

Chapter 1 : Tree Rings Solve World Trade Center Ship Mystery - HISTORY

*The Mystery of the Tree Rings (Mystery Series) [Mark Meierhenry, David Volk, Jason Folkerts] on theinnatdunvilla.com *FREE* shipping on qualifying offers. Deep in the Black Hills of South Dakota, an old ponderosa pine gives shelter to a lost boy and explains how tree rings act as a tree's journal.*

Fusa Miyake, of the Nagoya University in Japan, studied the growth rings of two trees dating back 1, years

and discovered that an explosion of epic proportions occurred between and AD. But there is no record of anything happening in our skies in that period except perhaps for one tiny, obscure account by a 13th-century historian. The problem and this is where we need to call in Mr Holmes of Baker Street is that there should be a record. The problem is, if this was a supernova a star exploding deep in space we should either be able to spot the remains with modern telescopes, or find visual accounts in the written accounts of Chinese and European historians. To get the technical details out of the way first: Trees capture particles from the atmosphere during photosynthesis, and one particle that gets buried within the annual growth rings is carbon Carbon forms when cosmic rays, generally caused by massive solar flares, or by supernovae, interact with nitrogen and oxygen in our atmosphere. In the two cedar trees, and doubtless many other tree records from the period, there was a giant increase of 1. In comparison, the annual variation of the captured isotope is just 0. In recorded history, at least two supernovae have exploded in the skies visible from Earth, their light travelling across light-years to hit the eyes of humans. In and , two stars went nuclear at least, the light from their deaths arrived on Earth in those years. Yet even such giant events, which impacted on those who saw them enough that the records survive to this day, were not powerful enough to result in much of a variation in the carbon levels. So the AD explosion must have been on a scale much greater. But if a supernova had exploded of a force even just equal to the other two witnessed supernovae, we should be able to witness gas remnants the corpse of the star in space. But there is nothing in the skies to suggest this. The only contemporaneous record is from a 13th-century English chronicler, called Roger of Wendover, who, according to New Scientist, is quoted as saying: But if that were the case, it would be the largest solar flare ever recorded from our sun. And if that had occurred, it would have seriously hurt or even entirely destroyed our ozone and at the least leaving traces that we could identify more than 1, years later, let alone leading to reports from all the chroniclers of the age. Researcher Igor Moskalenko, an astrophysicist at Stanford University, who has followed the case but was not involved in the original study, says: He is former Navy, Martial Arts expert.

Chapter 2 : tree rings - Teachers (U.S. National Park Service)

Find helpful customer reviews and review ratings for The Mystery of the Tree Rings (Mystery Series) at theinnatdunvilla.com Read honest and unbiased product reviews from our users.

Complete a guided reading using the Tree Ring Background Reading handout. Now the students will investigate tree age by matching similar tree rings. Line up the matching rings, and make sure they always stay in the same curved direction. Core Sample D goes further back to the left so D is an older tree. In small groups or in partners have the students line up from top to bottom the larger core samples A through F in the Tree Core Sequences handout. Students must cut out all six core samples. Arrange them on the paper by aligning matching tree rings. Have students share out any observations. Line up all six tree rings. It might be a good idea to tape them together after you think you have the right sequence. It might also be a good idea to write the year for each ring starting backwards from core F to help answer the following questions. When was the first year of growth, the pith, for the oldest tree? If the youngest tree F was cut down in , then when was the oldest tree E cut down? The oldest tree was cut down to build the cabin, meaning it was cut down in the same year the cabin was built or close to that time, so when was the cabin built? The Nintendo Wii came out in Which core was cut down in the same year? When was the second oldest tree C cut down? Did it get wetter or dryer from the oldest tree to the youngest tree? Write your initials in the tree ring for the year that you were born. Tree Ring Activity Questions.

Chapter 3 : How Tree Rings Solved a Musical Mystery - The Crux

Written for young people at a second to fourth grade reading level, The Mystery of the Tree Rings is a simple "mystery" book about two children, Max and Hannah, taken on a nature trip by their grandfather to find a ponderosa pine that's nearly eight hundred years old.

Nash May 3, Their analysis ultimately determined that the instrument was built much later than previously thought. Henri Grissino-Mayer Modern science is full of surprising analytical techniques that can be used in a wide variety of remarkable circumstances. Believe it or not, tree ring analysis has even been used to date wooden musical instruments like violins and cellos, and in at least one case, a double bass. The double bass is a member of the viol family and looks like a large cello, but it can produce sounds a full octave lower than a cello. Because of its size it is harder to play than its stringed-instrument cousins, so it is less commonly seen in orchestras and other musical ensembles. Just over a decade ago, dendrochronologists analyzed tree rings in the wood from which the world-famous Karr-Koussevitzky double bass was made. Serge Koussevitzky, one of the most renowned double bass players of all time, died in , but his instrument was given to double bassist Gary Karr in . After that it became known as the Karr-Koussevitzky double bass. Upon his retirement in , Karr donated the double bass to the International Society of Bassists, and four dealers, appraisers, and experts jumped into action to professionally evaluate the instrument for the first time. After analyzing stylistic and technological attributes, they suggested that the double bass dated to about and was probably from France. It was at this point that the tree ring experts got involved. They carefully secured the double bass to a movable platform so that they could safely measure the tree rings visible in the spruce wood used to make the instrument. Given its size—more than a meter long and 33 to 63 centimeters wide—this was not an easy task! They measured a total of growth rings in two long, overlapping sequences in two of the many pieces of wood that make up the instrument. They then mathematically compared the measured ring-width data to known tree ring reference chronologies from across west-central Europe. Grissino-Mayer and colleagues determined conclusively that the last growth ring present on the double bass grew in . Statistically, the ring-width pattern from the double bass is most similar to growth patterns in trees growing in the eastern Alps. Prior to the tree ring analysis, unconfirmed and unwritten histories of the double bass held that the world-famous Amati brothers made it in Cremona, Italy, in . Antonio and Girolamo Amati were the most renowned instrument makers of their day, and they remain famous for the quality of their workmanship and the prestige associated with their pedigree. Dendrochronology demonstrates conclusively that the Amati brothers cannot possibly have crafted the instrument in . Indeed, the best we can say is that some unknown luthier made it at least years later. Circumstantial evidence supports this conclusion as well: If the Amati brothers made the instrument, it would be the only known double bass in their oeuvre, which otherwise includes 77 violins, 27 violas, and 12 cellos. Museum curators, appraisers, and private collectors spend a lot of time and money conducting provenance research in an effort to generate life histories and chronologies for specific objects under their care. They do so for good reason: Reliable provenance can demonstrate authenticity and legality, and can affect the monetary value of rare objects. In the big picture, though, more was gained than lost. Science is about finding the truth, and truth is more important than money and prestige put together.

Chapter 4 : Mystery of Infamous 'New England Dark Day' Solved by Tree Rings | MU News Bureau

Max and Hannah take a trip to the Black Hills of South Dakota with their grandfather; but when Max gets separated from them in the woods, he sits down under an old Ponderosa Pine and hears the secrets in the life of the tree.

Glide through the forest in an enclosed gondola and see spectacular views. Walk among the largest milled-redwood carvings in the world. Journey into the lives of the first Americans through our collections of artifacts. Immerse yourself in the rugged beauty of our new Wilderness Trail. The Amazing Redwood Tree. To someone who has never seen one, a Redwood tree must seem to be something from a tall tale. Averaging eight feet to as much as twenty feet in diameter, and some as tall as three hundred and seventy five feet. That is a tree taller than the Statue of Liberty, from base of the pedestal to the tip of the torch. A tree larger around and through than a Greyhound bus. Absolutely the largest living thing on earth. A typical Redwood forest contains more biomass per square foot than ANY other area on earth, and that includes the Amazonian rain forests. The Redwoods in Pre-History. These largest of living things are from an ancient line, and near-relatives of redwoods were present on earth at the same time as the dinosaur. Once found almost world-wide, their natural range is now restricted to the foggy coastal belt of Northern California the sequoia sempervirens, a strip in the Sierra Nevada mountains of sequoiadendron gigantea and a small group of meta sequoia Dawn Redwood in a remote valley in China. These are the only living forests left of a tree line that at one time spanned most of the the earth. The Coastal Redwoods thrive on, and indeed require, the heavy fogs that are normal daily occurrences along the coast. The degree average temperature of the area are also important to the life cycle of these trees. These two conditions are limits to the modern day range of these awesome giants. They will grow about anywhere, as evidenced by photos people have sent us over the years of trees growing in such disparate places as Fresno California, Waycross Georgia, Florida and even one hardy voyager in Phoenix Arizona. But they will never attain their true size and stature without the Coastal fogs and temperatures that nurture them and at the same time keep other competing species, such as pines, stunted and sodden. The bark of a coastal redwood is very thick, as much as a foot in places. And it exhibits an unusual property when exposed to fire - it chars into a heat shield. It actually turns into a pretty effective abalative, similar to the way a heat shield on a re-entry vehicle works. The chemical composition of the tree itself is apparently distasteful or even poisonous to normal tree pests like termites and ants. The wood could withstand the battery acid and still retain its shape. Redwood is very resistant to water-associated rot. It is not uncommon to drill a well in a creek bed in this area and end up drilling right through a redwood log that may have been buried there for thousands of years. The wood comes out of the pipe sound and in good shape. Unusual Redwood Proliferation Strategies. A live redwood that is knocked over will attempt to continue growing via its limbs. If undisturbed, the limbs pointing up will turn into trees in their own right, and this is indeed the source of many row groups of trees. Cathedral or family groups of trees are simply trees that have grown up from the living remains of the stump of a fallen redwood, and since they grew out of the perimeter, they are organized in a circle. If you looked at the genetic information in a cell of each of these trees, you would find that they were identical to each other and to the stump they sprang from. The redwood burls are another survival strategy. Their growth is held in check by the presence of chemical signals in a living redwood. If the tree should die, or even be stressed, say by low rainfall or fire, the chemical signal weakens or vanishes and the burl will burst forth into verdant life. Burls kept in a shallow pan of water will grow almost indefinitely. They can also continue on to become a full grown redwood tree. At the very least, if watered they will produce a lovely fringe of green pseudo branches and make a very interesting looking and unusual house plant. Lastly, there is the conventional sexual reproduction system of seeds. The rest came from one of the various cloning-based proliferation strategies. If you connect these two facts, you will come to realize that some of those trees out there could be the last in a 20, or 30, year or more line of the SAME tree reproducing itself over and over again! Genetically, they are the same tree that grew from a seed all those centuries ago! Would it be proper to place the age of one of these trees as the true age of its unchanged genetic material? The information below was gleaned from two excellent articles on the subject of redwoods. Thanks and appreciation to the

authors, Dr. Baker and James A. Snyder for allowing us to make them available on the internet. The Redwood - Surviving on The Floodplains. Coastal Redwoods have the unique ability to survive rising soil levels over their immense lifespans. Rising ground levels are commonly brought about by flood deposits, deposits that typically smother other trees root systems, killing them. The redwood simply grows a new lateral root system! Seven successive layers of roots were observed on one fallen redwood meaning that the ground level had risen dramatically up the tree seven times and each time the tree responded with a new root system. Couple this with redwoods ability to survive long periods of immersion and their immense durability in the face of flood borne debris and you will realize that the redwood can survive and indeed thrive in flood planes that wipe out less hardy tree species. Three Living Species of Redwood. They are classified as three separate genera: Coastal Redwood *Sequoia sempervirens*, Sierra Redwood *Sequoiadendron gigantea* and the Dawn Redwood *metasequoia* or *glyptostroboideis*. The *metasequoia* was first found as a fossil by a Japanese botanist in China in 1941. Later, also during World War II, living specimens were discovered in a single valley in central China. The dawn redwood is deciduous while the *sempervirens* and the *gigantea* are both evergreen. Redwoods in Ancient Times. The Dawn Redwood and the Coastal Redwood spanned the Northern Hemisphere 65 million years ago while their beginning was much earlier, in the Upper Cretaceous, about 100 million years ago. From their maximum coverage during the beginning of the Tertiary period, 65 million years ago, the Dawn Redwoods have steadily declined until the natural population ended up being confined to a small valley in Central China, while the Coastal Redwood exists in a narrow strip along the Northern California coast. The Sierra Redwood covered the same areas as the Coastal and the Dawn and in addition, Europe, and are now living in separate small groves in narrow valleys in a small area of the Sierras. The "Sequoia" part of *Sequoia sempervirens* and *Sequoiadendron gigantea* is in honor of the great Cherokee patriarch of the Cherokee written language, Sequoia. Several other names were used prior to settling on this most appropriate one. Other early names were "Wellingtonia" in honor of the Duke of Wellington and the very patriotic "Americus". Redwoods compensate for induced leans caused by shifting slopes, collisions of other trees, flood pressure and tectonic induced tilting, by the unusual ability to "buttress" their undersides through accelerated growth on the downhill side. It is possible to find groves of trees all leaning in the same direction! Redwoods are Very Fast Growing. A couple of notable examples: One tree that gained seven feet in diameter in years. There are reports of second-growth yields of board feet per acre per year. The Brotherhood Tree see tall photo at right was named in hope for the brotherhood of man. It is over 1000 years old, 19 feet in diameter, 60 feet in circumference and 200 feet tall. It is truly awe inspiring to stand next to this massive living entity and realize it was here and growing for much of recorded human history. This tree is one of the mighty *sequoia sempervirens*, or Coast Redwood. There is evidence on the bark of a recent within the last years fire. The bark of these trees chars before it burns, forming an ablative shield, protecting the living tree. The area in which this tree stands was logged in the 1800s, but this magnificent specimen was spared for some unknown reason. Access to the base of the tree and views of the top from a vista of about 100 feet are available. This tree stands on the Forest Experience section of the trail. A group of nine trees growing together as one - making this the worlds largest "cathedral" tree! Approximately 1000 years ago a very large tree stood in the middle of this formation. This tree is the site of Easter services each year and also many, many weddings.

Chapter 5 : Roanoke Colony deserted - HISTORY

The Mystery of the Maize follows in the award-winning footsteps of The Mystery of the Round Rocks and The Mystery of the Tree Rings, but has a new illustrator, Marty Two Bulls, Sr. We're expecting the book to arrive in Pierre sometime in early April and we'll be making it available for direct purchase and in bookstores immediately that we.

Chapter 6 : Mystery of volcanic eruption that shaped ancient Mediterranean solved using tree rings

An ancient mystery concerning one of the largest volcanic eruptions in the last 4,000 years has been resolved using data collected from tree rings. The eruption of the Thera volcano on the Greek.

Chapter 7 : theinnatdunvilla.com: Customer reviews: The Mystery of the Tree Rings (Mystery Series)

Using tree rings, scientists have identified the origins of a wooden ship unearthed at the former World Trade Center site in Manhattan four years ago. Using tree rings, scientists have identified.

Chapter 8 : Mystery of the Tree Rings | South Dakota Historical Society Press

Mystery of volcanic eruption that shaped ancient Mediterranean solved using tree rings.

Chapter 9 : Tree Ring Mystery | The Common Constitutionalist " Let The Truth Be Known

The mystery of the offset chronologies: Tree rings and the volcanic record of the 1st millennium Jonny McAneney Independent researcher Volcanism is an important aspect of climate science. When a.