Florida Fossil Horse Newsletter

Volume 2, Number 1, 1st quarter -- March 1993

What's Inside?

- News from the FlaMNH
- Charter Members
- Invited Article--The Thomas Farm Experience 1992
- Famous Horseologists
- Recent Acquisitions and Donations
- Readers' Forum
- Book Review
- Announcements

News From the Florida Museum of Natural History

In February the FlaMNH received a major leadership gift of 3.1 million dollars. In conjunction with other moneys derived from fundraising efforts, this donation will be used to construct a new FlaMNH Exhibition Center on campus. As many of you know, currently the FlaMNH is located in Dickinson Hall on the main campus of the University of Florida. During the weekdays, parking for museum visitors is difficult. And, over the years as the Museum's programs have grown by leaps and bounds, space in the existing building continues to become ever more precious. With this new and exciting building initiative, the public outreach functions of the FlaMNH will move to the western edge of campus just east of 34th Street. The new building is being designed by HOK architects of Tampa (the firm that also designed the Smithsonian Air and Space Museum on the Mall in Washington). The new museum building will join the recently built Harn Museum of Art and the Performing Arts Center in the UF Cultural Complex (where there is ample parking for museum visitors). Once the existing exhibits and education programs are moved to 34th Street, then Dickinson Hall will expand its research and collections programs.

This is a very exciting phase in the development of the FlaMNH. Over the next decade these changes will provide new space for public exhibits, including a major emphasis on paleontology. I
anticipate being involved in this new initiative and envision the opportunity to place on exhibit some new and fascinating fossil horse specimens for the public to appreciate.

Another major initiative on the UF campus is the newly established College of Natural Resources and the Environment. This is a new concept in university colleges that cuts across traditional university disciplines, combining such previously disparate fields as the natural and social sciences, agriculture, public relations/communications, engineering, law, urban and regional planning, and the FlaMNH. Related to the FlaMNH, our faculty hopes to teach courses and provide internship experiences in systematics and biodiversity. This college will begin at the undergraduate level and then expand to include graduate programs.

In March I learned that I was awarded a Fulbright Senior Fellowship for 1993-4. This will provide me the opportunity to live in La Paz, Bolivia where I will conduct research on fossil mammals from the Andes at the National Museum of Natural History and teach a course (in Spanish) on geology and paleontology at the University of San Andres. This opportunity will give me many new experiences that I will be able to share with readers of *Pony Express* in upcoming issues. (Bruce J. MacFadden)

---

**Back Issues of Volume I for Charter Members**

In February, three-ring *Pony Express* binders were sent out to all Charter Members. If you did not receive yours, let us know and we will send you another: In addition, at this point you should have received all back issues of Volume 1. If we slipped up and you are missing one or more back issues, send us a note and we will mail them to you. And finally, if your name should (but currently does not) appear on the Charter Members list that follows, please let us know.

**CHARTER MEMBERS**

- Michael Addison, Orlando
- Thomas & Brian Ahern, Temple Terrace
- Shirley Albury, Tavernier
- Hayden Allen, Tarpon Springs
- Ed Armentrout, Hot Springs, SD
- W L Ashby, Port Republic, MD
- Auburndale Public Library, Auburndale
- Jean Auel, Sherwood, OR
- John Babiarz, >Mesa, AZ
- Lewis Baldwin, Clearwater
- Diane Belle, Little Mountain, SC
- Peter Bennett, Gainesville
- H C Bergmann, Tallahassee
- Sherri Gust, Pasadena, CA
- Hagerman Fossil Beads Nat'l Monument, ID
- Kent Harden, Belleair
- Beth Hardin, Lakeland
- Lisa Harding, Jacksonville
- The Harrigans, Osprey
- Mary Harris, Lake Wales
- Stephen Harty, Venice
- Ray Harvey, Gainesville
- Charles & Bobbie Hayek, Seminole
- John Hickey, Tampa
- Thomas Hodgkin, Mulberry
- Charles Hoffman, Flagstaff, AZ
- Museum of Archaeology, Fort Lauderdale
- Ann Marie Nagales, Orange Park
- Northwest Interpretive Assoc., Seattle, WA
- Lewis Ober, Miami
- Everett Olson, Los Angeles, CA
- Edgar Ott, Gainesville
- Debra Ann Parrott, Fort Lauderdale
- The Pendergrafts, Largo
- Richard Piotrowski, Holiday
- John Powell, Kernesville, NC
- Jewel Pozefsky, Altamonte Springs
- Eric Prokopi, Land O' Lakes
- Donald Prothero, Los Angeles, CA
D J Bethea, Tampa
H Bickner, Jacksonville
The Brayfield Lab, El Jobean
A M Bridell, Sanibel
Diana Bridges, Miami
Joseph Brooks, Gainesville
Anita Brown, Lake City
Dr & Mrs R C Brown, Fort Myers
Ann Bungart, Orlando
Julie Burton, Anthony
Dr & Mrs Camp, Gainesville
Annette Cannon, Orlando
David Cass, Winter Park
Timothy Cassady, Marianna
Tom Cesario, Sugar Grove
Geri Chapman, Tampa
R G Churchill, Lutz
Mary Cifelli, Silver Springs, MD
John Connaway, Clarksdale, MS
Helen Cozzini, Temple Terrace
Don Crissinger, Mulberry
John Cronin, Tampa
Clyde Dabbs, Fort Myers
Walter Dalquest, Wichita Falls, TX
Larry Danielson, San Jose, CA
Douglas Dew, Palatka
Mrs E V Dillon, Bryn Mawr, PA
Theodore Downs, Los Angeles, CA
Mr & Mrs E M Dumas, Tequesta
J East, St. Petersburg
Dr R Ehling, Boynton Beach
Eric Esterson, Sanford
Howard Evans, Ithaca, NY
Valerie Flanigan, Naples
Florida Fossil Hunters, Orlando

Mitchell Hope, Nokomis Muriel Hunter, Tallahassee
Steve Hutchens, St Petersburg
Stephen Jacobson, Tampa
Dr Christine Janis, Providence, RI
Suzanne Jarrell, Orlando
Clifford Jeremiah, Jacksonville
Ms R Johnson, Napa, CA
Richard Johnson, Vero Beach
Rudi Johnson, Tampa
Richard Jones, Waterville, ME
Jonathan Jordan, Gainesville
Lori Kaminski, Orlando
Barbara Keedy, Orange Springs
Ernest Kendler, St Petersburg
William Kilroy, Biloxi, MS
Derk Kuyper, Orlando
Lakeland High School, Lakeland
Barbara Lamb, Ainsworth, NE
Henry Lamb, Lakeland
Robert Lamont, Harrison, NY
Stanley Lang, Beverly Hills
The Lawsons, Winter Park
Sarah Lee, Jacksonville
Everett Lindsay, Tucson, AZ
Hans Lochner, Stuttgart, Germany
Michael Lutz, Orlando
Bruce MacFadden, Gainesville
Steve Manchester, Gainesville
Mary Ellen McAlpine, St Petersburg
Russell McCarty, Gainesville
Dr Brad McPherson, Shreveport, LA
William Mendenhall, Gainesville
Marion Mengel, Lawrence, KS
The Metrins, Lake Mary
Charles Michaels, Lutz
Tim Ramey, Santa Ana, CA
William Rieger, Philadelphia, PA
Paul Schuerver, Orlando
A C Schuerver, Orlando
Terry Sellari, Tampa
Seminole Fertilizer Corp, Bartow
Graig Shaak, Gainesville
Lester Shaak, Harrisburg, PA
Dan Shaw, Orlando
Erika Simons, Gainesville
Robert Sinibaldi, Gainesville
Jon Sizemore, Largo
S Marie Skinner, Ainsworth, NE
Southwest Florida Fossil Club, Venice
Roger Stacey, Venice
Larry Stanley, Okahumpka
John Stauffer, Naples
George Stephens, Jacksonville
Martha Sullivan, Seminole
Mary Sullivan, Frostproof
Mona Sullivan, Alachua
Bill Swoap, Ocala
Del Szatmary, Brick, NJ
Margaret Tabor, Orlando
Tampa Bay Fossil Club, Tampa
Jim Tatum, Tampa
Eric Taylor, Lake City
Laura Thayer, Fort Pierce
Alice Thomas, Punta Gorda
M C Thomas, Hendersonville, NC
Rollin Tillis, Norristown, PA
The Toomeys, Sanibel
Dixon & Joyce Walker, Gainesville
Thomas Walkuski, Port Charlotte
Mahito Watabe, Okayama, Japan
Thomas Watson, Panama
Invited Article--Uncovering 20 Million Years of Fossil History: A Journal Record of a Thomas Farm Dig

by Helen Cozzini and D. J. Bethea, Tampa

(Editor's Note: This article and illustration originally appeared in the Tampa Bay Fossil Chronicles, Vol. 6, No. 6 They are reproduced here [with slight editorial changes] with the authors' permission. For further reading about this dig, see Pony Express vol. 1, No. 3)

When we signed up months in advance for the Thomas Farm Dig it seemed a long way off. Finally, on Friday night, 22 May 1992, we met at the FlaMNH for a wine and cheese social and orientation. Here we met our camping companions for the coming weekend. Our leaders for the expedition were Bruce MacFadden, Art Poyer, and Dan Cordier. We were given informative material on the history of the site and on the previous discoveries made there. Our hosts were very enthusiastic and explained the importance of this site and the goal the museum is trying to obtain. One of the most rare and important animals found at this site is the tiny (dwarf) horse, *Archaeohippus* (see figure). If the FlaMNH is able to find enough fossil material to reconstruct this tiny horse, it will be the only one of its kind in existence today. Other animals being excavated include a rare bear/dog-like carnivore, two other species of horse (*Parahippus* and *Anchitherium*), and assorted other small rodents, lizards, and bats, the latter of which seems to indicate a more tropical, forested environment. When asked for information on the actual digging of the site our hosts just said, "Wait until tomorrow, we'll show you in the field. Little did we know what the weekend had in store for us.

Leaving civilization behind, we drove for about an hour through some of Florida's beautiful farmland to reach our destination. Once there, we immediately went to look at this famous site. Much to our surprise the site was a small depression in the ground that was surrounded by trees. The "pit" was about 50 square feet, with a smaller area inside covered with a bright blue tarp. We both wondered how so many fossils could have been dug from this small area since its discovery in 1931 by state archaeologist Clarence Simpson. Excavations
continued intermittently up to the present time, culminating with our dig today.

Although we were anxious to start digging, our first priority was to set up our tent and make camp. It only took us 15 minutes to set up our tent, which both pleased and surprised us. Soon the small treeless field next to the site was dotted with tents of all colors, shapes, and sizes. We were ready to dig.

Our group leaders led us, thirteen in all, down a steep incline to the site. Here they explained the details behind the scientifically gridded area where we were to dig. Each layer or piece of fossil material found may be significant when combined with other factors. This means that great care needs to be taken in the process.

Our main digging tool for the site was a dental pick, which was appropriate for uncovering the tiny fossils from the extremely delicate bone layer. A trowel and bucket for removing matrix were also used. Needless to say, neither one of us had used dental picks to dig in Florida before, and were even more amazed with the amount of time it must have taken previous workers to reach the level we now found here at the site. Carpeted mats were provided for comfort and umbrellas for protection from the afternoon sun. Those participants who wanted to dig were assigned a one-meter area. Anyone not wishing to dig in the pit was invited to screen for micro-fossils in the shaded camp tents above the dig site. Almost immediately, our digging efforts resulted in the discovery of many tiny fossils. The time passed very quickly and before long we broke for lunch. After lunch we resumed our excavating activities, with our ever vigilant camp leaders closely monitoring each person's fluid intake, due to the extreme heat and humidity that accompanies a Florida summer.

Once again, the time passed quickly and we were called out of the pit for a wonderful dinner of barbecued chicken, corn on the cob, and baked beans. We ate in the main camp building (our headquarters), which was an open pole barn with picnic tables and electricity. An open kitchen and enclosed shower with a cement floor were also part of the pole barn. That evening, Bruce MacFadden gave a slide presentation on the evolution of the horse, which resulted in a detailed discussion afterwards. We went to bed that night looking forward to the events planned for the next day.

The morning began with coffee and juice with your choice of pancakes, cereal, or both. Not bad for the middle of nowhere! The cool morning was ideal for digging and we always had at least one of our leaders present in the pit to answer our questions and assist us with any problems we encountered. We enjoyed the impromptu discussions in the field as much as the scheduled slide programs during the evenings.

At the end of the day we discovered that we had been overrun by fire ants who had decided to take up residence in our tent by eating holes in the floor. Luckily, our hosts were well prepared and provided another tent for us to use.

Our dinner that evening was spaghetti and a salad. This was followed by a slide presentation by Dan Cordier on his experiences living several years in Haiti collecting and studying fossils from cave deposits. Both the cave deposits from Haiti and the Thomas Farm site, which is considered a sinkhole and a stream deposit, show the similarities of a debris cone deposition, which is created when sediment falls through a relatively narrow opening and accumulates in a coneshaped formation on the floor of the cave or ground below. After the slide program, some members of the group sorted micro-fossils from previously screened matrix, with a few of us returning to the site with flashlights to continue digging, knowing that the following day would be our last.
Again the morning started off with a hearty breakfast and a shady, cool site to dig in. The early morning was spent finishing up the plaster jackets that would protect the finds made this weekend. Also during the morning an informal lesson was given on how to take the measurements of the orientation of a bone "in situ" (the exact position and condition in which it was found). After lunch, our group was joined by Russ McCarty, the preparation manager for the FlaMNH. Russ demonstrated the proper techniques for the extraction of a fossilized bone from a plaster jacket. He also showed us the correct methods of fossil bone preparation and the most current bone reconstruction methods. This was a terrific ending for a terrific weekend. Everyone who participated in this dig learned a lot and had a lot of fun while doing so. We all returned with a wealth of knowledge and a replica of the lower portion of the leg and hoof of the tiny Archaeohippus. Would we go again? You bet we would!

---

**Famous Horseologists--Unsung heroes and heroines**

Many paleontologists have been fortunate to conduct research as part of their duties as professors and/or curators at research universities or natural history museums. In contrast, over the years there also has been a group of paleontologists that have made major advances to science while working at smaller institutions that lacked the research support and infrastructure of larger, more established institutions. Such was the case with the Johnstons, C. Stuart and Margaret.

Stuart took his training in paleontology during the Depression at the University of Oklahoma under the direction of C. Willis Stovall. Thereafter in the late 1930s, Johnston helped to found the geology department at West Texas Teachers College at Canyon, now West Texas State University. Despite heavy teaching loads and other administrative duties, and assisted by his wife Margaret, Stuart made important collections of fossil horses from the panhandle region of Texas, and in particular, from the rich Miocene Clarendon and Hemphill beds. During those lean years, government and state funding for paleontology was virtually nonexistent. The Johnstons used labor provided by the Works Progress Administration (WPA) to assemble field crews to collect fossils. The resulting collections from this region documented a time of the great horse diversity, as Matthew and Stirton had noticed a decade earlier. Stuart wrote several important papers on fossil manuals from Texas and Oklahoma, including horses. For example, he named the important new species of Calippus, *C. regulus*, the tiny one-toed horse from the late Miocene. In addition to his teaching duties, Johnston helped to develop the fossil collections at the Panhandle-Plains Museum in Canyon.

While on a research trip to the eastern museums in 1939, Stuart died suddenly and under mysterious circumstances at the age of 39. After his death, Margaret continued for a few years to oversee the WPA excavations at some of the active fossil sites that had been started with Stuart. Despite the tragic loss of the Johnston's energy and enthusiasm, the legacy of this dedicated couples' devotion and contributions to paleontology continues in the fossil collections and exhibits at the Panhandle-Plains Museum. (Next Time: R. A. Stirton and UCAL--Berkeley)

---

**Recent Acquisitions and Donations**

There have been several interesting donations of fossil horses to the FlaMNH over the past year. Eric Taylor of Lake City continues to recover many important Miocene horses from the Occidental
mines near Lake City. In those mines there appears to be a sequence of several time zones, with some of the older units represented by some newly discovered specimens of Archaeohippus (also known from Thomas Farm).

Collectors from south Florida also have made some important discoveries of fossil horses. Suzan Watts has donated specimens of the tiny dwarf horse Nannippus from the Desoto site in Hardee County. From the same locality, Steve and Roxanne Wilson have donated a unique upper molar of Pseudhipparion (see figure), another dwarf horse which is otherwise distinctive because it has ever-growing teeth (see Pony Express Vol. 1, No. 3), presumably adapted for grazing on highly abrasive grasses. This specimen is also important because it represents the first known occurrence of this horse in sediments younger than the Bone Valley (where it is characteristically common), indicating that this genus persisted at least locally, although it became extinct elsewhere in its known range throughout North America.

Literally thousands of specimens of fossil Equus have been collected from the Leisey Shell Pit located south of Tampa. However, there always is something new and interesting that turns up from that site. In November Terry and Margaret Sellari donated a "paleo pathological" footbone of Leisey Equus (see figure. Pathology is the study of diseases. Paleopathology is the study of diseases of ancient animals that leave some fossilized remains. A common pathology that preserves in fossil bones is arthritis, which forms bony growths ("lipping") on and around joints. In this figure the outline of a normal footbone is shown with dashed lines: The pathological bony growth of this specimen is shaded, indicating an ancient occurrence of arthritis.

---

Readers' Forum

Dear Bruce, Thanks ever so much for Pony Express with the article about Matthew, and the review of the Matthew biography. Both very nice. And both much appreciated.

As ever,
Edwin H. Colbert

Dear Dr. MacFadden, I've been a member of the Florida Paleontological Society for several years along with the S.V.P. and P.S. I'm an amateur paleontologist here in Arizona. During the past few years, I have been working closely with the geology department at ASU. Last year, I started a corporation called BIOPSI. This was basically to document and research fossil material I have collected over the past 25 years.

Also, this organization will help unite the professional and amateur community here in the Phoenix area. I am a farmer by profession and own a citrus tree nursery with 25 employees. That keeps my life very busy, but the nursery helps with the funding of BIOPSI. Currently, Mr. Brad Archer, curator of the ASU geology museum,
and I are corroborating on three projects. One is a fossil "condor" egg from the late Pliocene/early Pleistocene deposits in Arizona, the reconstruction of a *C. megalodon* jaw with teeth (similar to Cliff Jeremiah’s), and a Pleistocene horse collected by Brad and myself this winter in Phoenix... ...I visited the FlaMNH last summer. I found the core sample through the Cretaceous turtle very interesting. Indeed, fossils will still be eroding away long after the human race has vanished.

Sincerely,
John Babiarz, Mesa, AZ

Dear Bruce, Came across these mustangs and thought you would like to see them. We are on day eleven of our journey west. Having a great time and seeing lots of interesting things. Did a lot of photography with these horses. Tom & Nancy Harrigan, Osprey

---

**Book Review**

Owls, Caves and Fossils, by Peter Andrews, Sale price (only valid until 30 April) $31 plus $3 per book shipping and handling. Order from University of Chicago Press, 11030 South Langley Avenue, Chicago IL 60628

Taphonomy is the study of the processes involved from the time an organism dies to when it becomes fossilized. Although one might think that this is a simple matter of bones being covered over by sediments, much more is involved, like weathering, predation, and scavenging. Deciphering which of these and/or other taphonomic processes operated on a particular fossil requires careful research. Andrews, a paleontology curator at the British Museum of Natural History, presents a scientifically authoritative, richly illustrated, and very readable account of the Taphonomy of small mammal fossils found in cave and sinkhole deposits in England. At first glance you may be thinking "what does this have to do with fossils from Florida?" On the contrary, taphonomic studies of Thomas Farm (where we have collected thousands of fossil horse specimens) done by Ann Pratt during the 1980s indicate that many of the small mammal fossils...
found there accumulated in an ancient sink-hole. As such, Andrews' book serves as an analogue and will therefore provide insight into many of the fossil deposits in Florida.

---

**ANNOUNCEMENTS**

*Editor's Closing Note*—Because of the large amount of contributed material published here (which is most welcome!), we were unable to also include some of our "regular" column features such as Prep Corner, Horse Talk, Identification, and Species Spotlight. We will try to include these in the next issue (scheduled to appear in June) and thereafter alternate them in successive issues as other articles of interest are submitted to the *Pony Express*.

*The Thomas Farm dig*—is scheduled for the weekend of 16-18 April. As this issue goes to the printer, we already have 10 participants. Like last year, our goal is to recover more specimens of the tiny dwarf-horse Archaeohippus for a skeletal reconstruction to be placed on exhibit at the FlaMNH. We will keep you informed about the results of this dig in the next issue of *Pony Express*.

*Subscriptions*—Your support is very important to us. Those of you who have already contributed for 1993 are indicated by a computerized label on the mailing envelope. If yours is hand written, it is time to renew now! We certainly appreciate your support--it is vital to the successful publishing of *Pony Express* during the upcoming year.

---

*Pony Express*

Florida Fossil Horse Newsletter
Volume 2, Number 1
March 1993
ISSN# 1065-285X; Indexed in the Zoological Record

*Editorial Staff:*

- Bruce J. MacFadden, Editor
- Gary Morgan, Contributing Editor
- Russell McCarty, Contributing Editor
- Art Poyer, Contributing Editor
- Linda Chandler, Managing Editor
- Daniel Cordier, Program/PR Coordinator

*Direct all Correspondence to:*

*Pony Express* Department of Natural Sciences
Florida Museum of Natural History
P.O. Box 117800
Gainesville, FL 32611-7800
Phone: 352-392-1721

Contributions should be made payable to:
**Fossil Horse Fund**
and sent to the Managing Editor at the address listed above

*Contributions and Support*

All contributors and supporters receive *Pony Express* and special invitations to talks, digs, and other activities that will promote the research, exhibition, and education about Florida fossil horses.
In addition, sustaining supporters, including Friends, Sustainers, Patrons, and Benefactors, will receive special recognition in the newsletter.

**Support Categories--1993**

- **Contributors** $20-99
- Individual $20
- Family (two or more members within Household, receive one newsletter) $30
- Institutions (Museums & Libraries, and other non-profit) $20
- **Friend** $100-249
- **Sustainer** $250-499
- **Patron** $500-999
- **Benefactor** $1000+

*(Note- Corporate sponsorships can be at the Friend, Sustainer Patron, or Benefactor' level)*

**Pony Express--Statement of Purpose:**

The purpose of this newsletter is to communicate news and information about fossil horses, particularly in Florida, and to develop a state-wide constituency that will support and enhance the research, exhibition, and educational programs offered at the FlaMNH that pertain to fossil horses. Contributions to the Fossil Horse Fund will be deposited into an account at the University of Florida Foundation, Inc., a tax-exempt entity, and will be used for the purposes stated here.

**Sustaining Supporters:**

**Benefactors ($1,000+)**

- Anonymous (1)

**Patrons ($500-999)**

- Robin C. and Jan Brown, Ft. Myers
- Florida Paleontological Society
- Bruce MacFadden, Gainesville

**Sustainers ($250-499)**

- Florida Phosphate Council, Lakeland
- Clifford Jeremiah, Jacksonville
- Seminole Fertilizer Corp., Bartow
- Southwest Florida Fossil Club
- Tampa Bay Fossil Club

**Friends ($100-249)**

- Anonymous (1)
- Babiarz Institute of Paleontological Studies, Mesa, AZ
- T. Peter Bennett, Gainesville
- Anita Brown, Lake City
- Florida Fossil Hunters, Orlando
- Thomas Harrigan, Osprey
- Mitchell Hope, Nokomis
- Derk Kuyper, Orlando
- Gary S. Morgan, Gainesville
- Office of the Director, FlaMNH
- Graig D. Shaak, Gainesville
- Joyce and Dixon Walker, Gainesville
- Wilson Excavators, Sarasota