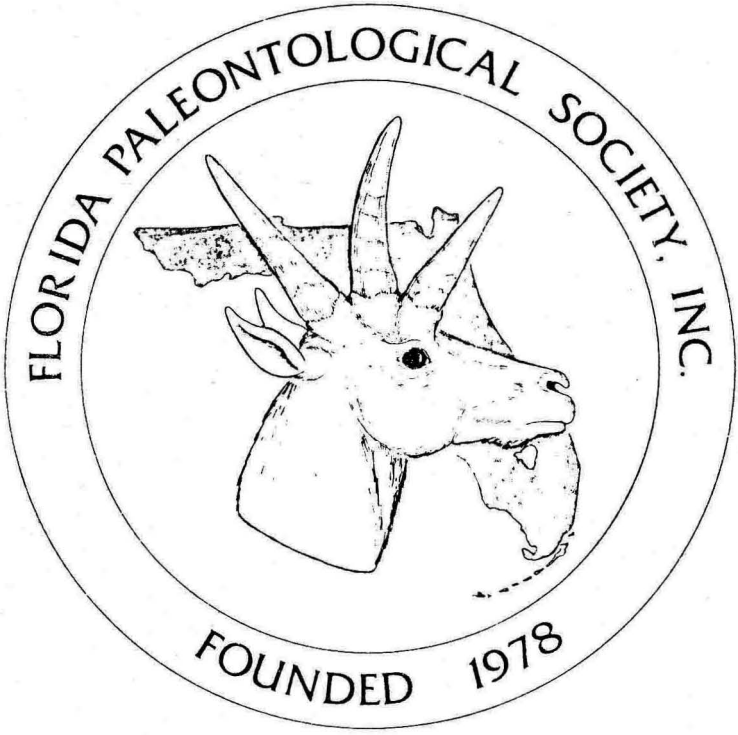
newsletter

Florida Paleontological Society, Inc.



Volume 2 No. 2

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Annual dues for FPS are $3.00 for persons under age 18 and $6.00 for persons over age 18. Persons interested in FPS membership need only send their names, addresses, and appropriate dues to Howard H. Converse at the Florida State Museum. Please make checks payable to FPS. Members receive a membership card and the bimonthly FPS Newsletter.

Newsletter Policy: All news items and photographs related to paleontology in Florida are welcome. The deadline for each issue is the 15th of the month before publication. The editor reserves the right not to publish submissions and to edit those which are published.

Florida Paleontological Society, Inc.

Volume 2 Number 2 *NEWSLETTER* April 1985

LIVE OAK CULTURAL COMPLEX "ON THE MOVE"

by Carol Herring

"We're like a roomful of expectant fathers," one member of the Museum-Park Complex Steering Committee was heard to remark. The "baby" is a 3100 square foot brick railroad passenger depot.

The committee at the request of the Suwannee County Historical Commission had been working since April 1984 to arrange to move the 76 year old building from its original site between the railroad tracks to a new, permanent site in what is now the Museum-Park Complex in Live Oak, Florida.

In negotiations with Seaboard Systems and through cooperation of local governments and private organizations, land and the two abandoned railroad buildings were acquired. Prompt action was needed, however, to rescue the passenger depot since the railroad had immediate plans to demolish the classic building to make way for a new track.

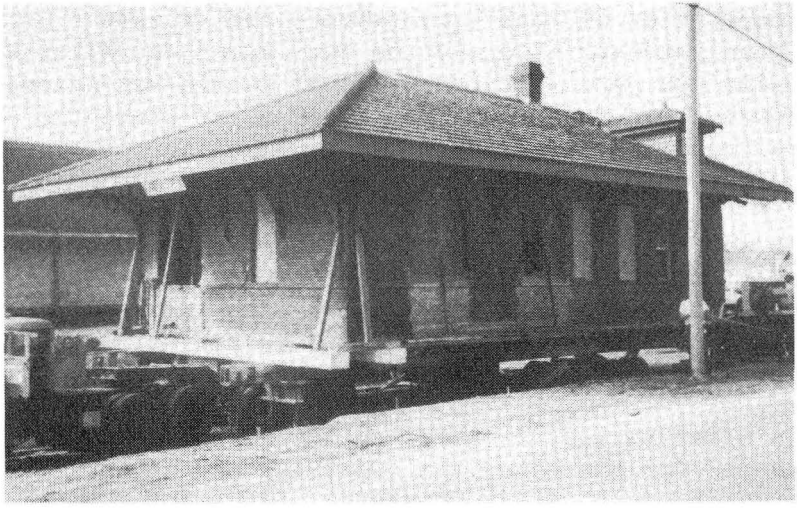
It was readily apparent that the move would be no small undertaking and would be expensive. The building was on a concrete slab with brick walls and a red tile roof. Even the most conservative estimates on cost of moving had been high.

In order to justify spending the amount of money needed for the move, the committee sought the opinion of the State Historical Architect and the State Building Historian before making a commitment to the project. These gentlemen found the building to be historically valuable and worth retaining for its many architectural features in "surprisingly"

good condition. Armed with these assurances, the committee decided to proceed "full speed ahead" to save the depot.

While bids were being let for building movers, a fundraising drive was launched in the community which reached virtually every merchant and business. The city donated $2500 and the county $5000 in addition to generous donations from private sources.

Other fundraising efforts include Adopt-A-Brick and Save-the-Depot t-shirt sales. For $3.00 each a person can buy a brick in the depot building. At time of purchase, the buyer receives an adoption certificate and purchasers' names will be inscribed in a book which will be kept in the restored depot. If you are interested in adopting a brick (or bricks), there are about 69,000 left from which to choose! Please contact the Suwannee County Historical Commission in Live Oak. So far 1000 bricks have been adopted. T-shirts are for sale at $6.00 each from Craps Realty.

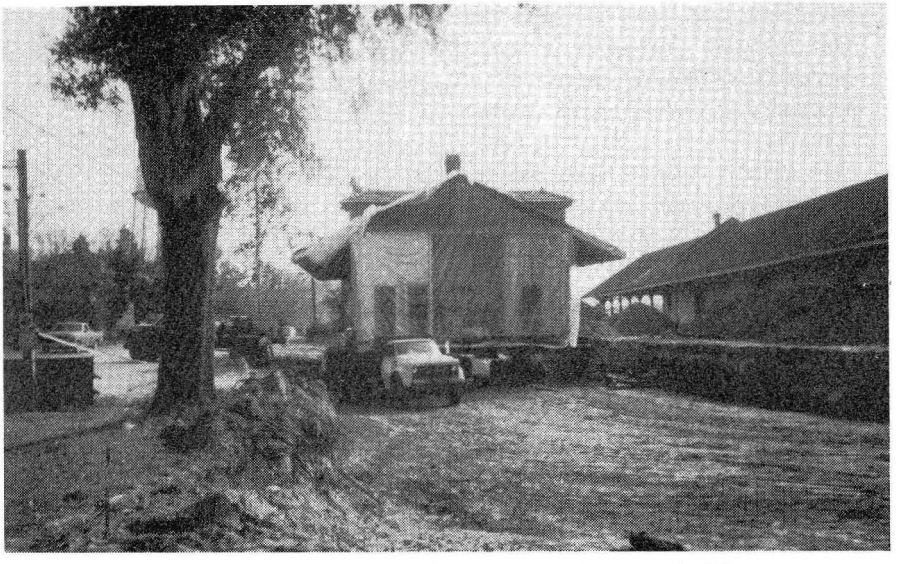


One-half of Passenger Depot ready to move. Freight depot is in background.

So far, $56,000 of the needed $86,000 has been raised. Pride In Action, a group of Live Oak merchants, has bought the site on which the depot now stands for $25,000. The group will sell the land to the historical commission if the commission can raise enough money to buy the land and pay the moving costs. If the fund drive falls short, Pride In Action will mortgage the land to the commission on a 99-year mortgage.

The actual moving of the building was done by Hygena House Movers of Jacksonville and generated much local speculation as the movers worked under and around the depot. They were so close to the railroad tracks that work was necessarily interrupted when trains came through several times a day.

The building itself had to be divided and moved in two sections and then put back together at its destination. Each section was supported on huge steel "I" beams, jacked up, and pulled out by truck. The move was complete in January. Today the Live Oak Passenger Depot rests on its new foundation in the Museum Park Complex.



One-half of the Passenger Depot arrives at its new home next to the old freight depot which is also part of the Museum-Park Complex.

With this first phase of the project completed, the committee is looking toward restoration of these buildings and recommendation for placement on the National Register of Historic Places. The Freight Depot will be renovated for use by the Suwannee County Historical Museum. *(Photographs by Seymour Chotiner)*

MILLERS' 25 TO 30 MILLION YEAR OLD FOSSILS TO BE STUDIED BY CARL FRAILEY AT MIDLAND COLLEGE, TEXAS

On March 2nd, a large collection of Florida vertebrate fossils was turned over to Dr. Carl Frailey for study at Midland College. The fossils which are believed to be 25 to 30 millions years old were collected from deposits in the paleochannel of the Suwannee River by Harry and Phyllis Miller of Ocala.

According to Dr. Frailey, who has studied fossils of a similar age, there has been relatively little known about the Arikareean age of Florida's prehistory because of a scarcity of fossil material. The Miller fossils are important because of the large number of species represented and the good preservation of the bones.

"No doubt there are more than a few species in this assemblage which will be new to Florida or even new to science," Frailey said.

After he completes his study, Dr. Frailey will decide which museum will get the Miller fossils. The Millers have indicated that they prefer the Florida State Museum as the fossils' final home.

PREPARATORS' TECHNIQUES

Material Safety Data for Monsanto Butvar B-76 by Howard Converse, Jr., Florida State Museum
In the last Newsletter, the Society offered for sale to its members one pound bags of the consolidant Butvar B-76. Due to current trends toward

health safety, the following data has been compiled for your safeguard.

Butvar B-76 polyvinyl butyral resin does not present significant eye irritation or eye toxicity requiring special protection. It also does not present significant skin concern.

Physiological effects have been evaluated using laboratory animals and produced the following results:

Oral LD_{50} (Rat): > 10,000 mg/kg, practically nontoxic
Dermal LD_{50} (Rabbit): >7,940 mg/kg, practically nontoxic
Eye Irritation (Rabbit): (FHSA) 2.8 on a scale of 110.0, slightly irritating
Skin Irritation (Rabbit): (FHSA) 0.0 on a scale of 8.0, practically non-irritating

Microbial mutagenicity assays utilizing five salmonella strains with and without mammalian microsomal activation and one yeast stain did not reveal any mutagenic effect.

On the basis of these tests, Butvar B-76 polyvinyl butyral resin does not appear to possess any toxicologic properties which would require special handling other than the good hygiene and safety practices employed with any household chemical.

Physical data consists of the following: *appearance:* white granular solid; *bulk density:* .22-.25 gm/cc; *specific gravity:* 1/1 gm/cc; *volatile content:* 1.5% (water and trace organics); *melting point:* softening range 140-200°C.

These physical data are typical values based on material tested but may vary from sample to sample.

Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

Disposal information is classified under non-hazardous waste. Butvar B-76 polyvinyl butral resin is not a "hazardous waste" as defined in 40 CFR261 - "Identification and Listing of Hazardous Waste" and it may be disposed of in a sanitary landfill licensed to receive non-hazardous wastes.

The above data covers Butvar B-76 granular powder only. The entire picture changes once it is mixed with solvent. Though Butvar B-76 is safe to handle in the dry form, once mixed with acetone or alcohol, the rules change for the solvent safety requirements only. All data has been supplied by the laboratories of Monsanto Company, St. Louis, MO.

Ed. Note: As a follow-up to the reconstruction of the false saber cat at the Gainesville Oaks Mall mentioned in the February Newsletter, we present How to Feed and Care for a False Saber Cat by S. David Webb. *This will be a series over the next two newsletters.*

We may begin by noting the rarity of these cats. Only a handful of institutions have been so fortunate as to acquire a false saber-tooth cat. At each institution only a few trusted curators and technicians have worked with these cats. And of those few individuals who have been so privileged, fewer still are alive today to relate their experiences. This [information], therefore, has been gleaned partly from an extended search for previous information from other institutions where false saber cats have been kept, and partly from our own experiences since the Florida State Museum captured its own false saber cat.

HOW THE FLORIDA STATE MUSEUM CAUGHT ITS FALSE SABER CAT

It began in 1973 when Mr. Ronald Love planted an okra crop on his farm near Archer in Alachua County, Florida. His harrow turned up a large rust-colored bone that looked quite unlike the long-bone of any farm animal he had ever seen. Also because it was very dense, he correctly surmised that it had been fossilized. So he brought it to the Florida State Museum where the Curator of Fossil Vertebrates identified it as the tibia of *Teleoceras*, the short-legged rhinoceros which had been extinct for about five million years. Thus began the famous Love Bone Bed excavation.

For eight years the Florida State Museum excavated that rich site under the okra patch. The National Science Foundation found the project worthy of its support during many of those years. The site reached a depth of 25 feet and a length of about 150 feet as our excavations followed the channel of an ancient stream bed. It gave the richest sample of vertebrate life in the late Miocene (8 to 10 million years ago) ever discovered in North America.

The Love Bone Bed yielded bones and teeth of about 100 species of vertebrate animals, many quite extensively represented. Among the vertebrate animals represented at the Love Bone Bed many of the commonest ones were large herbivores (plant eaters), such as the rhinos and mastodons. Another group of common animals were species such as turtles, garfish and alligators, that lived right in the ancient stream. Land carnivores, as expected, were relatively rare. But even so, the excavation was so extensive and the bone bed so rich, that many bones of *Barbourofelis*, the false saber cat, were collected.

After the excavation was closed, the fossils in the museum collection were repaired and sorted. Then the frequencies of all bones representing each fossil species were tallied. The number of the most

frequent single bone representing each species in called its MNI (minimum number of individuals in the total sample). For example, the MNI of the short-legged rhinoceros, *Teleoceras*, is 40 because it was represented by 40 left calcanea. The MNI for each common kind of large land animal is listed in Table 1 in order of abundance. The commonest land animal is the giant tortoise, *Geochelone*. The next commonest is the short-legged rhino, *Teleoceras*. The Florida State Museum erected a complete skeleton of this extinct rhino in 1981. It undertook a similar effort in 1985 to mount the false saber cat, *Barbourofelis*.

The Love Site yielded by far the largest sample of bones representing that genus ever discovered. The composite skeleton of *Barbourofelis* is the only one in the world.

TABLE 1

LAND VERTEBRATE SPECIES FROM THE LOVE BONE BED IN
IN ORDER OF MNI FREQUENCY
(after Webb, MacFadden and Baskin, 1981)

SPECIES	MNI
Geochelone (giant tortoise)	65
Teleoceras (short-legged rhino)	40
Hemiauchenia (extinct Llama)	31
Cormohipparion (large three-toed horse)	30
Procamelus (extinct camel)	24
**Barbourofelis* (false saber cat)	23
Pliohippus (large one-toed horse)	22
Tapirus (extinct tapir)	20
**Epicyon* (hyaenoid dog)	20
Aphelops (long-legged rhino)	18
Astrohippus (medium, one-toed horse)	17
Amebelodon (shovel-tusked mastodon)	13
Pediomeryx (extinct giraffoid)	12
**Leptarctus* (extinct skunk)	12
Prosthennops (extinct peccary)	11

(continued on page 9)

TABLE I (Con.)

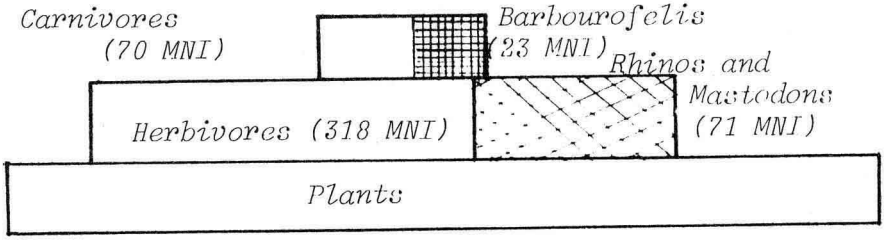
SPECIES	MNI
Nimravides (long-legged cat)	9
Hipparion (medium three-toed horse)	8
Arctonasua (large extinct raccoon)	6
Small ruminants	3
Small horses	3
Aepycamelus (giraffe-camel)	1

*These species are carnivores.

WHAT *Barbourofelis* ATE

In nature, meat-eating animals (carnivores) are much less common than the plant-eating prey (herbivores) that they eat. The carnivores are usually about one-tenth as common as herbivores. This kind of relationship is known as the "Eltonian Pyramid" after Charles Elton, an American ecologist who developed this idea. Plants provided food for the herbivores and formed the base of the pyramid. They must have been very abundant, but since they were not preserved at the Love Site, they are merely estimated (see Figure 1).

Figure 1



In general, the larger-bodied carnivores prey upon the large herbivores in a given region. The two largest land carnivores at the Love Site are both members of the cat family. *Nimravides* was a

long-legged cat, with biting canines, somewhat similar in general proportions to a jaguar. *Barbourofelis* was much shorter-limbed and about ten to twenty percent lighter in estimated body weight (120 pounds) than *Nimravides*. The magnificent sabers of *Barbourofelis* would have given it an advantage over *Nimravides* in penetrating vital parts of large prey. It is possible that the larger, partly amphibious herbivores such as *Teleoceras*, the short-legged rhinoceros and *Amebelodon*, the shovel-tusked mastodon, made up *Barbourofelis'* most common prey, but horses, camels, and other medium-sized herbivores were also probably eaten by *Barbourofelis*.
Coming in June: How Barbourofelis lived, how it ate, how it gots its name, and a bibliography.

VP PREPARATORS' WORKSHOP, NORTHERN ARIZONA UNIVERSITY

Howard Converse, Jr. (FSM) will give two 2 1/2 week workshops on fossil preparation July 15-29 and July 31-August 14 at Northern Arizona University in Flagstaff. Total fees will be $200 per person to cover semester hours (3) $50 fee and $50 material fee. Housing is available through NAU. Enrollment is limited to 18 per session and deadline is June 15, 1985. Please contact Dr. Larry Agenbroad, Department of Geology, Box 6030, Northern Arizona University, Flagstaff, AZ 86011.

NEW MIOCENE SITE IN MARION COUNTY *by Gary S. Morgan*

Since the beginning of January the museum has been excavating an exciting new fossil locality on a horse farm in Marion County. During the construction of a racetrack, bones were unearthed by heavy machinery in a massive green clay more than 10 feet below the ground surface. These fossil bones were brought to the attention of museum paleontologists by the owner of the property, John Shimfessel.

One of the original bones John brought to the museum (actually found by his son) was a rhinoceros radius. Since rhinos went extinct in North America 5 million

years ago, their presence alerted us to the great age of this site. Since January, FSM paleontologists have been working at the site and have recovered hundreds of bones, including a number of partially articulated skeletons. Mr. Shimfessel has been most generous in allowing us to excavate fossils in the middle of his racetrack, even though it seemed like we were always in the way and hindering progress.

In spite of the salvage aspect of our collecting and the somewhat adverse working conditions (imagine a 20 ton road grader passing within inches of your backside every few minutes, while you are hurriedly attempting to dig a bone out of the ground), we have been able to collect a large sample of bones that add significantly to our knowledge of Florida late Miocene mammals.

Several of the species present at the racetrack site are new to science or are very rare in other sites. Furthermore, many individuals are represented by articulated or associated skeletons, a great rarity in Florida. Certainly, the most impressive fossil yet recovered is a complete pair of lower jaws of a shovel-tusked gomphothere. The jaws are over five feet long; the lower molars alone are almost a foot in length. This huge elephant-like beast had the lower jaws greatly elongated into a shovel-like spout that ended anterially in two flattened chisel-like tusks. The jaws are still being prepared by Russ McCarty in the VP prep lab but preliminary study indicates that they may represent a new species related to either *Amebelodon fricki* or *Torynobelodon barnumbrowni*, large shovel-tusker originally described from the late Miocene of Nebraska. A partially articulated post-cranial skeleton of a second individual has also been found, including pelvis, scapula, hind limbs, and one front limb, but not the skull, jaws, vertebrae or ribs. Although this skeleton is from a very large animal (the femur is almost four feet long), the ends of the long bones or epiphyses, are not firmly fused to the shafts, indicating that it was

not fully adult. A third individual recovered from the site is a baby gomphothere that still retained its several inch-long milk or deciduous tusks. These compare with the six and a half foot long upper tusks of the adult.

Besides the "shovel-tusker", the other common mammal at the site is the large, long-limbed rhino, *Aphelops*. Although *Aphelops* is known from other Florida late Miocene sites such as the Love Site and the Mixson Bone bed, it is generally uncommon, while the short-limbed amphibious rhino, *Teleoceras*, is usually the most common. (The mounted rhino skeleton at the FSM is a *Teleoceras*.) *Teleoceras* has yet to be found at this new site, while parts of at least four skeletons of *Aphelops* have been recovered, including skulls, lower jaws, and articulated limbs. Two species of three-toed horses and primitive one-toed horses have been found at the racetrack, several of which are represented by articulated limbs. An associated skull and lower jaw of one of the horses is an especially rare find. The idea of eight million year old horses being found on the site where thoroughbred horses will race is a thought-provoking coincidence. A number of complete turtle shells and the partial skeleton of an alligator round out the vertebrate assemblage.

The racetrack site is a classic example of what puzzles paleontologists face. The pieces of the puzzle are there but fitting them together is not an easy task. The external fine-grained clay suggests deposition in very quiet water, perhaps a pond or oxbow lake alongside a large river. Perhaps the largest mammals became mired in the mud and were stranded. The aquatic turtle and alligator would also support a quiet water pond. However, another part of the puzzle is the missing pieces - animals like gound sloths, camels, carnivores and *Teleoceras* have not yet been found, even though they are common at other Florida fossil sites of similar age, for instance, at the Love Bone Bed. Fish, frogs, birds and small mammals also appear to be absent.

Why is this? At the present, we don't have all the answers (and we probably never will), but hopefully after we have prepared and catalogued all the specimens, we will be able to reconstruct the paleoenvironment of this most unique new fossil site.

(L-R) Bonnie McEwan, Steve Emslie and Anne Pratt delving into the past while the future is carved in the form of a racetrack next to them.