles in the climate linked to the motions of the Sun can help to improve astronomical knowledge about the Galaxy.

The Sun's Heliosphere and irregular Magnetic Field extending beyond the Planets, repels Cosmic Rays



4. The empire of the Sun extends far beyond the planets in a huge bubble called the heliosphere, blown by the non-stop solar wind. Its irregular magnetic field repels many of the cosmic rays coming from the Galaxy. When this solar shield weakens, more cosmic rays reach the Earth.

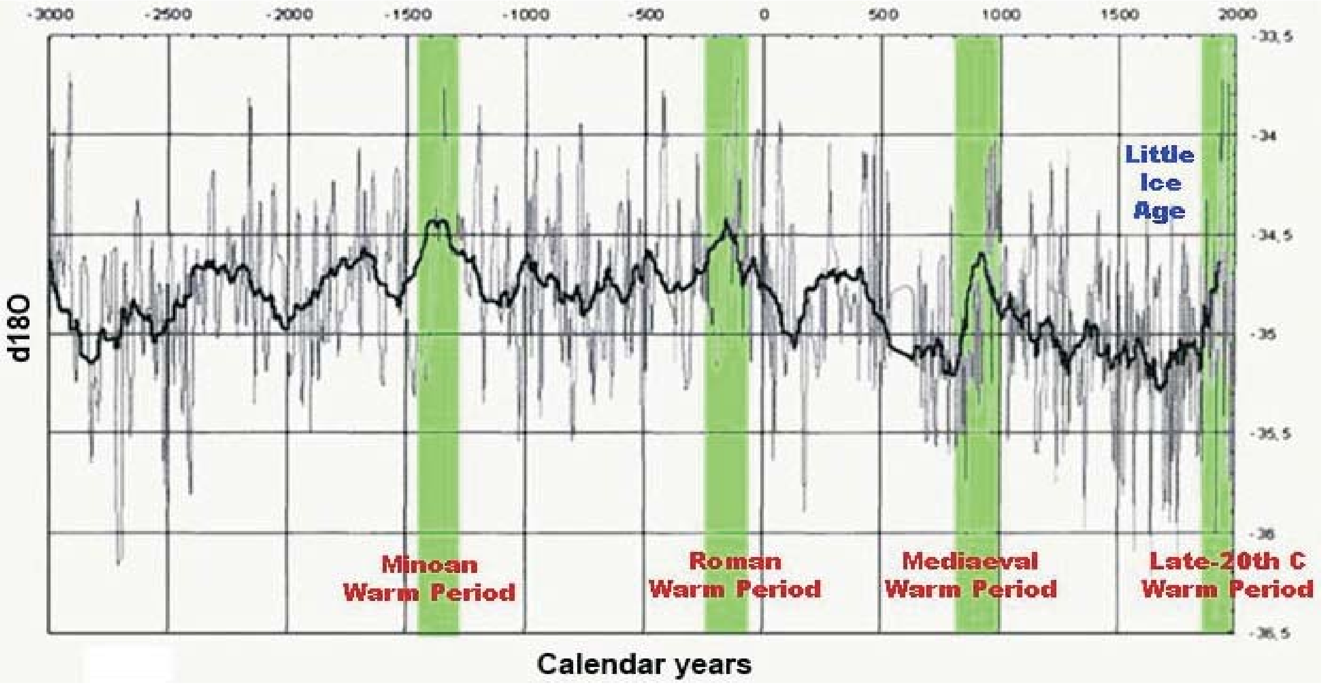
A Lazy Sun Launches Iceberg Armadas



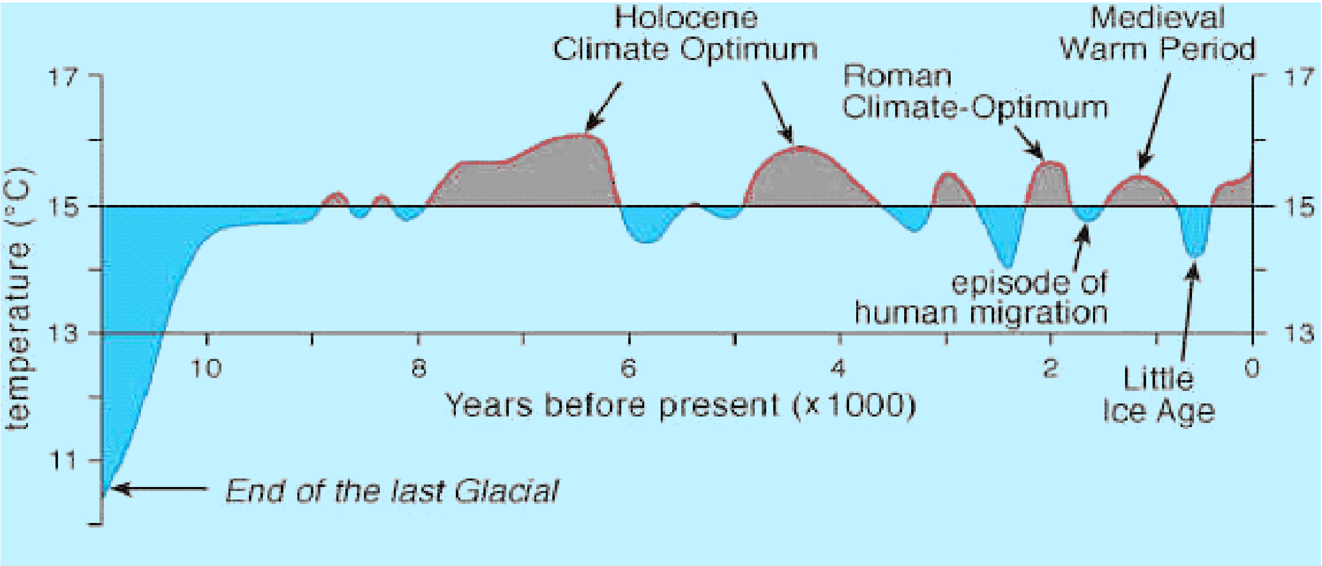
3. Repeatedly during the past 12,000 years the Sun has weakened, letting in more cosmic rays from the Galaxy. The result was a chilly world, recorded in grit dropped by ice in the Atlantic – most recently in the Little Ice Age. The Modern Warm Period (often called global warming) is just the latest of a long succession of mild intervals when the Sun was more active and cosmic rays were relatively scarce. (Data from G. Bond and team, 2001)

From *The Chilling Stars – A New Theory of Climate Change* by Henrik Svensmark and Nigel Calder

Holocene Climate Change Data - From a Paper by Professor Bob Carter

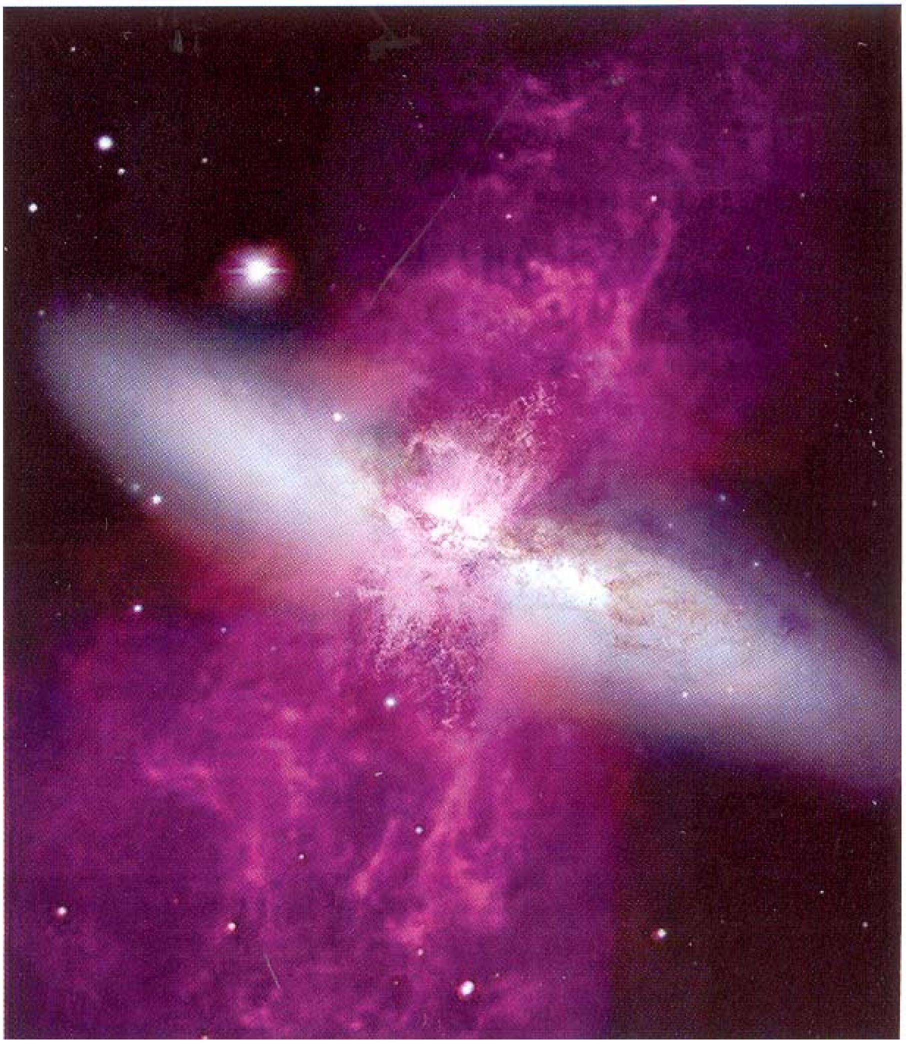


Average near-surface temperatures of the northern hemisphere during the past 11,000 years (after Dansgaard et al.,1969, and Schonwiese, 1995)



At 11,000 years before present the Southern Lebanon Mountains would have received sufficient winter precipitation and summer warmth, to allow the expansion of this key glacial refuge of wild grasses, oak and pasticcio. The rift valley running down to the Dead Sea, with the consequent water for irrigation, would have provided particularly favourable conditions for the earliest farmers

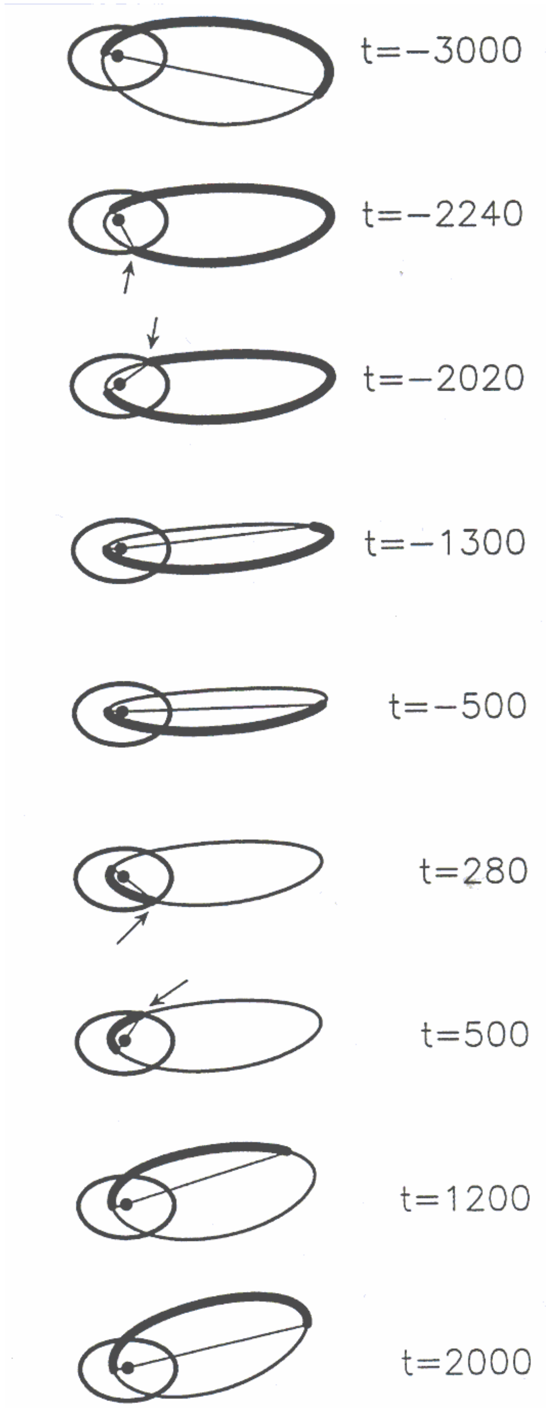
These conditions in our Milky Way Galaxy would have drenched the Earth with enough cosmic rays to make it freeze over.



Enormous jets of hot gas pour from the starburst galaxy M82, produced by the explosions of many massive stars during a boom in star formation. A close encounter with another galaxy, M81, provoked the starburst. When similar though less spectacular events occurred in our own Milky Way Galaxy, they drenched the Earth with enough cosmic rays to make it freeze over. (Mark Westmoquette (University College London), Jay Gallagher (University of Wisconsin- Madison), Linda Smith (Uni- versity College London), WIYNj NSF, NASAjESA)

From *The Chilling Stars – A New Theory of Climate Change* by Henrik Svensmark and Nigel Calder

Extract from *The Problem of Historical Catastrophism* by Professor S.V.M.Clube.



Ilustration showing typical nodal precession for the core of the Taurid stream, in particular when the Earth's orbit is intersected (note the arrows). The parts of the orbit respectively above and below the ecliptic are shown as thick and thin lines. The timescale is t (AD). The Earth intersection epochs evidently occur ca 2200 - 2000 BC and ca 300 - 500 AD (implying a bombardment/dust cycle of around 2.5 kyr) while the corresponding perihelion positions are below and above the ecliptic.

Conclusion of the Victor Clube Paper

It has been shown here that the approximately centennial rise and fall of fireball streaming sometimes associated with Earth approaching comets or asteroids, is also the historical source of apocalyptic *signs*. This streaming is a proxy for hazardous swarms of sub-cometary debris representing a higher flux to Earth than normally conceded of bodies in the mass range - 10/12 – 10/15 g. Largely overlooked since early modem historical time (and even flatly proscribed by some authorities), this hazard appears most commonly to take the form of global climatic recessions, involving high-level dust, albeit low-level multi-megaton explosions associated with the most robust debris are by no means excluded.

These recessions are a feature of the general flow of *Taurid* material to Earth recorded in polar ice-cores and ocean sediment -cores, now recognized as being responsible for a basic 5,000 year double-cycle alternately producing global warming and global cooling. During the course of the Enlightenment, mankind has singularly failed to come to terms with this apparently centennial threat, having become strangely preoccupied during the Space Age with a very much less frequent threat (roughly a thousand times less frequent!), which is *directly* due to comets and asteroids.

Whether or not mankind recognizes the approximately centennial threat is tantamount to choosing between apocalyptic and anti-apocalyptic outlooks on the environment. This question, as I have shown, is of deep historical and political significance, being intimately bound up with the origins of Christian doctrine and with the elitist desire to perpetuate anti-apocalypticism along with its appropriately distorted cosmological setting. In view of the intellectual and cultural climate of irrationality, which arises thereby, it is a moot point whether mankind will meet the challenge posed by this question before the next bout of apocalyptic terror descends. **Such a situation represents an intolerable risk to civilization.**

From *The Problem of Historical Catastrophism* by S.V.M. Clube – Contained within *Natural Catastrophes During the Bronze Age Civilisations* – Edited by Benny J. Peiser, Trevor Palmer and Mark E. Bailey

Impacts in Historical Times

c. 3000 BC - Henbury crater; 160m diameter

c. 2350 BC - Early Bronze Age civilizations disappear-climate change

c. 2100 BC - More Bronze Age cities disappear

c. 2000 BC - Campo Cielo, Argentina - bouncing asteroid

c. 1800 BC - Major dust event

c. 1650 BC - Destruction of Middle Bronze Age cities

c. 1356 BC - Destruction by fire in legends

c. 1200 BC - Destruction of Late Bronze Age cities

c. 1159-1140 BC - Decline in annual growth rings in Irish bog oaks

c. 1000 BC - Nebraska - Broken Bow crater

c. 800 BC - Bronze Age ends

c. 850-760 BC - Climate change data from the Netherlands

c. 200 BC - Fireball peak

c. 400-600 AD - A blitz of fireballs!

c. 500 - Wabar craters, Saudi Arabia

536 - Dark Age triggered - dust veil event

c. 580 - Gregory tells of climate chaos

679 – Gregory tells of climate chaos

c. 800 -Vikings find west coast of Europe uninhabited

c. 1000 - Comet and fireball peak

1179 - South Island of New Zealand burned (fire from space)

1490 - 10,000 killed by meteorites in China

1700 - Tsunamis in Japan - no earthquake cause known

1800 - April 5, event in North America

1819 - November 9 or 19 event, Canada and US

1885 - February 24, event in Pacific

1892 - May 3, event in Scandinavia

1908 - June 30, event over Tunguska, Siberia

1930 - August 13, event in Brazil - 800 square miles of jungle destroyed

1935 - December 11, event in British Guyana

1947 - Sikhote - AIin impact in USSR

From *Our Place in Space* by Gerrit Verschuur– Contained within *Natural Catastrophes During the Bronze Age Civilisations* – Edited by Benny J. Peiser, Trevor Palmer and Mark E. Bailey

Map of the Area and Correspondence

See Garden of Eden section of www.goldenageproject.org.uk