

# THE CTHULHU PRAYER SOCIETY NEWSLETTER

## Fifth Meeting of The Providence H.P. Lovecraft Friends' Group

JULY 29, 2001 — For the fifth successive month, writers, artists, composers and others who are fans of the writing and mythos of H.P. Lovecraft, America's greatest horror writer, gathered on a Sunday morning for decidedly unchurchly goings-on. This time, the group left Providence for a tour to haunted Fall River, Massachusetts to visit the grave and haunts of Lizzie Borden.

This session was hosted by Dr. Jacob Rabinowitz, resident of Fall River and classical scholar. Spewed from Brown University as an adept in nine languages including ancient Egyptian, Dr. Jake is uniquely qualified to find the mythic and Cthonic in the everyday, even in a sad mill-town such as Fall River — just a few steps above Innsmouth.

Fall River's principal claim to infamy, of course, is Lizzie Borden, so the Cthulhu gang came equipped with poetry, music, fiction, and other Bordeniana, ready to be thrilled with a tour of the actual house where someone took an axe to Ms. Borden's father and stepmother.

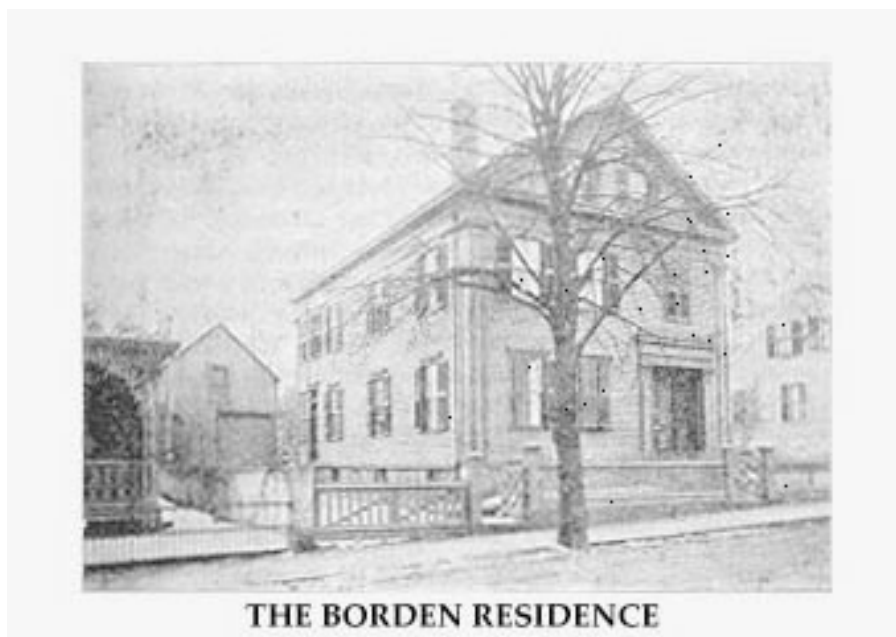
Dr. Jake's colorful invitation also promised a fine repast at the T.A. Portuguese Restaurant, and pastries at the Café Europa, "with its alarming array of Portuguese pastries and perhaps the best espresso in New England." We were also promised some Innsmouth-style interior decorating tips from the Portuguese lamp shops of Columbia Street. The survivors of the tour repaired to Dr. Jake's apartment in a converted nunnery for tea, crystallized ginger, parlor games and furling.

Brett Rutherford provided some musical treats on CD, including the "mad scene" from Jack Beeson's opera on Lizzie Borden, excerpts from the 1999 Broadway musical on Lizzie, and a Cyril Richard song on Lizzie Borden with the refrain, "You can't chop up your father in Massachusetts."

The Cthulhu Prayer Brunches are intended to be both social and intellectual, bringing together both fellow creative artists and Lovecraft fans of all ages. Most brunches will be followed by field trips to Lovecraftian sites, film viewing, poetry/fiction readings or discussions. Artists engaged in Lovecraft-related work are encouraged to bring their work to show and share. Artists and writers may also submit work excerpts, poems, graphics files, shameless promotions of their work, and personal ads for trans-dimensional relationships.



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## A REPORTER'S 1893 ACCOUNT OF THE INFAMOUS BORDEN MURDERS

by Edwin H. Porter

At high noon on Thursday the fourth day of August, 1892, the cry of murder swept through the city of Fall River like a typhoon on the smooth surface of an eastern sea. It was caught up by a thousand tongues and repeated at every street corner until it reached the utmost confines of the municipality. A double murder, the most atrocious of crimes, committed under the very glare of the mid-day sun within three minutes walk of the City Hall was the way the story went and it was true in every particular.

Andrew J. Borden and his wife Abbie D. Borden had been assassinated in their home at 92 Second Street. The manner in which the deed was done seemed so brutal, so mysterious, and the tragedy itself so unprecedented that people stared with open-mouthed amazement as they listened to the story passing from tongue to tongue. In the excitement of the that fatal forenoon, until Miss Lizzie told how she had called Mrs. Churchill, and informed her that a murder had been committed. Mrs. Churchill had been to market and was returning home at about 11 o'clock. She saw Bridget Sullivan, who was also familiarly, called "Maggie," running across the street to the residence of Dr. S. W. Bowen, the family physician. The girl told her that "something awful" had happened, and then Mrs. Churchill went into her own house and in a very short time appealed at the kitchen window, which commands a view of the side door of the Borden residence. She saw Miss Lizzie sitting on the back doorsteps, with her face buried in her hands and seemingly in great distress. Mrs. Churchill crossed the yard and offered Miss Lizzie a few words of consolation.

Bridget Sullivan, the only living person who admits that she was in the house at the time of the killing, was the first to give the alarm, by notifying Mrs. Dr. Bowen. Bridget was in her own room in the attic where she had gone to wash the windows; and after completing the work had lain down on the bed to rest. While there she heard Miss Lizzie call and from the tone of her voice knew that something was wrong. Bridget came down quickly and Miss Lizzie said to her, "Father is dead, go for Dr. Bowen."

Bridget obeyed. The physician was not at home and she returned. Then Miss Lizzie sent her for Miss Alice Russell, who lived two blocks away, and who was an intimate friend of the family. Briefly this is what had taken place before the arrival of officer Allen; and up to that time no one except the assassin knew that the body of Mrs. Abbie D. Borden lay weltering in its own blood, in the guest chamber on the second floor. To those who early visited the house, the vision of Mr. Borden's body as it lay on the sofa, with the life blood still warm, and flowing from a dozen gaping wounds was a horror so dread-

## MISKATONIC UNIVERSITY DRINKING SONG

created for  
THE FIRST CTHULHU PRAYER  
BREAKFAST

*Yog-Sothoth! Yog Sothoth!*  
Bless our broth!  
*Tekelili, Tekelili!*  
Bend the knee,  
Drink the tea!  
*Nyarlathotep! Nyarlathotep!*  
Nothing rhymes with Thee!  
*Azathoth! Azathoth!*  
Not more broth?  
*Herbert West? Be my guest!*  
*Dexter Ward* — but not possessed!  
*Ech Pi El! Ech Pi El!*  
Taste the ale!  
*Cthulhu! Cthulhu!*  
Union Brew! Union Brew!



ful that they had no thought of Mrs. Borden. It remained for the neighbor, Mrs. Churchill, and the servant Bridget, to make this awful discovery. Dr. Bowen, who had arrived shortly after Bridget's visit to his house, in response to her call, asked for a sheet with which to cover the body of Mr. Borden. Bridget brought one from one of the back bedrooms on the upper floor. About this time Miss Lizzie asked for her mother. It is related that this request for some one to go and find Mrs. Borden was the second made by Miss Lizzie. Suddenly it dawned upon those present that in the midst of the excitement of the moment, Mrs. Borden had been forgotten. Of all persons in the world, she would have been more deeply interested in the death of her husband and possibly she could give some explanation of his tragic taking off.

Bridget was unwilling to go alone in search of Mrs. Borden and so Mrs. Churchill volunteered to bear her company. The two women passed through the front hall and ascended the stairs in the front entry. Reaching a landing half way up where their eyes were on a level with the floor, they looked across the hall, through an open door, under the bed, and saw the prostrate form of the dead woman. It lay full on the face and the arms were folded underneath. Mrs. Churchill turned and retraced her steps to the kitchen. She sighed audibly as she took a chair and Miss Russell said to her, "What, another?" The reply was, "Yes, Mrs. Borden is killed too."

Bridget had followed back to the kitchen. Special police officer Patrick H. Doherty was the second policeman to reach the house, and he was soon followed by Assistant Marshal John Fleet and officers Michael Mullaly, John Devine and William H. Medley. Before noon several other policemen, friends of the family and local newspaper men, had been admitted to the house. Also Medical Examiner Dr. William A. Dolan and a number of other physicians.

The Medical Examiner arrived at 11:45 and encountered Dr. Bowen and Bridget on his way into the sitting room. He then made a hasty view of the bodies and the house, and commenced immediately to make preparations for holding an autopsy.

John Vinnicum Morse, brother of Andrew J. Borden's first wife and uncle of Misses Lizzie and Emma, arrived at the house shortly before noon. He entered the north gate and went directly to a pear tree in the back yard, where he ate two pears and then returned to the side door and entered; then Miss Lizzie told him that Mr. and Mrs. Borden had been murdered.

Mr. Morse had slept in the guest chamber, where Mrs. Borden's body was found, on the previous night and had after eating his breakfast that morning, left the house to visit a relative who resided on Weybosset street, in Fall River, about a mile from the Borden House.

It was remembered that Mr. Borden fastened the screen on the side door after Mr. Morse passed out at 9:20 o'clock in the morning, and bade his guest return in time for dinner. Mr. Morse had come to the house on the afternoon before the tragedy and had spent a few hours with Mr. Borden and then had driven to the Borden summer residence and farm which are situated about six miles from the city, in the town of Somerset. He returned in time for supper and spent the night in the house.

Miss Lizzie sat at the foot of the back stairs and near the side door, when Mrs. Churchill arrived. She had called her neighbor and informed her that Mr. Borden had been "stabbed or killed."

Then she went into the kitchen and remained a few minutes. Here she was seen by a number of policemen, physicians and others who had been admitted to the house before noon. She told Mrs. Churchill that she had been absent from the sitting room a few minutes and that she spent the time in the barn, where she had gone to get a piece of iron.

About noon she went upstairs to her own bedroom in company with Miss Alice Russell, and the two sat alone for sometime. While in the upper part of the house she was approached by Assistant Marshal John Fleet who made numerous inquiries concerning the condition of things in



The corpse of Abby Durfee Borden.



The body of Andrew Borden.

the house previous to the murders. She told him as she had told others, that Mrs. Borden had received a note delivered by a boy, early in the morning, asking her to come and visit a friend who was sick. She did not know who sent the message nor who delivered it, except that the bearer was a small boy.

Her father, she said, had had angry words with an unknown man on the front steps a few days before the murder. She thought the man was a farm laborer.

The daughter also gave the police information that the entire family had been sick a few days before and that she feared that an enemy had attempted to poison them. The sickness had followed after drinking milk, and this fact was enough to cause Miss Lizzie to suspect that the milk had been tampered with.

The information given by the daughter was carried to Marshal Hilliard and he ordered several policeman to guard the main roads leading out of the city. A squad was also sent to Taunton River Bridge, over which the assassin, if he was a

farm laborer, would pass on his way to the country. The police questioned Bridget closely and she corroborated what Miss Lizzie had said about the sickness in the family.

So confused was the servant girl that she could tell no coherent story of the condition of things about the house during the forenoon. She did say that during the morning, Mrs. Borden had instructed her to wash the windows from the outside of the house. This she has done. After receiving this order from her mistress, Bridget did not see her alive again. She finished her work before 10 o'clock, and while in the sitting room heard Mr. Borden trying to get in at the front door.

He had returned from the city. She opened the front door and let Mr. Borden in and then went up stairs. This was the last she saw of him until Miss Lizzie called her when the body was found.

When the police officers arrived they began to search the house for the weapon, and Bridget showed them into the cellar. Here they found four hatchets, one of which had the appearance of having been washed after recent use. At this time little attention was paid to this particular hatchet, but all the hatchets were taken to the police station.

Shortly after 12 o'clock special officer Philip Harrington arrived at the house, as had other policemen. He joined in the search for evidence which would lead to the arrest of the murderer or to the discovery of the weapon. After viewing the bodies he went to Miss Lizzie, who was in her own room talking with Miss Alice Russell. He asked her if she knew anything about the crime, and she replied "No." It was then that she detailed to him the story of her visit to the barn, and he cautioned her to be careful, and to give him all the information in her possession.

"Perhaps tomorrow," said the officer, "you will have a clearer frame of mind." "No sir," responded Miss Lizzie with a gentle courtesy, "I can tell you all I know now just as well as at any other time."

The conversation was prolonged and during the entire time Miss Lizzie controlled her emotions wonderfully for a young lady who had so recently been called upon to witness the blood of her father and stepmother flowing from dozens of hideous wounds. When the officer left her he went to the City Marshal and related his experience. The public was not informed that then and there suspicions were aroused in the minds of the police that the daughter knew more of the circumstances of the tragedy than she cared to tell, but nevertheless this was true.

All through that eventful day the police searched the house, cellar, yard and barn but found nothing to confirm any suspicions which they might have entertained as to who was guilty of the crimes.

Hon. John W. Coughlin, mayor of the city, who is a physician, was among the first at the house and he took an active interest in the search for evidence. From cellar to attic the police and physicians delved into every nook and corner; every particle of hay in the barn loft and every blade of grass in the yard was turned over; and when the day was done the harvest had been nothing, except the discovery of the double murder of a peaceful old man and his harmless wife, struck down in their home like an ox in the stall.

There was no assassin, no weapon, no motive; just the crime and veil of mystery surrounding which apparently time alone could lift.

They found the house in perfect order. The front and cellar doors were locked; and every window sash was down. Even the victims as they lay showed no signs of a struggle and the blood which spurted as the weapon fell had not bespattered the rooms and furniture as it generally does under circumstances such as these which surrounded the butchery of the Borden. They found two persons in the house living and two dead; and the living could throw no light upon the darkness which clouded the stark forms of the dead.

A sturdy old man, rich in this world's goods, highly esteemed, retired from active life, without a known enemy, and his equally unoffending wife were cut down in their own house, in the broad daylight; and the assassin had left ab-

## NEXT MEETINGS

SUNDAY SEPTEMBER 23rd  
SUNDAY, OCTOBER 21st  
SUNDAY, NOVEMBER 18th  
SUNDAY, December 16th

11:30 am, Union Station Brewery Exchange Place, in Kennedy Plaza. Program to be announced for "field trip" after the brunch.

Special outings also being planned for Chinese art exhibits in Salem and Duxbury, an HPL tour of Salem and Marblehead, and a recreation of one of more of Lovecraft's rural Rhode Island antiquarian jaunts (Chepachet, Foster, Gloucester).



solutely no trace of himself. No man had seen him enter the house and no one had witnessed his departure.

The city was excited as it never was before; thousands of people hurried from their places of business, from the workshop and the mill, and gathered in the street in front of the house. Newspaper men from the principal cities of New York and New England, to which the telegraph had communicated the news of the astounding crime, arrived on the afternoon trains; and as the day wore on, the dark mystery grew darker and the task of fastening the crime on the guilty party took on the semblance of an impossibility.

Medical examiner Dolan and a corps of physicians held an autopsy on the bodies in the afternoon and found that thirteen blows had rained upon the head of the unsuspecting Mr. Borden, and that no less than eighteen had descended upon the skull of Mrs. Borden. The cuts were deep and long— and any one of them would have produced instant death.

Could any but a maniac have inflicted those pitiless wounds; or could any but a madman have struck so ruthlessly and unerringly and watched the effect as the weapon sped on its mission of death, time and time again? These were questions which suggested themselves to the public, but they were unanswered and seemingly unanswerable.

This was the baffling condition of things which beset Marshal Hilliard and his officers after the scene had been hurriedly gone over. Out of this chaos of bloody crime and bewildering uncertainty, the police were expected to bring light and order. It was a herculean task yet they went to work with an energy prompted by duty, and spurred to greater efforts by the public demand that justice overtake the author of the foul deeds.

**ANDREW J. BORDEN** was numbered among the wealthy and influential men of Fall River. He was one of the family of Bordens whose name has always been identified with the growth and business enterprises of the city and vicinity. No one knows how much money he was worth, but persons who are as well acquainted with his affairs as he would allow them to be, do not hesitate to say that his estate was worth \$300,000. He was a thrifty Yankee in every sense of the word, and nothing that represented money was ever wasted by him. No other man knew the worth of a dollar better than he, and none were more thoroughly convinced that a dollar properly invested would bring its returns many times over.

Upon the death of his father Abraham Borden, he came into possession of small estate but his fortune was of his own creation. Abraham Borden sold fish in the streets of Fall River when the place was but a village and thus by patient and plodding economy accumulated enough money to purchase a house on Ferry street and some other real estate.

But the murdered man was never too busy counting his money to stop and do a day's work. He owned farms across the Taunton river in Somerset and took the greatest interest in superintending the work thereon. There was nothing like style around him, and no one wondered why he did not make a show of his money. He had devoted his entire life to its accumulation, spending but little and it was not expected of him to change his manner of life in old age, although many a man would have pursued a different course in his declining years.

Other matters besides those of the farm occupied the old man's attention, for he was a prominent figure in financial circles. He was president of the Union Savings Bank, a member of its Board of Trustees and investment, a director of the Merchants Manufacturing Company, the B. M. C. Durfee Safe Deposit and Trust Company, the Globe Yarn Mills, the Troy Cotton and Woolen Manufactory and other manufacturing concerns. In each of these he had large sums of money invested and the returns were undoubtedly large.

In early life Mr. Borden was for many years engaged in the undertaking business with William M. Almy and Theodore D. W. Wood and it

was his boast that during his active business life he never borrowed a cent or gave a promissory note. He was always conservative in his investments of money; a man of excellent judgment, and he was often called upon to act as appraiser on land Values. Two years before his death he erected one of the finest business blocks in the city located at the corner of South Main and Anawan streets. His mode of living was simple and unostentatious, and he was a pattern of old time New England industry, thrift, economy and good citizenship. He was twice married, his first wife being Sarah A. Morse, daughter of Anthony Morse. His second was Abbie D. Gray, daughter of Oliver Gray, whom he married on June 6, 1865.

He lived with his two daughters Emma L. and Lizzie A., who were issues of his first marriage. At the time of his death he was seventy years of age and his wife was sixty-seven. Miss Lizzie Andrew Borden was thirty-two years old at the time of her father's death. Her mother died when she was two.

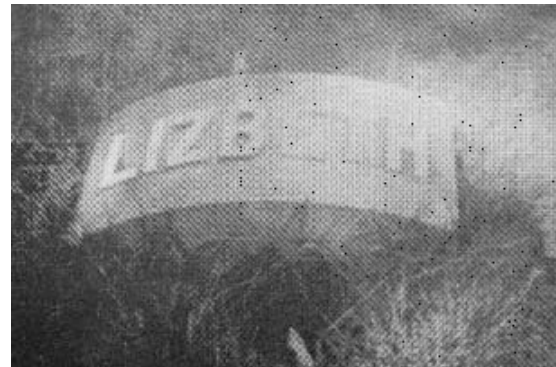
### Hiram C. Harrington's Account

**HIRAM C. HARRINGTON**, a brother-in-law of Andrew J. Borden, having married Mr. Borden's only sister, Luanna, and a blacksmith by trade, threw some light upon the manner in which the Borden's lived which was highly interesting and important for the police to know.

He said in an interview the day after the murder:

I have become acquainted with a good deal of the family history during years past. Mr. Borden was an exceedingly, hard man concerning money matters, determined and stubborn, and when once he gets an idea nothing could change him. As the motive for this crime it was money, unquestionably money. If Mr. Borden died he would have left something over \$500,000 and in my opinion that estate furnishes the only motive, and a sufficient one for the double murder.

Last evening I had a long interview with Miss Lizzie, who has refused to see anyone else. I



Lizzie Borden's gravestone.

questioned her carefully as to her story of the crime. She was very composed, showed no signs of any emotion, nor were there any traces of grief upon her countenance. That did not surprise me, as she is not naturally emotional. I asked her what she knew of her father's death and after telling of the unimportant events of the early morning she said her father came home at 10:30 o'clock. She was in the kitchen at the time, she said, but went into the sitting room when her father arrived. She was very solicitous concerning him and assisted to remove his coat and put on his dressing gown and inquired about his health. She told me that she helped him to get a comfortable reclining place upon the sofa, and asked him if he did not wish the blinds closed to keep out the sun so that he could have a nice nap. She pressed him to allow her to place an afghan over his body, but he said he did not need it. Then she asked him tenderly several times if he was perfectly comfortable, if there was anything she could do for him and upon receiving assurance to the negative she withdrew.

I then questioned her very carefully as to the time she left the house, and she told me positively that it was about 10:45. She said she saw her father on the lounge as she passed out. On leaving the house, she says she went directly to

the barn to obtain some lead. She informed me that it was her intention to go to Marion on a vacation, and she wanted the lead in the barn loft to make some sinkers. She was a very enthusiastic angler. I went over the ground several times and she repeated the same story. She told me that it was hard to place the exact time she was in the barn, as she was cutting the lead into sizable sinkers, but thought she was absent about twenty minutes. Then she thought again, and said it might have been thirty minutes. She entered the house and went directly to the sitting room, as she says she was anxious concerning her father's health. "I discovered him dead," she said, "and cried for Bridget, who was upstairs in her room."

"Did you go and look for your stepmother?" I asked. "Who found her?" But she did not reply.

I pressed her for some idea of the motive and the author of the act, and after she had thought a moment she said, calmly:

"A year ago last spring our house was broken into while father and mother were at Swansea, and a large amount of money stolen, together with diamonds. You never heard of it because father did not want it mentioned, so as to give the detectives a chance to recover the property. That may have some connection with the murder. Then I have seen strange men around the house. A few months ago I was coming through the back yard, and as I approached the side door I saw a man there examining the door and premises. I did not mention it to any one. The other day I saw the same man hanging about the house, evidently watching us. I became frightened and told my parents about it. I also wrote to my sister at Fairhaven about it."

Miss Borden then gave it as her opinion that the strange man had a direct connection with the murder, but she could not see why the house was not robbed, and did not know of any one who would desire revenge upon her father.

Yes, there were family dissensions, although it has been always kept very quiet. For nearly ten years there have been constant disputes between the daughters and their father and stepmother. It arose, of course with regard to the stepmother. Mr. Borden gave her some bank stock, and the girls thought they ought to be treated as evenly as the mother. I guess Mr. Borden did try to do it, for he decided to the daughters, Emma L. and Lizzie A., the homestead on Ferry Street, an estate of 120 rods of land, with a house and barn, all valued at \$3,000.

This was in 1887. The trouble about money matters did not diminish, nor the acerbity of the family ruptures lessen, and Mr. Borden gave each girl ten shares in the Crystal Spring Bleachery Company, which he paid \$100 a share for. They sold them soon after for less than \$40 a share. He also gave them some bank stock at various times, allowing them of course, the entire income from them.

In addition to this he gave them a weekly stipend, amounting to \$200 a year. In spite of all this the dispute about their not being allowed enough went on with equal bitterness. Lizzie did most of the demonstrative contention, as Emma is very quiet and unassuming, and would feel very deeply any disparaging or angry word from her father.

Lizzie on the contrary, was haughty and domineering with the stubborn will of her father and bound to contest for her rights. There were many animated interviews between father and daughter on this point. Lizzie is of a repellant disposition, and, after an unsuccessful passage with her father, would become sulky and refuse to speak to him for days at a time.

She moved in the best society in Fall River, was a member of the Congregational church, and is a brilliant conversationalist. She thought she ought to entertain as others did, and felt that with her father's wealth she was expected to hold her end up with others of her set. Her father's constant refusal to allow her to entertain lavishly angered her.

I have heard many bitter things she has said of her father, and know she was deeply resentful of her father's maintained stand in this matter. This house on Ferry street was an old one, and was in constant need of repairs. There were two tenants



paying \$16.50 and \$14 a month, but with taxes and repairs there was very little income from the property. It was a great deal of trouble for the girls to keep the house in repair, and a month or two ago they got disgusted and deeded the house back to their father. I am positive that Emma knows nothing of the murder.

*This is part of a book, written by a Fall River newspaperman, published in 1893. Lizzie Borden purchased almost the entire press run herself, and had the copies destroyed. Only two or three copies of the book survived.*



## LOST CIVILIZATION UPDATE FROM THE R'LYEH NEWSROOM

### OLDEST "LOST CITY" FOUND IN PERU

By Will Dunham

WASHINGTON (Reuters) — At the same time as ancient Egyptians were building their pyramids, people along the Peruvian coast were erecting massive stone structures in the first major city in the Americas 4,600 years ago, archeologists said in June.

A husband-and-wife team from Illinois and a colleague in Lima say Caral, located in the Supe River valley of central Peru, may represent the birthplace of civilization in the Americas. The site was first discovered in 1905 but remained unexplored. Its significance was unknown until new radiocarbon dating revealed its stunning antiquity.

The researchers found the site dated back to 2627 BC. That meant the emergence of urban life and monumental architecture in the New World took place nearly 800 years earlier than experts previously had thought.

Nestled on a parched desert terrace above a green valley floor, Caral is dominated by a central zone with six large platform mounds built from quarried stone and river cobbles set around a huge public plaza area. The largest structure soars 60 feet high and measures 450 feet by 500 feet at the base.

"I think this is really cool stuff. This is a wonderful site, one of the most exciting things I can think of," said Jonathan Haas of the Field Museum in Chicago.

Haas, his wife Winifred Creamer of Northern Illinois University, and Ruth Shady Solis of the Universidad Nacional Mayor de San Marcos in Lima studied the site. The findings appear in the journal *Science*.

#### One of the Great Ancient Civilizations

Caral was flourishing at the same time as the pyramids were going up in Old Kingdom Egypt and early complex civilizations were percolating in Mesopotamia, China and perhaps India.

"You probably had some of the biggest structures in the world outside of Egypt in the Supe valley," Haas said.

The researchers used radiocarbon dating to determine the ages of reed fibers from woven bags found at Caral that workers had used to haul stones for the buildings and actually left them inside the enormous structures. Because the reeds live for only one year, the dates were extremely specific.

Caral predated by thousands of years some of the great New World civilizations — the Incas in the 15th century AD in Peru, the Mayans in the first millennium AD in Central America and the Aztecs in the 15th century AD in Mexico.

Caral is located 120 miles north of Lima 14 miles inland from the Pacific Ocean. "The real irony is that the peak of civilization in this area

happened before 2000 BC. Nothing much has happened in this valley since," Creamer said.

Other villages in Peru were occupied before 2,600 BC. Some featured small-scale public buildings. But all of the sites in the Americas occupied in the third millennium BC are dwarfed by the 200-acre size of Caral and its monuments.

"At 2600 BC, you have Caral dominating the landscape like a big gorilla," Haas said.

The site, still only partially excavated, and others in the Supe valley point to a remarkably advanced civilization for the time period, despite the fact that pottery had not yet been developed and no grains were grown for food.

All six major structures at Caral were built in just one or two phases, pointing to the existence of complex planning, centralized decision-making and the use of large numbers of workers. The structures were crowned by ceremonial buildings that may have served as symbols of centralized religion.

The Supe River Valley area of Peru, where Caral is located, is hot and dry—not an ideal climate for such a large construction project. The builders installed one of the world's first complex irrigation systems in the city, diverting the water from the Supe River more than a mile upstream. They used the water to irrigate their crops and were able to grow guava, beans, peppers, cotton and fruits. There is no evidence of corn, potatoes, or any other crop that could sustain a large population, giving rise to the speculation that they may have traded with another culture for staple foods.

Archaeologists have always believed that large cities could not develop until food staples such as corn were grown, so that food could be given out in exchange for construction labor.

Caral also boasts eight sectors of modest homes and grand stone-walled residences. The varied styles and quality of Caral's housing point to a richly stratified society, the researchers said. Three sunken circular plazas at the site testify to the emergence of a well-organized religion with open, public ceremonies, the researchers added.

How many people lived there is a mystery. "Whether we're talking about 1,000, 10,000 or 50,000, I honestly don't know," Haas said, but the scale of the structures suggests "there were a heck of a lot of people involved in building them."

### Peru's Nasca Lines Point To Water Sources, Suggest UMass Researchers; No Sign of Ancient Astronauts

AMHERST, Mass. — The ancient "Nasca lines" created on the desert floor by native peoples in Peru thousands of years ago may not just be works of art, according to a team of scientists from the University of Massachusetts. The team, which includes hydrogeologist Stephen B. Mabee and archeologist Donald Proulx, suggests that some of the mysterious lines may in fact mark underground sources of water. The research project is detailed in the December issue of *Discover* magazine. The team also includes independent scholar David Johnson, an adjunct

research associate in the department of anthropology at UMass, and geosciences graduate students Jenna Levin and Gregory Smith.

The lines were constructed in the desert in southwestern Peru about 1,500-2,000 years ago by the Nasca culture, prior to the invasion of the Incas. The lines, which are etched into the surface of the desert by removing surface pebbles to reveal the lighter sand beneath, depict birds and mammals, including a hummingbird, a monkey, and a man, as well as zigzags, spirals, triangles, and other geometric figures. Called "geoglyphs," the elaborate figures are located about 250 miles south of Lima, and measure up to 1.2 miles in length. Their meaning has been the object of centuries of speculation. Some experts have hypothesized that the figures had ceremonial or religious functions, or served as astronomical calendars. But a slate of scientific tests has led the UMass team to theorize that at least some of the geometric shapes mark underground water.

"Ancient inhabitants may have marked the location of their groundwater supply distribution system with geoglyphs because the springs and seeps associated with the faults provided a more reliable and, in some instances, a better-quality water source than the rivers. We're testing this scientifically," said Mabee. "The spatial coincidence between the geoglyphs and groundwater associated with underground faults in the bedrock offers an intriguing alternative to explain the function of some of the geoglyphs."

Proulx, who has studied the region for decades, notes that the symbols on the biomorphs (figures of animals, plants, and humans) and on Nasca pottery are almost identical. "There are representations of natural forces," he says, "Not deities in the Western sense, but powerful forces of sky and earth and water, whom they needed to propitiate for water and a good harvest."

The team has studied the drawings and taken water samples during three separate journeys to Peru, over the past five years.

"So far, the tests indicate that the underground faults provide a source of reliable water to local inhabitants. The water, in comparison with available river water, is better-quality in terms of pH levels, magnesium, calcium, chloride and sulfate concentrations," Mabee said.

Proulx carried out an archaeological survey of more than 128 sites in the drainage area, in conjunction with the geological research. His discoveries provided data for another piece of the puzzle — many archaeological sites were constructed near water-bearing faults and used this important secondary source of water.

The team was able to map the water's sources, and found that in at least five cases, the wells and aquifers corresponded with geoglyphs and archaeological sites. "They always seem to go together," said Mabee.

### Ancient Temple Found Under Lake Titicaca

A team of international archaeologists has found the remains of what's thought to be a large temple below Lake Titicaca on the border between Peru and Bolivia.

The ruins were discovered during a diving expedition on the shores of the lake where the Tihuanacu culture thrived between a thousand and fifteen-hundred years ago in the era pre-dating the Incas.

The explorers said they found the structure after following a submerged road about thirty metres below the surface.

The temple is thought to measure almost twice the size of an average football field.

—From the newsroom of the BBC World Service