

Florida Fossil Horse Newsletter

Volume 1, Number 2, 2nd Quarter--June 1992

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Editor's Preface to Second Issue

Complimentary copies of the newsletter were sent out during the month of March to about 3,000 folks, mostly in Florida. Since that time the response from our readers has been very enthusiastic. Although most of our readers are from Florida, we also have received responses, input, and inquiries from across the United States and as far away as Greece. One of my primary goals as Editor was to insure that the funding base of the newsletter was secure and thus provide it with a firm foundation for future growth and success. I am pleased to report that within the two months since the inception of this venture, we have built a solid group of Contributors and Sustaining Supporters and that original goal has been attained.

As a result of the extraordinary success of the newsletter in this short time, this issue reflects several changes. First, our name has changed to the "catchier" and more dynamic "*Pony Express*" (see "What's in a Name"). Second, we have enhanced the design and added color to parts of this issue. We also have added punched holes in the left-hand margin (thanks to the suggestion of one of our readers). Finally, we have expanded this issue to 12 pages in order to include as much of the news, feature columns, and readers' comments as we could. This will of course increase our printing costs for this issue, but those costs are being supported by a special anonymous Friend contribution

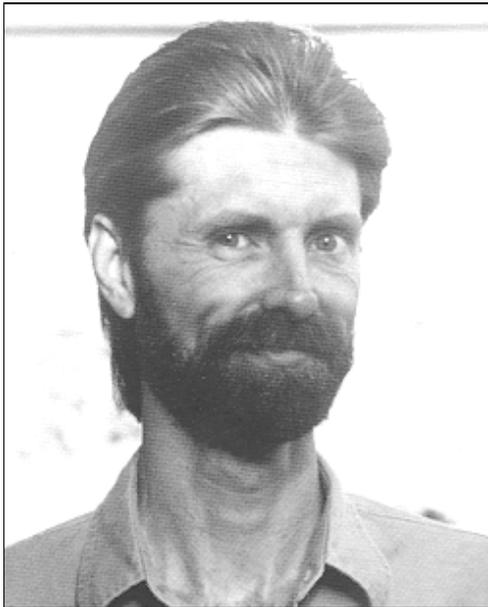
received in late April. The first two changes will be carried on in all future issues. Regarding the 12 page content, this is a special issue--normally we plan for *Pony Express* to follow a standard 8-page format.

We also have been planning many related activities and services for our readers. Our first dig at Thomas Farm is in progress during the month of May, and other activities are planned for August, the fall, and next year, including a possible trip to southern France. One of the common points brought up by fossil enthusiasts throughout Florida is a strong desire for reading material in paleontology other than that found in local libraries. Accordingly, it is our intent to keep an eye out for book sales and to coordinate the purchase of discounted books in bulk quantity. We have had T-shirts printed and you can order these from the flyer. In the first issue we promised that each reader would receive a small gift--and we have had bumper stickers printed for you. Yours should be enclosed.

I also am pleased to announce that we have added a new member to our staff, Dan Cordier, Program/PR coordinator. Dan will be responsible for coordinating the digs and other programs planned for the future. He also will assist me in fund raising and enhancing communications with our state-wide constituency.

If you have any friends who have not yet sent in their contributions and would like to receive *Pony Express* and partake in related activities, encourage them to join! (Bruce J. MacFadden)

Introductions



In the last issue we introduced the editorial staff FlaMNH (Ph: 904 392-1721) and now we would like to present a new member of our team, Daniel Cordier, our Program/Public Relations Coordinator.

Dan is a native of Racine, Wisconsin. He moved to Florida in 1975 and worked for vertebrate paleontology at the FlaMNH conducting Cenozoic excavations in Florida until 1980. Dan spent 1983-84 doing biological and geological inventories of national parks in the two mountainous areas of Haiti. Also while in Haiti, Dan excavated late Pleistocene vertebrate faunas of caves and sinkholes. On returning to Gainesville, Dan was involved in the restoration of fossils and the articulation of numerous skeletons at the FlaMNH. Dan then moved to Orlando where he worked until 1992. Dan is currently a student at UF seeking an additional degree in geology.

Dan will coordinate activities such as fossil digs and will help with fund raising. He also will serve as a liaison with the various fossil clubs throughout the state. If you have any questions about upcoming activities or state-wide club interactions, or have suggestions about activities or functions, feel free to contact Dan at the FlaMNH (Ph: (904) 392-1721. In the event that Dan is not in the museum to receive your call, please leave a message with the receptionist.

What's in a Name

Although the name Florida Fossil Horse Newsletter certainly conveys the essence and focus of our publication, we also have been considering other "catchier" titles to go along with this name, as we mentioned in the first issue. Thus, we have researched this carefully, considered several possibilities, and have decided to call our newsletter "*Pony Express*", which conveys the idea of horses, ponies, and rapid communication. In order for continuity, however, we also will keep Florida *Fossil Horse Newsletter* as the subtitle. Our logo will include the name *Pony Express* along with an illustration of a fossil *Equus*.

We would like to thank Merry Lynn Brown of Gainesville, who came up with the name *Pony Express*, the George C. Page Museum (Los Angeles; note correction of this credit line from last issue), for allowing us to use the previous version of the beautiful running horses (original painting by John Dawson; this version was drawn by

Linda Chandler), and Bruce Clary of the UF copyright office who insured that we had gone through the proper channels in order to use this mark.

Thomas Farm Dig Preps

The Thomas Farm fossil dig adventures for 1992 are underway! This 18 million year old Miocene deposit is one of the richest faunal assemblages of fossil vertebrates and it represents a very important part of horse evolution. We have had very strong interest from enthusiasts all across Florida and we even are receiving guests from out of state. Our goal is to recover enough material from the fossil dwarf horse, *Archaeohippus*, in order to study, articulate, and display a full skeleton. Last month we battled April showers and fire ants while opening up two lobes of the fossil site. These areas are rich in *Archaeohippus* material. The itinerary of the weekend includes an introductory social the first evening, in site excavations, plaster jacketing and preparations, faunal IDs, as well as a microfaunal washing session. In the month of May, the participants of the excavations will be a valuable asset to the state of Florida in exhibition and research. When someone points to the delicate hooves of the new fossil dwarf horse at its unveiling, these people will revel in the meaning of the phrase "I Dig Horses!" (Dan Cordier)

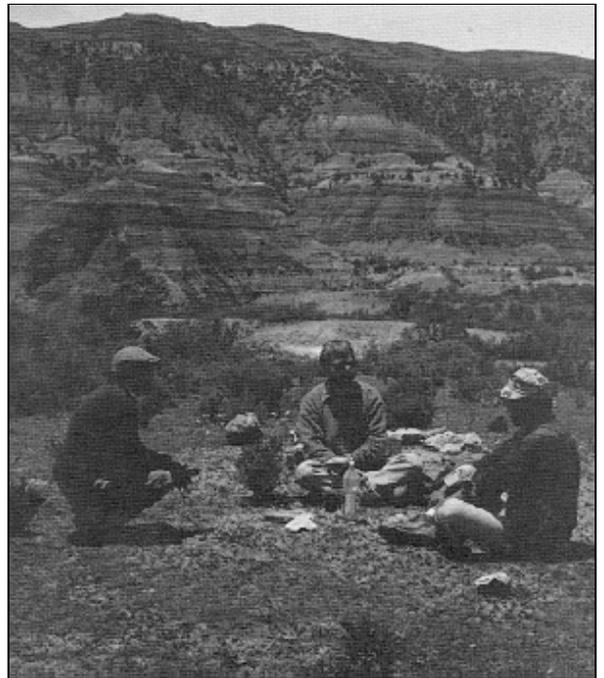
News from the Florida Museum of Natural History (FlaMNH)

During spring break Bruce MacFadden and student Bruce Shockey traveled to Bolivia where they worked at the National Museum of Natural History in La Paz. The paleontology collection there recently has moved into fine new quarters and is being actively curated and studied by a colleague, Federico Anaya. Bruce and Bruce also found time to go into the field with Federico and associates to visit several important high elevation (about 14,000 feet!) Andean localities such as the 25 million-year old Salla basin (see photo). During that time stronger ties were established with their museum and the FlaMNH.

At the end of April and first part of May, Bruce MacFadden traveled to Oregon where he was invited by the Berkeley Geochronology Laboratory to participate in a field excursion in the famous John Day and Mascall fossil beds. These sediments contain some classic late Oligocene to early Miocene localities (ranging from about 15 to 30 million years ago) and include some of the fossil horses also found of similar age in Florida, including *Mesohippus*, *Parahippus*, *Merychippus*, and *Archaeohippus*. At the end of that trip, Bruce went to the University of Utah in Salt Lake City where he worked with a colleague, Thure Cerling, on their project dealing with chemical evidence for interpreting the specific diets of fossil horse species (there will be more about this fascinating new scientific field in a future issue of *Pony Express*).

Upon his return to Gainesville in early May, Bruce and Dan began final preparations for the Thomas Farm digs. Bruce read the proofs of his book *Fossil Horses*, which is now scheduled by Cambridge University Press to be issued this September.

Research for a book chapter on fossil vertebrates of Florida led Bruce MacFadden to make an exciting discovery about the oldest fossil collectors in Florida. Prehistoric indigenous humans are known to have collected fossils for various purposes in other regions. For example, the great paleontologist Simpson discovered that between about 700 and 900 A.D. Native Americans collected Paleocene mammals from the San Juan basin of what is now New Mexico. Similarly, fossil shark teeth are found in inland Paleolithic cave sites in France. So an obvious question was "did Native Americans from Florida collect fossils?" (A related question is "why did they collect fossils?") These thoughts led Bruce to begin a project with UF zooarchaeology graduate student, Laura Kozuch. So far, they have found that Native Americans in Florida did collect fossils, including shark teeth, and they even have discovered a fossil horse tooth at one of the prehistoric archaeological sites! They will be continuing this research in the upcoming months and will report further discoveries and developments as they are made.



Surprise Cave



Since February 1991, the staff of the Vertebrate Paleontology collection of the FlaMNH has been working a 10,000 year old fossil site in a cave with the aid of the Florida Speleological Society. Cave sites are important to paleontologists because they are true time capsules in that they have a beginning (when the cave forms) and an end (when the cave collapses or the opening is blocked).

Surprise Cave had developed a solution tube opening that was later blocked off by rocks falling into the cave as they eroded at the surface. This allowed bones of the animals that had fallen in and died (a death-trap type cave) to be protected from the destructive weathering forces found at the surface. Another advantage the Surprise Cave site offers is that it can be worked in any kind of weather. The disadvantage is that the bags of matrix (sediments rich with fossil bones) must be dragged to the cave entrance through some "snug" passages and lifted 35 ft to the surface using a rope and pulley system.

So what does all this have to do with horses? Some of the information being used to reconstruct the past events at the site (this is called *taphonomy*) is derived from two horse specimens (*Equus* sp.) that were found. The first is a right astragalus, UF# 130947. The astragalus is one of two bones that form the ankle, the other is the calcaneum. This specimen is unusual in that it represents a horse that died at the surface and some time afterward the bone entered the cave, the clue being that it is heavily weathered, unlike the rest of the specimens found. The second element, UF# 130948, is a right p2 (see Vol. 1, No. 1 for tooth terminology). Unlike the astragalus, the tooth is not weathered, suggesting that the horse died in the cave. The tooth does have hairline cracks which make it look dried out due to

the loss of its organic contents. Another interesting feature of the tooth is that it has chew marks made by rodents that also had become trapped in the cave.

Although almost 4000 lbs of matrix have been removed so far, the work at Surprise Cave is not finished. With any luck we may find an articulated horse skeleton. Keep your hooves crossed. (Art Poyer)

Prep Talk

In the last issue I lamented about the fragile skulls of fossil horses, so now I will praise the durability of their post-cranial skeleton (all of the skeleton other than the skull). The larger limb bones of fossil equids (humerus, radius, femur, tibia, and metapodials [cannon bones]) usually show good preservation and minimal breakage, as do the phalanges (toes and hooves). When these specimens *are* broken, contacts are generally good, and they easily are repaired with butvar, white glue, or, if a stronger adhesive is needed, epoxy. It should be noted that in the lower forelimb of horses the ulna is reduced to a boney hook, while in the lower hindlimb the fibula is little more than a small splint of bone near the top of the tibia. Because these reduced elements tend to separate from the larger bone, they may be found in the matrix surrounding the radius or tibia in the field.

Three-toed horses from Oligocene and Miocene sites require special attention from the collector. The central metapodial (the largest met in the three-toed horses) is flanked by two very thin, fragile mets, each of which has two toe bones and a terminal hoof. They easily are overlooked in the field because of their small size and their tendency to break and scatter during fossilization. Check the area around the front and rear mets carefully, or better yet, jacket the entire limb. A reconstructed foot of a three-toed horse, complete with lateral mets and toes with tiny hooves, is truly impressive!

Besides the skull, the most difficult skeletal elements to recover in good condition are the scapula, pelvis, ribs, and vertebrae, in that order. The scapula and pelvis, being thin walled, usually break in many pieces. Ribs, because of their thin shape, have numerous breaks, and because they mostly are porous bone, they often are flattened. The spines of vertebrae almost always break off during the process of fossilization. While it's possible for the collector

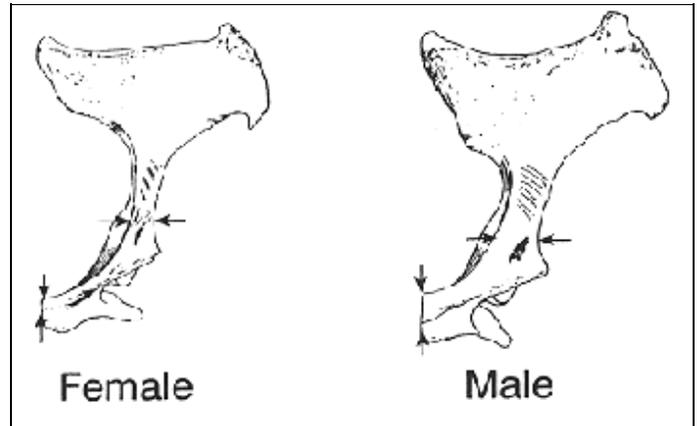
to remove a limb or toe bone wrapped in paper or foil, the wise collector will always make a plaster jacket to remove more fragile elements.

My remarks in this column reflect a Florida bias. Specimens from other geographic areas however, the information here generally is can be much sturdier than Florida specimens, applicable to all fossils. (Russ McCarty)

Invited Research Note

(Editor's Note: Last year when I attended the national Society of Vertebrate Paleontology meeting in San Diego I heard a fascinating talk by Sherry Gust about her doctoral research on Equus from the LaBrea Tar Pits. I thought her work would be of interest to readers of Pony Express, and invited her to contribute a short piece, which follows.)

Graduate student Sherri Gust of the Univ. of So. California and the George C. Page Museum is completing work on population characteristics and size change of large mammals from Rancho LaBrea (RLB) dating 11-32,000 years in age. The RLB horse is most similar to the modern zebra in its anatomy. More than 180 individuals are represented (45% juveniles) and the most abundant postcranial bone is the pelvis. Even though horses have minimal sexual differences in body size, the pelvis reflects the effect of differences in hormones, muscles, and behavior. Sherri was able to observe which traits clearly separate males and females and how they develop from foals to adults. Among the best characters are the width of the pelvis above the acetabulum and the width of the pubis. The thick shape of both regions in the foal is accentuated in the male, becoming even thicker and ridged by muscle impressions. In the female, however, the area above the acetabulum becomes thinner and the edges more sharply defined. Females that have given birth show a dramatic thinning and flattening at the pubis, while those who died before reproducing still have the juvenile shape and thickness. This information can be applied to other fossil horse populations and thus gives us a better understanding of their life histories.



Species Spotlight--*Archaeohippus blackbergi*

In our last issue, we discussed *Parahippus leonensis*, the most common fossil horse excavated at Thomas Farm. This time we will focus on the smaller and rarer species from that important locality, *Archaeohippus blackbergi*. The genus *Archaeohippus* was first described by Cope in 1886 based on specimens from the Miocene of Oregon. Since that time, this small horse also has been found from deposits throughout North America, including California, Nebraska, Texas, and Florida (more about that below). We also know that during the Miocene it roamed as far south as Honduras.

Although over millions of years of horse evolution a general trend was toward larger body size, *Archaeohippus* is one of several examples in which the opposite trend toward smaller size occurred. *Archaeohippus* probably descended from a species of *Miohippus* of slightly larger body size. Estimates for the Thomas Farm species, *A. blackbergi*, indicate a mass of about 40 kg (88 lbs), making it a size similar to, or slightly smaller than, the pronghorn (*Antilocapra* of today). The low-crowned dentition of *A. blackbergi* suggests that it was a browser, feeding on leaves (Cerling and I are currently testing this idea using new chemical assay techniques, see News above). Other related research is directed toward a better understanding of an individual's potential lifespan, the size differences (if any) of males and females, and the long-term over millions of years) patterns of evolution and adaptation of dwarf horses.

Thus, in addition to excavating more fossils of this very important species for a skeletal mount in an upcoming exhibit at the FlaMNH, additional specimens of *A. blackbergi* from Thomas Farm will reveal further clues about the evolution and ancient ecology of this interesting fossil horse.

Famous "Horseologists"--Joseph Leidy (1823-91) and the Florida Connection

Joseph Leidy is widely recognized as the founder of the science of vertebrate paleontology in North America. Until the middle part of the 19th century, paleontology was not recognized as a formal scientific discipline at universities, and those who chose to pursue this field did so with credentials obtained in other fields. It was commonplace for physicians, with their training in human anatomy, to apply their knowledge to comparisons of fossil bones. This was the way that Leidy became involved in vertebrate paleontology. He originally was a physician in Philadelphia but he furthered his interest in paleontology through the University of Pennsylvania (as an anatomy professor) and as a research associate of the Academy of Natural Sciences. Leidy did little field work outside of the east coast, and most of the specimens that he described in his two hundred scientific papers were sent to him by collectors or resulted from large government-sponsored natural history surveys of the western territories.



Paleontologists during Leidy's time were generalists by today's standards, and Leidy too wrote on a variety of subjects related to old bones, ranging from fish to mammals. During the second half of the 19th century Leidy wrote many articles on fossil horses which form an important foundation for our early knowledge on this subject. In fact, Leidy's first scientific article, published in 1847, described the remains of extinct *Equus* from near Natchez, Mississippi. In 1857 he was the author of the three-toed horse genus *Merychippus*, based on specimens collected by the Hayden Survey from the Bijou Hills in South Dakota.

Leidy also wrote numerous articles on fossil horses from Florida. These included descriptions of *Equus* (including the species *E. fraternus*) from the phosphate mines along the Peace River and from sinkholes near Ocala. In 1896 Leidy wrote an important paper on the fossils from the Alachua clays in which he described Miocene land mammals collected from Mixson's Bone Bed in Williston. In that paper he described well-preserved remains of extinct three-toed horses, which he called *Hippotherium*. These are now considered to be close to the hipparion group, including *Cormohipparion plicatile* and related forms.

Leidy's scientific legacy lives on in many ways. Several scientific names have honored his paleontological accomplishments, including the genus *Leidyosuchus* (a gigantic crocodile from the Age of Dinosaurs [Cretaceous]) and the species of late Miocene (5 million year old) one toed horse *Dinohippus leidyanus*. His legacy also persists in the numerous scientific papers that he wrote, including many of the early ones dealing with fossil horses from Florida.

(Next time: "Vladimir Kowalevsky and the Russian connection.")

Horse Talk: Terminology

How are scientific names created?

Etymology is the study of the derivation of words, and in this case, names, from classical language roots--most scientific names come from either Latin or Greek. For example, take the Miocene *Parahippus leonensis*, the common horse from Thomas Farm (see Vol. 1, No. 1).

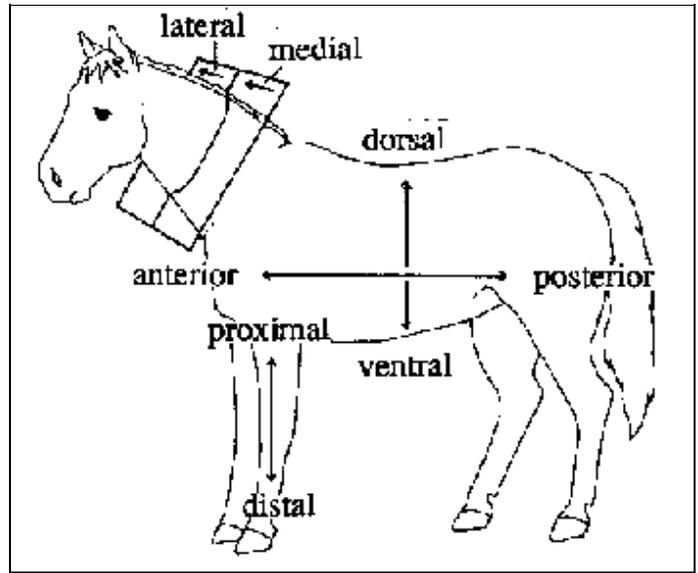
Para- is Greek for beside, side, or near, and in this case pertains to the fact that this genus has side toes. The suffix *-hippus* is Greek for horse. Leon should be familiar to most of us--it pertains to Leon County (around Tallahassee). The suffix *-ensis* is Latin and denotes place, locality, or country. Thus, the formal scientific name *Parahippus leonensis*, can be translated from its classic roots to mean literally "the side-[toed] horse from Leon [County]." Similarly, the etymology of the Bone Valley horse *Dinohippus mexicanus* is derived from *dino-*, meaning terrible or large (as in dinosaur), *-hippus*, horse and *mexicanus*, another means of describing locality or place from where it first was described.

Within the limitation of certain scientific rules (contained in the International Code of Zoological Nomenclature), taxonomists have a broad leeway in proposing formal scientific names. These can denote some attribute about the species or genus being described (such as a horse with side toes), tell something about its genealogical (also called phylogenetic) position within a group (e.g., *Archaeohippus* means ancient horse), or even honor a person (e.g., *Pseudhipparion skinneri* honoring Morris Skinner, see Vol 1, No. 1, or *Dinohippus leidyanus*, for Joseph Leidy).

How to Identify Fossil Horses

Part 2. The horse skeleton and -anatomical positions

Paleontologists, anatomists, and other natural historians have a series of terms that define relative positions among body structures. These anatomical terms are usually in pairs, with each indicating an opposite direction. Several of these are illustrated in the figure. A structure located toward the head of a horse is **anterior**, whereas one toward the tail is **posterior**. A structure located near the back is **dorsal**; one located near the belly is **ventral**. **Proximal** refers to something closer to any point of reference, for example, the origin of a limb. **Distal** is farther from that point of reference, for example, a hoof. **Medial** means toward the middle of the body and **lateral** is away from the middle of the body. In reference to teeth, the terms **lingual** and **labial** (not shown) are interchangeable with medial and lateral, respectively. Lingual (from the Greek word meaning tongue) means toward the inside of the mouth. Labial (from the Greek word meaning lip) refers to the outside of the mouth. Although there are more anatomical terms in the literature, these ten should be sufficient to get you started. (Linda Chandler)



(Next time: Variation, or why are horse teeth so difficult to identify?)

Book Review

The Rise of Mammals, by Michael J. Benton, Crescent Books (originally published by Quarto Books), 1991, ISBN 0-517-02561-2, list price \$17.99. (Note bulk purchase sale at discounted price--see enclosed flyer.)

Within the last few years several popular books on fossil mammals have been published (also see review in Vol. 1, No. 1 of *Savage's Mammal Evolution*) that present this interesting subject in an inviting, readable fashion to the popular audience. So too is the case with *The Rise of Mammals*, written by Benton, a well respected and highly productive vertebrate paleontologist.

After a short introduction about the history of paleontology, this book is organized into six main chapters describing mammal evolution from a time-sequence perspective. This begins with the tiny critters that lived during the Age of Dinosaurs and ends with the mammals of the Ice Ages. In addition to a clearly written and informative text, the illustrations, consisting of photos, charts, and beautiful reconstructions, greatly enhance the attractiveness of this book. There is a comprehensive section on horse evolution based on the fossil record from North America. Also of interest, there is a short section in the back entitled "Understanding Fossil Names," or etymology (see feature article above).

In short, *The Rise of Mammals* is an affordable, readable, and attractively presented book that should have broad appeal to many fossil mammal enthusiasts.

Florida Localities--Leisey Shell Pit

The Leisey Shell Pit, located near the town of Ruskin in Hillsborough County, is one of the most productive fossil localities of Pleistocene age in North America. Discovered during the early 1980s by Frank Garcia and associates and worked extensively since that time, the Leisey Shell Pit has yielded literally tens of thousands of scientifically important fossil vertebrate specimens. Geological dating techniques establish an age for the fossil-bearing units of about 1.5 million years old, thereby placing it in the early Pleistocene. Those parts of the fossil accumulation that have been studied indicate that the bones were mostly deposited in a marginal marine, mangrove-swamp environment.

The mammalian fauna from Leisey is truly rich and extraordinary. It includes very important and well-preserved specimens of indigenous mammals including mammoths, mastodons, saber-toothed cats, rodents, and camels (to name a few) from North America. Along with those mammals, other species that dispersed from South America are preserved, including sloths, armadillos, raccoons, and some rodents. These immigrant species were part of the Great American Interchange that has occurred over the last 3 million years since the formation of the dry-land connection across the Isthmus of Panama (thus linking the northern and southern continents).

At Leisey the horses are a conspicuous part of the indigenous fauna and these are all referable to extinct forms of the genus *Equus*. The taxonomy of the genus *Equus* is indeed complex, but recent work by Richard Hulbert suggests that three species are present at Leisey and these can be distinguished by differences in size and dental pattern. I recently completed a study with Dr. John Hermanson, a colleague at Cornell University, showing that early Pleistocene *Equus*, including the forms represented at Leisey, were among the first horses to evolve a "locking mechanism" in which the tendon of the biceps muscle locks into the upper arm bone (humerus) while standing in a resting posture. This mechanism, which is also found in modern-day horses, allows them to stand for long periods of time without excessive muscular fatigue (it takes energy to stand u , as anyone who stands all day long can tell you).

The Leisey Shell Pit continues to yield a rich and fascinating assemblage of fossil mammals-important new scientific discoveries continuously are being made. The Leisey Shell Pit is open to the public for a fee. Access to the pits for collecting can be arranged through Steve Beck in Riverview, FL (Ph: 813 677-8643). The Tampa Bay Fossil Club sponsors digs for their members only. For information on becoming a member of the Tampa Bay Fossil Club, write to P. O. Box 290561, Tampa, FL 33687-0561.

Now it's your turn: Readers' Forum

(Editor's Note: The response from the request for readers' comments has been very enthusiastic and most welcomed. There were so many responses that space limitations prevent us from including all of them here, but the following is a sampling for this issue.)

Invited Contribution:

HOW I GOT INVOLVED WITH FOSSIL HORSES

by Tom Harrigan (Osprey, Florida)

My interest was first with vertebrates of all types, then next with mammals, and this naturally led to an interest in fossil horses. The reason for this is because of all mammals known to humans, the horse appears to have the most complete fossil record.

By focusing my attention on this magnificent beast, a door was opened which created an opportunity to learn about the evolution (adaptability to change) and distribution (origin and pathways taken) of horses throughout the world. In studying horse evolution I became interested in the physical structure of the horse (bones and dentition) and in the environmental conditions (earth temperature, glaciation, food sources, predators, plate tectonics, etc.) that prevailed throughout its existence from early Eocene to the present time.

Extinctions also have keenly interested me and I wish we had more solid information on this subject. Throughout the history of the horse all but one line has become extinct. These extinctions probably occurred from competition or overspecialization with an inability to adapt to environmental change. A lot more work could be done to explain this in greater detail.

I also became interested in extant *Equus* which then enabled me to relate more easily to the extinct forms. In addition, whatever I learned about the horse helped me to better understand other life forms that existed during the same period.

When I first became interested in horse evolution I had a small collection of *Equus* teeth, a few bones, very little knowledge, and a strong desire to learn. I started by seeking out all popular books that contained sections on horse evolution. After awhile I began to realize that this information was quite limited, often misleading, and frequently inaccurate. I did eventually find better information but it was not as current as I would have liked. Then through my membership in the Florida Paleontological Society I made additional contacts resulting in opportunities for further knowledge.

The science of paleontology is ever changing and new technology, new finds, and different interpretations of existing collections lead to changes in our thinking about fossil horses. I find these changes to be fascinating. Also, the experts are not in agreement on all points of view, because paleontology is not a science that relies completely on proof. In this regard it is interesting to listen to the different points of view and possibly arrive at one of my own, independent of those being offered.

I would like to tell you about some exciting new additions to my collection of fossil horse teeth that I am quite proud of. Among them are one or more teeth of *Hyracotherium angustidens*, *Palaeotherium annectens*, and *Mesohippus bairdii*, from outside of Florida. I also added single teeth of *Parahippus*, *Merychippus*, *Nannippus ingenuus*, *Pseudhipparion*, and *Calippus*, all of which are from Florida.

Whether you are an arm-chair or a pick-and shovel paleontologist, I wish you all good luck and great adventure in what I have found to be a very interesting, rewarding, and sometimes frustrating endeavor!

Other responses from our readers:

From the Jaws of...

"Horse meat makes good bait for Great White Sharks. So on behalf of the great whites, I'm donating as a friend to your fund." (Dr. Cliff Jeremiah, Jacksonville)

To MacFadden, Morgan, McCarty, Chandler--

"Thanks! The newsletter is great we look forward to more. I would like to see line drawings and permission to reproduce newsletter contents for classrooms and educational opportunities (not for profit, of course). Keep up the good work." (Sara Morey, Longwood).

(Editor's comment: The newsletter is not copyrighted as yet. Given its purpose and scope, permission is hereby granted for any of the uses mentioned above. Please do feel free to copy it for educational purposes!)

Super publication! You folks did a great job! I also want to thank whoever added Brian's name to the address label. He enjoyed that. He also had the newsletter read before I got home from work, and immediately started to tell me all about it as I walked in the door... am looking forward to your next issue." (Tom Ahern, Tampa)

Dear Editor--I would like to suggest that you move the margin adjacent to the stapled center at least 1/4 to 1/2 inch wider to accommodate punched holes so the newsletter can be placed in a binder.... I think the F.F.H.N. is a good idea and has lots of potential, even room for expansion or more issues for the price." (John Connaway, Clarksdale, MS)

Dear Mr. MacFadden-- Thank you for sending me the first issue of your interesting Florida Fossil Horse Newsletter. I do not know if you are aware that Greece is a country where many vertebrate fossils have been found, including horses. Three famous localities are Pikermi in Attiki County, Almyropotamos in Evia (or Euboea) County, and Megalopolis in Peloponesos. All best wishes in your nice efforts and if you have any inquiries, do not hesitate to write. Regards," (Dimitris G. Minatidis, M.Sc., Geologist-Geochemist, Editor, Hellas, Greece)

Dear Bruce: On behalf of the Tampa Bay Fossil Club Inc. we are donating \$250.00 to help the Florida Fossil Horse Newsletter... A number of our members have sent in reservations for the Thomas Farm dig, I think this is an excellent idea for the amateur to learn and experience such a unique and famous dig site." (Terry Sellari, President, Tampa Bay Fossil Club Inc.)

Thank you for your kind review of *Mammal Evolution* in your Fossil Horse Newsletter. It's quite the nicest I've seen. The book has now been translated into Spanish and Japanese." (Bob Savage, Bristol, England)

Postcard from Savage (see photo): White Horse-Wiltshire. This white horse image was cut into the hillside at Cherhill in 1780. It is 160 ft from head to tail--*Equus "longissimus!"*

Announcements

Upcoming Activities

Due to the successful registration for the Thomas Farm digs, we are planning to offer other weekend campovers at Thomas Farm this summer. Other possible sites and activities also are being considered. Call or write Dan Cordier for more information.

Russ McCarty is planning a casting and mold-making session for a summer weekend. Call or write Dan Cordier for more information.

June 17, 1992: Dan Cordier will present a talk at the Florida Fossil Hunters meeting in Orlando. Call Dean Sligh at (407) 290-2547 for information.

August 1992: Microfaunal screenwashing workshop--see flyer and contact your local club officers.

Fall 1992: Panhandle field trip; more about this in the September issue of *PonyExpress*.

May 1993: European Adventure: Southern France. We are in the preliminary stages of planning for a two-week trip to southern France. The purpose of the trip will be to visit cave paintings of prehistoric horses (at Lascaux), the Museum of Anthropology, located in a 16th century chateau at Les Eyzies, some of the local museums, and possibly some of the classic fossil horse localities. And, of course, along with these goals we also will sample the beautiful countryside, food, and other cultural and natural attractions that southern France has to offer. Due to logistics, the trip will be limited to between 12-15 people. If you are tentatively interested, let Dan Cordier know as soon as possible. Preliminary inquiries about this trip have been most encouraging. Other foreign trips also are being considered for future years.

A Newly Revised Edition of *Fossil Vertebrates--Beach and Bank Collecting for Amateurs* by M.C. Thomas will be published this summer. This is a thorough fossil guide essential for amateurs and professionals alike. See flyer for ordering information.

The next issue will be mailed out during August and, in addition to the regular columns, it will feature a special article on Bone Valley horses.

Pony Express

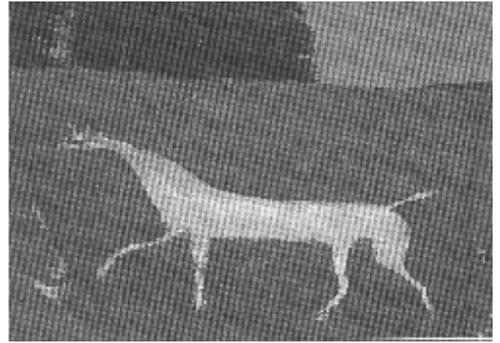
Florida Fossil Horse Newsletter
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- Russell McCarty, Contributing Editor
- Art Poyer, Contributing Editor
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All contributors and supporters receive Pony Express and special invitations to talks, digs, 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--1992***

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and sent to the Managing Editor, at the address listed above.

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.

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Volunteers:

Volunteers are an important part of our operation and so far they have contributed a total of 208 hours helping with the mailing list, folding and mailing out the newsletters, and other important tasks. Thanks go to the following for their volunteer support:

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