



Vol. 23 No. 11

December 2007

December Field Trip To “Ding” Darling Refuge on Sanibel

The SWFAS December Field Trip will be to the J.N. “Ding” Darling National Wildlife Refuge on Sanibel on Sunday, Dec. 16, meeting at the Refuge Visitor Center at 10:30.

About 700,000 people visit “Ding” Darling every year; the refuge is particularly well-known for the large variety of birds that can be seen feeding on the tidal flats at low tide. Refuge Ranger Jeff Coombs will give an overview of the refuge in the Visitor Center, and SWFAS members will want to briefly check out the exhibits about the ecology of Sanibel and about J.N. “Ding” Darling, the Pulitzer Prize-winning

political cartoonist who was a driving force in the 1930s for the establishment of the refuge on Sanibel.

The group will then head out for the five-mile trip (by car) along Wildlife Drive, which was created by mosquito control to help get a handle on Sanibel’s legendary salt marsh mosquito population. Wildlife Drive separates freshwater from saltwater, and the water level of the interior freshwater areas is controlled to provide optimum conditions for wildlife. Sanibel has an island-wide weir system that

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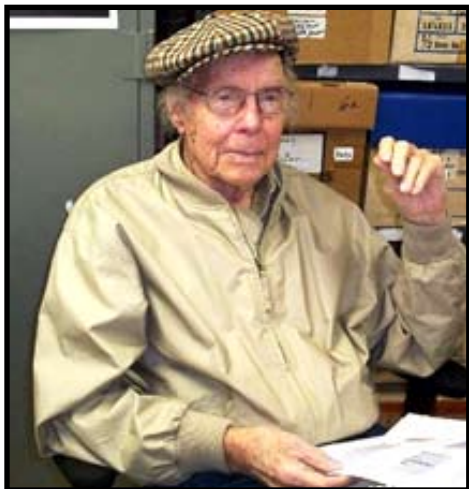
SWFAS Bids Farewell to a Good Friend, Art Lee

Art R. Lee passed away on November 15, 2007 at the age of 92 after a long and colorful career. He was born in Montana and graduated from the University of Minnesota with a major in journalism. He worked for various publications and once owned his own paper, a country gazette. During World War II, he was in the Navy and served on a battleship and a carrier.

Afterwards Art handled public relations for the National Testing Reactor in Idaho and then joined the US Information Agency under Edward R. Murrow. He subsequently served as Public Affairs Officer in Cambodia, Korea, Algeria and Tunisia.

Upon retirement, Art and his wife Lynn came to Naples where his interest in archaeology grew.

SWFAS first met him in the early '80s. Art and Lynn edited the SWFAS newsletter for many years. He demonstrated that he had



Art Lee working behind the Craighead Lab.

archaeological experience and began to dig with us. When the County was going to use the Craighead Lab for paint storage, he organized a SWFAS meeting at a Collier County Commission meeting. This resulted in the County selling it to us for one dollar. It was given to the Collier County Museum. As Lab Director, Art organized and developed the procedures we now use in analyzing. Five reports have been issued on important sites that would not otherwise have been published. The lab also has worked on many projects for archaeologists in the area.

The State mandated that each County have a Comprehensive Land Use Plan with an Historical and Archaeological Preservation Board. Art worked with a County employee to write the ordinance. He was a founding member of the Board.

While he was doing all of this, he joined FAS and contributed in the same way. Members of both organizations have said the same thing, that he was the heart and soul of the organization. FAS presented him the Lazarus Award, which is the highest recognition of contributions fostering joint professional and avocational archaeologists' efforts. He also was given a President's award by FAS, signifying recognition of unusual assistance to the President.

Art was an honorary member of the Marco Island Historical Society for a very long time. Art once led an MIHS tour to Horr's Island and was instrumental in the MIHS sponsorship of the 1995 dig in North Marco near the

site of the original Cushing expedition a hundred years earlier. He helped MIHS members Hilde and Helmut Nickel in recording the 1995 exhibit of the Key Marco Cat held at the Collier County Museum. Jim Buckholtz, Collier County School Administrator, put this material together with still pictures for local school students.

Art also furnished source material for the catalog of the Key Marco Cat Millennium Exhibit which MIHS co-sponsored with the Citizens Bank on Marco.

Without Art, the Marco Island Historical Society might not exist in its present form, and there might not be a fund drive to build a museum on Marco.

Art was noted for his generosity and humor and was beloved by all of his many friends. Although short in stature, he was a giant of a man in the archaeology of Southwest Florida and will be sorely missed by all of us. We seldom have an opportunity to meet a rare individual who is so special.

If you care to send a note or card, please send it to Lynn Lee, his wife of 70 years at 7304 Van Lake Drive, Inglewood, FL 34224.

This story is based on excerpts from a story that appeared in the Marco Island Eagle and from notes prepared by Jack Thompson, Craighead Lab Director.

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controls the level of water in Sanibel's interior freshwater swales -- for wildlife and also for exotic non-native plant control (Brazilian pepper, primarily).

There is a \$5 per car fee for Wildlife Drive; those who wish to carpool will be able to leave their cars in the lot at the Visitor Center and pick them up following the Shell Mound Trail Tour.

There is an observation tower on Wildlife Drive. I don't have the time for low tide on the bay side of Sanibel, but it's low at 11:44 a.m. at Lighthouse Point so it should be on the

low side; you may want to bring a camera with telephoto.

The impact of Hurricane Charley on the Refuge is still very evident, particularly along the Shell Mound Trail. It was formerly canopied by old-growth Black and Red Mangroves (reminiscent of the Mound Key water court); most of the trees were lost in Charley. Mangrove seedlings are springing up and nature is renewing itself.

The Shell Mound Trail is near the end of Wildlife Drive, and Sanibel historian -- and long-time SWFAS member --

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Betty Anholt will lead a tour of the trail. The Shell Mound trail covers three low mounds that were once part of a much larger complex. In the 1970s, archaeologists worked at the Wightman Mound (on private property near the Shell Mound Trail and part of the original complex). Some of those artifacts can be viewed at the Sanibel Historical Village & Museum and also at the Bailey-Matthews Shell Museum on Sanibel. Betty was not involved in the 1970s dig but she did work with Bill Marquardt and Karen Walker when they dug some test pits there in the 1990s.

Before Wildlife Drive was constructed, this section of refuge land had open access to Pine Island Sound. In the first half of the 20th century, an enterprising Sanibel resident set up a tourist attraction on the mound site, calling it “mysterious island.” John Goggin visited it in the 1940s, noting the mounds and shell causeways. Little remains today except for the low shell mounds that can be seen from the Shell Mound Trail.

After the Shell Mound Trail tour, the group will head over by car to the Sanibel Historical Village & Museum for a picnic lunch in Miss Charlotta’s Tea Room. The Sanibel Historical Society will provide water and lemonade; SWFAS members need to bring their own lunch. The Historical Village has a small museum -- with the Calusa artifacts from the Wightman site -- set up in the Rutland House. You can also tour the old Schoolhouse (a schoolhouse until the 1960s, it was the home of the Old Schoolhouse Theater until several years ago, when it was relocated to the Village and restored); the old post office, Bailey’s General Store, and several homes, including an endearing Sears & Roebuck kit home called Morning Glories (which came to Sanibel by barge).

While you’re on Sanibel, you might also want to check out the Bailey-Matthews Shell Museum, which added a Calusa exhibit several years ago. Bill Marquardt was the consultant; the design was by Synergy Design Group (they have done the Randell Research Center signs, the Hall of South Florida at the Florida Museum of Natural History in Gainesville and they are currently working on the Shell Mound exhibit at the Mound House). There are artifacts from the Wightman site on display and the loose sand/shell that forms the exhibit “floor” is also from Wightman. In the exhibit, a father has taken his son down to the “shell tool workshop” and he is teaching him the art of shell tool making; the painted mural in the background, by Merald Clark, is loosely based on the Pineland site.

Directions:

From I-75, get off at Daniels Parkway heading west. When Daniels Parkway crosses U.S. 41, it become Cypress Lake Drive. Get in the left lane after the first 1/4 - 1/2 mile and watch for the turnoff for Summerlin Road.

From U.S. 41, head west at Gladiolus Drive. Get in the left lane and watch for a left exit for Summerlin Road.

Follow Summerlin Road, heading west; it will lead directly to the Sanibel Causeway. The Causeway toll is \$6 (and the new Causeway just opened in September, with a 70-foot fixed span on the A bridge that was hotly contested by Sanibel residents, who wanted to retain the old drawbridge).

You’ll come off the Causeway onto Causeway Road. Go straight a short distance to the four-way stop; there is a right lane that feeds off to Periwinkle Way -- take that and merge on Periwinkle. Follow Periwinkle to the end (about 3 miles) to another four-way stop. Turn right on Tarpon Bay Road.

Follow Tarpon Bay Road a short distance to another four-way stop at Sanibel-Captiva Road. Turn left. The Refuge is about 2 miles down the road, on the right. You’ll pass the Shell Museum and the Sanibel-Captiva Conservation Foundation on the left before you hit the Refuge entrance. You’re getting close to the Refuge when you pass Doc Ford’s and Rabbit Road, which will also both be on the left. The Refuge is the only paved right turn you’ll see. If you reach the Sanibel School on the right, you’ve gone too far.

Directions from the Shell Mound Trail to the Sanibel Historical Village & Museum: You’ll come out to Sanibel-Captiva Road. Turn left. It will be about 5 miles to the four-way stop at Tarpon Bay Road. Go straight onto Palm Ridge Road.

Follow the curve until you come to the first left, Wooster Lane (across the street from the Fire Department -- note the palm tree with a double trunk!). Wooster curves sharply to the left, then to the right, and the turn to the Historical Village and BIG Arts is past that curve. Turn left into the Village (the first driveway is the exit).

Timing: It takes about an hour (sometimes slightly less) to get from Sanibel to the Bonita Springs Community House.

A special thanks to Ann Wollschlager for making the initial arrangements.

Please RSVP by Dec. 14 for this trip so that the Historical Village will have an idea of how many people will be stopping by Miss Charlotta’s. Call or e-mail Karen Nelson at 239/292-7858; knelsonislander@yahoo.com.

The *Marco Island Historical Society* lectures continue:

Jan. 8, 2008: Robert Macomber, The Civil War Naval Battle of Caxambas Pass. 7 p.m. at Mackle Park

Feb. 8 - Dr. William Marquardt - Culture, Archaeology and the Modern History of Marco. 7 p.m. at Mackle Park.

For more information, contact SWFAS member Betsy Perdichizzi, betsyperd@naples.net or 239/394-6917.

November Recap: Robert Austin on Archaeology in the Suburbs

Archaeologist Robert Austin spoke at the SWFAS November meeting about the work he has been doing since 1997 within a 1950s suburban housing development in St. Petersburg.

Work within the Bayshore Homes site benefitted greatly from the help of local residents and volunteers.

Despite modern development, significant portions of the complex remain intact. Recent surveys and test excavations have substantially expanded the physical boundaries of the site. They have also provided new information on site chronology, subsistence, and site structure and also on the late Weedon Island occupation of the Pinellas peninsula.



Nominees for SWFAS 2008 Officers & Trustees

SWFAS Board members have submitted a list of candidates for the 2008 Officers and Trustees. The SWFAS general membership will vote at January's monthly meeting, and nominations from the floor will be accepted until the vote.

OFFICERS:

President: Theresa Schober
 1st VP: Tom Franchino
 2nd VP: James Oswald
 Recording Secretary: JoAnn Grey
 Treasurer: Charlie Strader
 Membership Sec: Charlie Strader
 Newsletter Editor: Karen Nelson

TRUSTEES:

First year of 3 year term:
 - Rebecca Austin
 - Alison Elgart
 Second year of 3 year term:
 - John Beriault
 - Kara Bridgman Sweeney

- Betsy McCarthy
 - Jean Belknap

Last year of 3 year term:
 - Jack Thompson
 - Betsy Perdichizzi
 - Liz Clement

Lab Rats at Work

Craighead Lab Rats Kathy Magoutas, Betsy McCarthy, Liz Clement and Jan Gooding washing Buschelman material. Kathy, our newest Rat, wields a toothbrush to clean pottery sherds prior to drying and sorting. Notes Jack Thompson, "We're all pleased with what we are finding in these field specimens."



Geology Rules: The Weight of Time

By Jack Harvey

It runs in the family. Although you seldom hear her name, Irene Curie was an important physicist too. Like her famous mother and father, Irene had a central role in explaining radioactivity. A critical discovery was that atoms of the same element come in subtly different types. It's like two cars, identical make, model, year, color, engine and interior. But their weight is different by a small percentage. Aha, one doesn't have a spare tire.

Atoms are like that. For a particular element such as oxygen or carbon, all atoms have the same number of protons and electrons. This means that ordinary chemical analysis can't detect any difference between the different types of atoms of the element. The subtle differences between atoms of the same element are that some have more neutrons than others. Therefore some weigh more than others. The different types are called isotopes, from the Greek "isos" (equal) and "topy" (place), and all chemical elements have these lookalikes.

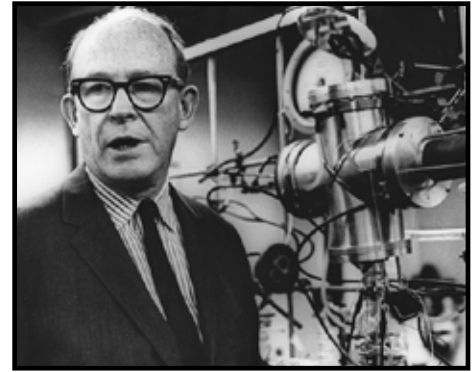
Isotopes can be stable, meaning they last forever, or radioactive, meaning they can spontaneously split apart into atoms of different elements. Confusingly, physicists call this *decay*, although it is not biological rotting. Atoms don't age. Instead, the laws of quantum mechanics say that a

radioactive isotope may split at any time but there is no way to know when it may happen. Instead, it just suddenly changes.

To describe how likely an atom change is, the isotope is said to have a "half-life" time. Let's say it's, oh, 5,730 years. Suppose you start with 8,000 atoms. After 5,730 years, you will have 4,000 left, because gradually over those years half will have changed into something else. After another 5,730 years, you will now have 2,000 left. After each half-life interval, the number of atoms of the isotope remaining is halved. Moreover this rate of decrease is entirely independent of ordinary environmental effects such as temperature or chemicals. You can count on it.

Fortunately, we don't have to understand weird quantum mechanical rules that determine isotope half-life. The physicists have worked it all out and we can just look over their shoulders.

A chemist, Willard Libby figured that an isotope of carbon might be helpful for dating archaeological specimens. Clearly, if you know how much C-14 (a carbon isotope) was in a lightning whelk shell hammer when it was made, and you weigh how much is in it today, the half-life rule (5,730 years) tells you how long ago it was made. Libby was on the Manhattan Project that created the first atomic bombs. Two years after Hiroshima, he worked out



Above: Chemist Willard F. Libby.

Below: Radiocarbon dating developed by Libby.

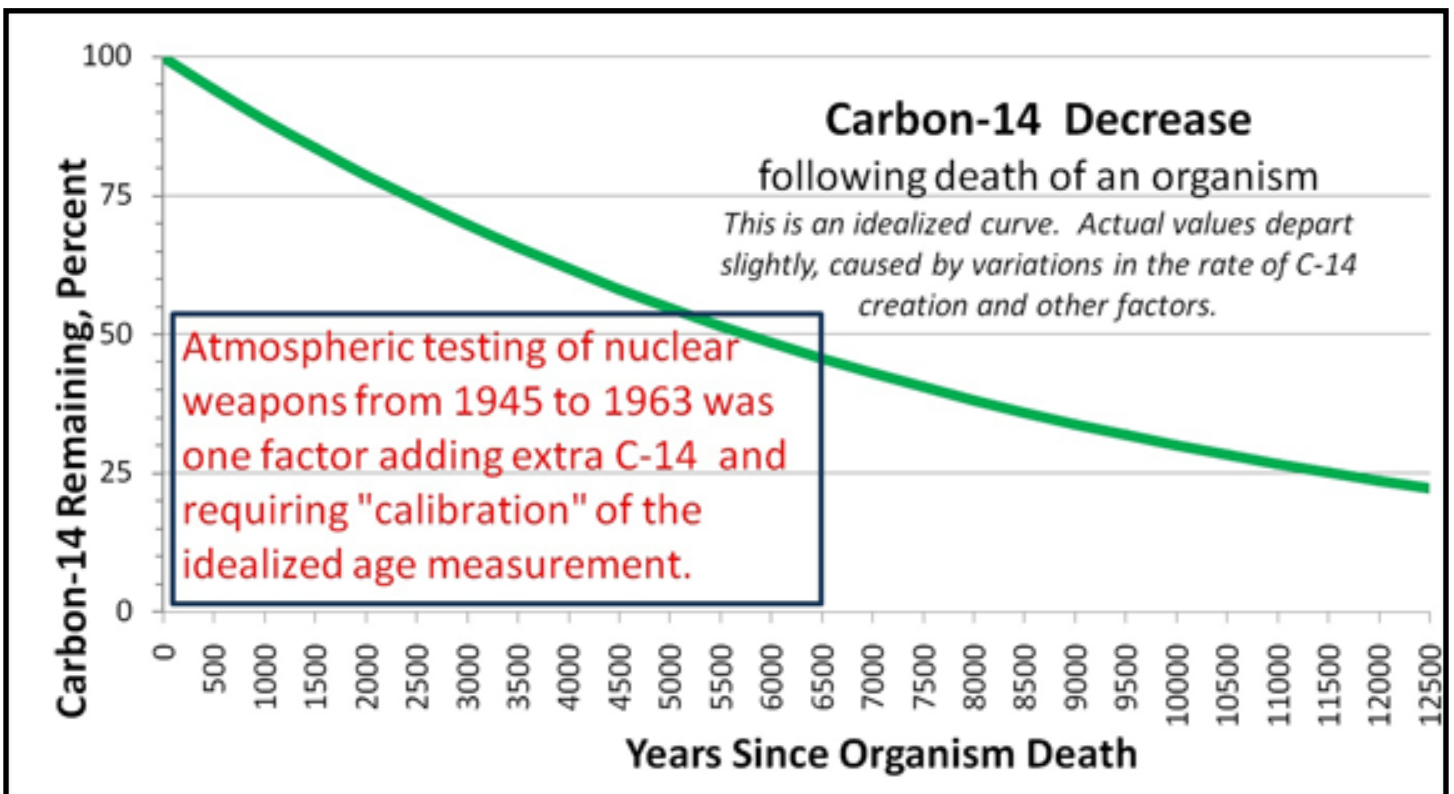
how to do radiocarbon dating and received the Nobel Prize in Chemistry in 1960.

So how do you know how much C-14 was in the shell hammer when a Calusa elder made it?

This is the puzzle that Libby solved and it depends on another C-14 feature. High in the stratosphere, it's being continuously made in small quantities by cosmic radiation from outer space. Again, we don't need to understand how that happens, just that it does and at a steady rate.

The key result is that our atmosphere contains an almost constant *ratio* of radioactive C-14 to the stable carbon

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isotope C-12. An organism doesn't care which isotope it uses to build cell structures, bone and shell, so it uses both C-14 and C-12 in the same fixed ratio they exist in the atmosphere and ocean. Your body is doing that as you read this and all your bones and teeth have the same ratio of C-14 and C-12 as this "standard" environmental ratio.

But when you die, you stop taking in new environmental carbon. If we *weigh* the C-14 and the C-12 in your remains 5,730 years after your death, the ratio of C-14 to C-12 will have dropped to half what it was when you were living. Because we calculate the ratio, it doesn't matter if parts of your remains are missing. And that's about all there is to the new magic called *radiocarbon dating*. All we have to do to find out when the lightning whelk died that became a Calusa hammer is to separate its carbon into the two isotopes and weigh them. Then do a little high school algebra (plus a slight correction) and we know.

The Rats at Craighead Laboratory are very good at weighing things. So why do we have to pay several hundred dollars to have

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this weighing done for us? Isotopes can't be separated by ordinary chemical analysis. (If they could, any high school chemical lab could make an atomic bomb.) A very high tech gadget called a *mass spectrometer* is needed. Mass is another word for weight and one capable of doing this job costs millions of dollars. The gadget uses high vacuum, high voltage and a high magnetic field, all expensive.

And there are all sorts of problems with making the measurement sufficiently accurate. The starting environmental ratio is only about one radioactive C-14 atom per trillion stable C-12 atoms. Tough number. If very old, cyclotrons get involved and when you see the machinery needed, \$400 starts to look like a bargain.

Radiocarbon dating is only good for things younger than perhaps 50,000 years, because older than that, there isn't enough C-14 left to weigh. Although that date range is fine for New World archaeology, Fertile Crescent civilization and perhaps Neanderthal tribes, it's hopeless for the 3.2 million-year-old Lucy skeleton. And the geologists have it worse. They need to date rocks with ages in the billions of years.

We'll weigh deeper into the past next time.

About SWFAS

The Directorate:
President - Theresa Schober
1st VP - Karen Nelson
2nd VP - Tom Franchino
Recording Secretary - Jo Ann Grey
Treasurer - Charlie Strader
Membership - Charlie Strader
SWFAS Committees:
Field - John Beriault
Lab - Jack Thompson

Hospitality - Jeanne Sanders
Publicity - Kara Bridgman Sweeney
Newsletter - Karen Nelson

If you would like to join SWFAS, please address your check to: The Southwest Florida Archaeological Society; P.O. Box 9965; Naples, FL 34101

Dues are: Individual - \$20; Sustaining - \$50; Family - \$35; Student \$15

Board meetings are held prior to the regular meeting on the third Wednesday of the month at the Bonita Springs Community Hall on Old 41 (by the banyan tree). All are welcome. Board meetings begin at 6:00; regular meetings begin at 7:30 (with coffee served at 7).

The Southwest Florida Archaeological Society
P.O. Box 9965
Naples, FL 34101