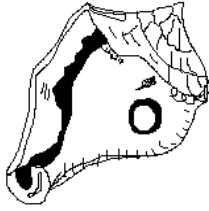


SWFAS



SOUTHWEST FLORIDA ARCHAEOLOGICAL SOCIETY

Inside this Newsletter

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Wet and

Wild: This is about as bad as it gets. Monitoring at the Olde Marco Inn during the day Tropical Storm Harvey came ashore just south of Marco Island.

In the Eye of the Storm: Nasty Weather Makes for Challenging Archaeology.

I remember a song from

my younger days that went something like: "...in the rain and the snow and the bright sunshine..." Well, those people working at the Olde Marco Inn haven't been snowed on ... yet. Just about every sort of good and bad weather has manifested itself on this long-running project. Probably the most challenging day was last September 20th when the Archaeological and Historical Conservancy (AHC) was working *two* projects on Marco. Winds of 35 mph and driving squalls of rain made the job tricky. We found it was very hard to profile walls under these circumstances, particularly when the walls kept collapsing! Wet paper doesn't accept the mark of pen or pencil very graciously either, and it's hard to hold an umbrella over yourself while drawing profiles and bagging material... complain, complain.

Well, doing archaeology "on the edge" was interesting. You get to learn limits of what can and can't be done - and sometimes - just, maybe - how to push the limits a bit, to map or recover samples and so on. Seeing this severe weather first hand (at one project less than 100 feet from the Court of the Pile Dwellers!) gave me a greater appreciation and receptivity to the provocative ideas expressed by Dr. Robert Gore in the important article on climate and archaeology presented in this issue of the Newsletter. We are going through "interesting times" with the atypical weather of the last several years. This

shows again why archaeological investigation and the study of paleo-climatology may be of more vital and immediate importance than most of us would first imagine. Just the rise of a few feet in our sea level, and we would be doing "underwater research" on not only archaeological sites, but our own "situation" as well!

THE DATEBOOK

November 10th - SWFAS Board of Directors Meeting, Hampton Inn, Bonita Springs, 6:30 PM

November 17th - General Meeting
Bonita Springs Community Center,
7:30 PM

About SWFAS

The directorate: President Wayne ("Bud") House, first vice president Don Taggart, second vice president Betsy Perdichizzi, membership secretary Brenda Hamilton, treasurer Jack Thompson, recording secretary Jo Ann Grey, directors Valerie Flanigan, Sue Long, Dottie Thompson, Jo Ann Grey, Charles Dugan, Annette Snapp, Tom Franchino, John Beriault and Charlie Strader.

The committees: Field: Beriault, 434-0624; Hospitality: position open; Membership: Brenda Hamilton; Publicity: Dottie Thompson, 597-2269; Sales: Valerie Flanigan, 262-8394; Finances: Jack Thompson 597-2269, 774-8517; Lab: (774-8517), Art Lee, 261-4939, Walt Buschelman, 775-9734, Jack Thompson, 597-2269.

To Join: Address your check to the Southwest Florida Archaeological Society, P.O. Box 9965, Naples, FL 34101. Dues are: Individual \$20, Individual Sustaining \$50.00, Family \$35, Student \$15.

Any questions, comments, contributions to the Newsletter: John G. Beriault, acting editor, P.O. Box 9074, Naples, FL 34101-9074 or Email to: JGBeriault@aol.com.



POTSHERDS AND POTSHOTS... AN ONGOING SERIES BY ROBERT GORE

CUSHING'S KEY MARCO AND TIME, TIDE, AND RAPID CLIMATIC CHANGE. II.

In what can only be considered a stunning reversal of earlier ideas on climatic change, a series of investigations using cores from annual layers of glacial ice has revealed that, as far as the Holocene Epoch (the one in which we are now living) is concerned, "things ain't what they used to be." Some 11,700 years BP the climate in the North Atlantic region switched from terminating ice-age (Pleistocene) into our present relatively warmer period, called an interstadial (Holocene). Temperatures increased 5-10 degrees Celsius, sea ice decreased, atmospheric circulation patterns changed, the Gulf Stream shifted its course, and low latitude continental regions became both

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warmer and wetter. Although it required about 1,500 years to complete the change-over, and several thousand more years in which glaciers both melted and retreated northward, the biggest shock was that the main part of the transition took not centuries or millenia but (are you ready for

this?) just forty (40) years. Much of the world-wide climate changes occurred over a 20 year period, and a 4 degree Celsius increase in mean atmospheric temperatures produced extensive climatic impacts that took place in a period as short as ten years.

It has all happened before, but was believed to have taken much longer. Between 11,700 and about 8,200 years ago was a period called the "climatic optimum." Then, and suddenly, for about 400 years there was a "mini-ice age" before the climate rewarmd. As recently as between 600-500 years BP another "Little Ice Age" took place. Climatologists just didn't have a good explanation for these changes and so they were thought to be anomalies. That's just another way of saying they don't know the cause, and at the same time admitting that chaos theory is alive and well. The old idea, so much simpler, was based on a series of changes in the earth's rotation and orbital speed and direction called the Milankovitch Cycle. These changes occur as regularly as clockwork, provided that the "earth-clock alarms" went off at cycles varying between 90,000-200,000 years. Portions of each cycle were believed to cause climatic shifts that either resulted in, or from, glacial formation. The belief was that each of the four major glaciations which delineated the Pleistocene Epoch rumbled slowly southward every 175,000 years or so, and then just as slowly

rumbled back north, followed each time by four relatively long, warm interglacial (interstadial) periods. Make no mistake--the Milankovitch Cycles still defined the "big picture." But the recently discovered short-term bursts of major climatic changes indicated by the ice core data threw a sledge hammer at the Milankovitch clock and were disturbing until explained.

Blame the ocean, particularly the Gulf Stream, and most especially its warm surficial waters. This great "River in the Sea" is part of the North Atlantic Gyre, a huge surface current system that washes North America, Western Europe and a portion of Africa. The Gulf Stream "originates" (insofar as any loop can be said to have a point of origin) at an arbitrary point east of Florida and west of the northernmost Bahama Islands. Here the Florida Current merges with the Antillean Current and flows northward to about Cape Hatteras before it swings eastward to Europe as the North Atlantic Drift. Turning southward the Drift then flows past the coast of North Africa where its name changes to the Canary [Islands] Current before heading westward across the Atlantic as the North



Figure 1. The World Ocean Conveyor Belt.

Warm surface waters lose heat, gain salinity, and sink to the deep ocean floor. These waters rise again as upwelling forcing warm North Pacific surface waters into the upper portion of the conveyor belt where the cycle repeats. (After Pinet, 1996; Taylor, 1999).

Equatorial Current. Once it reaches South America it turns northwestward, running along the Guyanian-Venezuelan coast where it then divides into a westward leg (Caribbean Current) and eastward leg (Antillean Current). The Caribbean leg enters the Gulf of Mexico via the Yucatan Channel where it becomes the Gulf Loop Current. Exiting the Gulf through the Straits of Florida the Loop Current becomes the Florida Current and swings northward past the Bahama Islands thereby completing the gyre.

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So far so good. The anomaly arises as the warm Gulf Stream waters moving northward exchange their heat (via evaporation) with cooler northern air. A portion of this water becomes cooler; cooler water is denser than warmer water and it sinks. Evaporation also leaves the salt behind in the cooling waters; saltier water is denser water, and it sinks. Now a sort of "conveyor belt" loop begins. The denser, more saline, colder water drops away from the Gulf Stream

surface waters off Iceland and creeps southward along the Atlantic seafloor, around Cape Horn, past eastern Australia, and eventually into the North Pacific Ocean. Here it rises to the surface in a process called upwelling, and the loop is reversed. The upwelling "ex-Atlantic" water mixes with and displaces the North Pacific water and causes it to move south and back westward, this time past northern Australia and into the Indian Ocean. It then repasses Cape Horn and heads north to merge with the warm surface waters of the North Equatorial Current. The rest of the story you already know.

How does all this affect climate? Climate is the long term summation of weather; weather is the day to day atmospheric changes that take place. Climate is a consequence of a complex exchange of heat and water mass between five geophysical/meteorological entities: land, ocean, atmosphere, ice sheets, and space. Enhance or detract any one of these factors and, like plucking a spider's web, the other factors begin to "vibrate." Specifically, if the path of the oceanic "conveyor belt" is plucked (say, by a shift eastward of the Gulf Stream) the immediate effect is alteration of weather patterns--but the long term effect is climatic change. Emphasize warm surface currents on the conveyor belt and eastern North America is warmed and glaciation is held at bay. Restrict sinking

cooler water to one part of the oceanic conveyor and climate begins to cool. Prevent any surface water from sinking on the conveyor belt and climate strikes back and initiates an ice age. The development of instabilities may take centuries, or be triggered by one major event (volcanic eruption, for example). But the transitions between any or all of these modes of circulation are now known to occur over startlingly short periods of time--decades or less. One human generation.

Now let's return to Cushing's Key Marco. Sea levels are a general consequence of four factors: melting ice adding water, thereby raising the level, freezing ice withdrawing water and lowering the level, continents being "weighed down" by glaciers so that sea level appears to rise, and continents rising upward when the weight of glaciers is "lifted from their shoulders" so that sea levels appear to fall. Other considerations include the increased weight of seawater depressing ocean basins downward making sea level fall but increasing the basin volume so it can hold more water,, which spills out when the basin is "decompressed." All these risings and fallings, of course, are relative to where one views the change. But It matters little to our Muspan "oceanographer" whether the tides on his coastline, which are getting higher and higher, are being caused by more water from ice melting in some unknown

northern sea, or by glacier overload and sinking of the land. Both produce the same perceived effects. All he knows is that he is going to have to move his domicile higher up on shore--again. And probably kiss his watering pond and erstwhile wooden artifact repository goodbye.

He has noticed other things as well. His beach is disappearing, the oyster bars are farther offshore, new inlets appear, old inlets disappear, the nearshore currents are stronger, shoals and rip channels form, shift, and deform more often, the waves break higher on the beach and scour the land seaward, the spring tides inundate the village, the middens are no longer high enough, wetlands form where they weren't before, freshwaters turn salt, the nearshore waters are continually more turbid, the red tides come more often,

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fishing declines, and life takes on a serious new portent. He is also becoming aware of climatic changes. The wet seasons are shorter, dry seasons extend into droughts. Winters are colder, summers are hotter. Winds blow longer from the "wrong" direction. Hurricanes are more frequent. And only the gods know what is happening in other lands, although he has heard troubling stories from the Taino in coastal Couva. He decides to make an appointment with the shaman and see if that worthy gentleman can throw any

light on the situation--maybe a propitiation using one of his wooden deity masks.

Today we are presently undergoing an episode of sea level rise. How many of you beachgoers have noticed? Yet data from early in this century indicate that the rate of rising may be as much as several inches per century. Coastlines are already being altered by wind, wave, current, and tide. If the trend continues (and it has been one running for some seven decades now) we should expect major changes in our shorelines. Other, longer-term trends created by the El Nino Southern Oscillation two oceans and half a world away have already exerted weather changes on our continent. Parts of California, Oregon and Washington are literally sliding into the Pacific Ocean. Colder, longer blizzards howl over the upper Plains. Tornadoes have had a banner year. What can we do? Very little. The sea, and what may be the precursor to a major climate change, will be the eventual determinants of our fate. We can put on masks and hide behind them and pray. But in the end, just as, perhaps, did our Muspan "oceanographer", we shall find that our masks don't work anymore.

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ARCHAEOLOGY ON THE WEB By Linda Ballou

The Golden Crescent is a term used to describe a wide swath rich in history and prehistory running along the Atlantic coast from Savannah to Cape Canaveral and inland towards Tallahassee. The National Park Service has a website, The Golden Crescent: Crossroads of Florida and Georgia, that could function as a kind of on-line travel guide for anyone wishing to plan a trip to sites in the region.

The NPS breaks its information down into six Cultural Themes; Mounds and Rings, Coastal Defense, African American Heritage, Plantation Agricultural, Resort Era, and Clash of Colonial Empires. Click on any one of those topics and you go to pages describing their role in the Golden Crescent's cultural history.

Choose Mounds and Rings, for example, and you read about the evolution of mound building, from the earliest freshwater shell constructions along the St. Johns River to ring shaped coastal mounds, followed by inland sand and earth creations.

Each section has a map of sites protected under state, federal or nonprofit ownership and the opportunity to link to many of them for more detailed information. Say you'd like to learn more about the Timucuan mounds at Hontoon Island. Click on the link and you

go to a page with a brief history and description of the State Park site. Also provided are everything you need to know to plan a visit; the address and phone number, directions for getting there, operating hours, fees if any, available facilities, recommended activities and lots of additional information.

If maritime forts are more your thing, you could organize a trip based on a Coastal Defense theme, using the website to guide you in plotting a route. Starting at Fort Matanzas, south of St. Augustine, you can take a free boat ride to the Rattlesnake Island site where rangers conduct a tour. Then stop in St. Augustine to visit Castillo de San Marco before moving north to Fort Caroline -- actually a near full-scale interpretive rendering of the long gone original. On Amelia Island

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you might visit Fort Clinch, the base of Union operations in the area during the Civil War. Continue on across the Georgia border for more forts in the Golden Crescent. To find out what you need to know to arrange a visit to them, and to learn more about the Golden Crescent in general direct your browser to:

<http://www.cr.nps.gov/goldcres/>

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CRAIGHEAD LAB REPORT

by

Ella May Ablahat

October 1999

A single file of men moved swiftly as they wound their way from the shed, located on the Museum grounds, to the Craighead Lab, each carrying a precious box of ancient Indian remnants in the form of shells, bones and pottery sherds on his shoulder. The GREAT MOVE had begun. The scene was reminiscent of Calusa Indians as they padded softly through the Everglades on the way to some hidden camp.

The community service people piled the cartons of priceless treasures from digs as far afield as Heineken Hammock (not far, actually) into the Lab, then disappeared as quietly as they came.

The final effort took place on October 26. The shed has been vacated by the Lab in favor of a storage facility off Airport Road. No archaeology work was done that day as the permanent staff consisting of Art Lee, Jack Thompson, Jean Belknap and of course Walt Buschelman who had arranged the placement of various items, were assisted by Bud and Shirley House, Charlie Strader and Charlie Dugan as three trucks carried these items to the warehouse.

DUES ARE DUE

January 1, 2000 is the due date for dues, except for new members

who joined after September 1, 1999. Individuals pay \$20, families pay \$35, sustaining members pay \$50 and students pay \$10.

You may pay at the November meeting, the December picnic or by mailing to: **Southwest Florida Archaeological Society**, P.O. Box 9965, Naples, FL 34101-9965.

DECEMBER PICNIC

The picnic on December 12 at the Collier County Museum promises to be as good as the last one there. Sign up at the November meeting or send a check for \$5.00 to our P.O. BOX (Southwest Florida Archaeological Society, P.O. Box 9965, Naples, FL 34101-9965). The fee covers meats to be cooked by famous chef Bud House. Also, bring a covered dish. **The picnic will last from 11:00 AM to 2:00 PM.**

A SMALL , BUT SIGNIFICANT MISTAKE:

We have been informed by a reliable source that we have made an error in our October reference to recently (or soon-to-be?)-made Dr. Corbett Torrence. Apparently we attempted to invest him with the title of "Field Director" at the Randell Research Laboratory at Pineland. Corbett is an amazing individual, smart, likable, with the enthusiasm and "fire" of a truly dedicated archaeologist, but he is not Field Director out there. Sorry!

**GONNA TAKE
(ANOTHER)
SENTIMENTAL
JOURNEY...**

I've been informed, just as this issue was about to go to press, that our planned speaker for November has had to postpone his visit to Naples. Your editor has agreed to step into the breach with a presentation I've kept handy for just such a contingency.

In 1986, a group of us made a trip to Mexico into the area west of Merida to the State of Chiapas to visit Palenque, Edzna,

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Tonina, Comalcalco, and other archaeological points of interest. It was a memorable trip, partially because we drove from Merida to Villahermosa, then to Palenque, thence across the mountains to Ocosingo (site of the massacre involving the Zapatistas not too many years later) and the ruins of Tonina, and from there down toward the Usumacinta River and some of the towns and sites along the Mexico/Guatemala border. We got to cover a lot of territory and see things that very few other people routinely glimpse. I'd like to share some of these images with you.

This talk may be interesting to some because you can see how Palenque (an

important site many people have seen in person) has changed since before or after *your* visit there. Otherwise, I hope the membership does not mind one more talk from this speaker. Thank you in advance for allowing me to appear before you once again ...

JOHN G. BERIAULT, acting editor Volume No. 15 Issue No. 11

NEWSLETTER