newsletter

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florida paleontological society, inc.

Volume 2 Number 4 NEWSLETTER August 1985

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R E M I N D E R

The FPS ANNUAL MEETING is Saturday, October 5th, at 8:00 a.m. in the J. Wayne Reitz Student Union, University of Florida.

C A L L F O R P A P E R S

If you would like to present a ten to 15 minute talk at the FPS annual meeting, please submit an abstract describing your proposed subject by Monday, September 30, 1985, to Dr. S. David Webb, Florida State Museum, University of Florida, Gainesville, FL 32611. Please note if you will need audiovisual equipment.

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PRESERVING AND PREPARING TEETH AND TUSKS

by Russ McCarty, Florida State Museum

Vertebrate teeth comprise one of the most commonly found groups of fossils in Florida. Tusks, which are modified incisors or canines, are rarer, making up only a small percentage of all teeth found by the collector. Taken as a group, not only are teeth common, but due to their physical nature, they are often the best preserved fossils. Teeth are also one of the most diagnostic of fossils; in fact, many new species have been named from teeth alone. While teeth are durable and hard, they are not always well preserved, especially those found in terrestrial sites. A quick survey of the facts about teeth will give the collector a better understanding of the problems he faces.

Teeth are modified parts of the dermal skeletal material and probably evolved from the denticles of dermal plates found at the margins of the mouths of primitive vertebrates. The major components of teeth are enamel and dentine, or a substance capable of performing the same function as enamel. Enamel is much harder and more highly mineralized than dentine and forms a thin, hard, shiny layer on the surface of mammalian teeth. There are exceptions such as the teeth of sloths which lack enamel, its function being taken over in this case by a specialized form of dentine. In the average mammalian tooth, the enamel is tightly bonded to the dentine beneath it. Thus, the tooth behaves like a single unified entity. Damage seen in fossil teeth comes from physical action like swelling-contracting clay or ground movement causing simple breaks.

Tusks, the specialized teeth, are carried by such groups as elephants, gomphotheres, mastodons, sea lions, peccaries and many other extinct groups. These modified teeth often lack enamel and have a very different structure than ordinary teeth. The teeth of elephants and their ancestors and relatives have a growth pattern that adds dentine in concentric rings. A cross section of an elephant tusk resembles that of a tree in that concentric growth rings can be seen. This particular growth pattern is responsible for the flaking tusks that most Florida collectors have encountered.

Preparing and conserving most teeth presents the collector with no unusual problems. Simple breaks can be repaired with most glues. A badly crushed tooth can be consolidated with thinned down glue. Missing areas can be restored with filler materials such as mache, plaster, plastic wood, or any other suitable filler.

Tusks will often require much more attention. It is almost impossible to find a complete intact tusk in Florida. The tip end of tusks (the last 12 to

18 inches) will sometimes survive the transition to the present in reasonably good condition, but the rest of the tusk up to the root end usually has major breaks throughout its length. Unelss the collector wants a box full of souvenir fossil ivory chips, he or she will have to follow some basic guidelines.

The very first rule should be: Make a plaster jacket!! Don't pull that tusk out of the ground. You may find yourself holding the top half and looking at the bottom half still in the ground. Even if it appears to be an isoalted tip -- jacket it. Granted, a six or seven foot long tusk makes for a pretty big plaster jacket, but the finished product can be well worth the extra time and effort. Reinforcing rods or wood or metal should be used if the size of tusks warrants such reinforcement.

At home or in the lab, the tusk can be prepared carefully, making sure not to peel off tusk material with the matrix. If the matrix is clay, wetting the clay aids in its removal. Expose half of the tusk for its total length, cutting the jacket down a bit if necessary. If sections of the tusk are solid (not flaking) they can be cleaned with dish detergent and water applied with a soft rag or sponge. When the tusk has air dried, repairs can be made. Flaking can be halted by the application of thinned down Butvar or some other consolidant. At the Florida State Museum, consolidant is applied with a plastic squeeze bottle. A large tusk may require a gallon of thinned down Butvar before it is stabilized. Now that the surface of the tusk has been stabilized, attention can be focused on other damage. Most large tusks will be broken into three or four sections, each, one or two feet in length. It is tempting to remove the sections, clean off the contacts, and glue them together so that you will have that beautiful six foot tusk to hand in your den. Forget it . . . Clean the matrix out of

the cracks between the sections as best you can and stuff some adhesive down those cracks. At the museum we have found that epoxy molding resin works well. It is thin enough to trickle down the cracks and not only fills them up but solidly binds the two sections together. Epoxy glue or body dent fillers work also. If they are thick and viscous, you may have to help them down the cracks with a spatula. Since you will be applying glue from the top and cracks go all the way through, you will need to apply tape or clay to the sides of the tusk to prevent glue from leaking out.

When your repairs are completed on one side of the tusk, it is time to flip it. Now wait a minute..!! I don't mean to turn it over right now and dump it out on the table. We're going to trim the existing plaster jacket down all around as much as possible. Then put a nice thick layer of paper over the repaired side of the tusk. Wet the paper! Wad it up! Build up a layer at least an inch thick. We want a nice soft cushion to protect this treasure, and if we have to cut into a plaster jacket for some reason we want the tusk far enough away from a saw blade so that it won't be damaged. Now make a nice plaster jacket over this paper. Make it not only strong, but attractice, smear a smooth layer of thick plaster over the jacket to even out the bumps and hide the burlap. Once you flip the tusk, this jacket may have to serve as a permanent display cradle for your tusk.

When the jacket has dried and cured for a day, you may then file it over. The old jacket should lift right off if you haven't bonded the new one to it. (This can be avoided by brushing vaseline on the edges of the old jacket before you make the new one, or by making the new jacket shallow). The process of cleaning, hardening, and gluing must be repeated on this side. It will be necessary to use masking tape or clay to plug holes on this side of the tusk also before using epoxy.

With hard work and a little luck, you should now have a tusk. It may have to stay in the cradle depending on its size. A mammoth tusk eight or nine feet long might weigh over two hundred pounds. It would break under its own weight if not supported.

THE "ROSETTA STONE" FOR MAMMALIAN EVOLUTION IN SOUTH AMERICAN (continued from June issue)

The oldest Siluriformes (indeterminate) were previously known from the Maestrichtian of the Coli-Toro Formation in Argentina (Cione & Laffite 1980). One genus, Vorhisia, has been recognized on otoloths (Frizzell & Koenig 1973) in the Maestrichtian of North America, although this identification is very tenuous.

The discovery of Siluriformes in the El Molino Formation (Wenz 1969), is the second known secure record of this order in the Maestrichtian. The Ariidae have a recent worldwide marine distribution only along coasts and can enter freshwater river systems. Their early biogeographic history probably involved dispersal at a time when the American landmasses were either in contact with or were close to those of Africa and Europe (Smith et al. 1981). Ariidae must thus have originated before Aptian time (~110 Ma) to permit this dispersal. Apparently cf. Rhineaster is present at Hotel Cordillera, Tiupampa, and Villa Viscarra (lower level). The new genus, which is most likely referred to the freshwater family Ictaluridae, from Tiupampa is also the same as the older one from Hotel Cordillera (M. Gayet unpublished).

Two freshwater families of Characiformes have temporal range extensions. The oldest Characidae previously known were from the Paleocene of Morocco (Cappetta et al. 1978). In South America the oldest ones were from the late Tertiary of Brazil (Schaeffer 1947, Weitzmann 1960). The fossil records of

Characidae from the Miocene of Peru (Cockerell 1921) and the Late Cretaceous of California (Cockerell 1919) and Wyoming (David 1946) are based only on scales, and are of questionable identity (Weitzmann 1960). The oldest Serrasalmidae were previously known from the Miocene of South America (Gery 1977). The discovery of Characidae in the El Molino Formation at Hotel Cordillera and Agua Clara (Gayet 1982a), and of the Serrasalmidae in the lower level of Villa Viscarra (M. Gayet unpublished), extends their first known occurrence to the Maestrichtian. Characiformes are found today only in South America and Africa, a distribution suggesting their presence in Gondwana before Aptian time.

Osteoglossidae and Hiodontidae are typically stenohaline families. The Osteoglossidae occur today in South America, Africa, and Australia, and are known as fossils (Phareodus) in the Eocene of North America (Grande 1980). This distribution suggests a Gondwana origin for this family (Gayet & Meunier 1983). The Hiodontidae occur today only in North America, and as fossils in the Eocene of North America (Eohiodon--see Grande 1980) and in the Jurassic of China (Lycoptera--see Greenwood 1970). If the El Molino Osteoglossidae can be accepted as cf. Phareodus and Hiodontidae as cf. Eohiodon, then they may have been participants in the Late Cretaceous faunal interchange that occurred between North and South America (Rage 1978).

No true period has previously been reported from a typical Cretaceous level. The oldest previously known true percoid was Proserranus (Serranidae) from the Danian (early Paleocene) of Sweden (Davis 1890). A hemaxanal complex from Hotel Cordillera may represent a Beryciforme or a Perciforme. This locality is primarily freshwater, but some remains belong to marine taxa (selacians, pycnodont) and therefore this element cannot be dismissed as a possible marine group much like the Serranidae (Schaeffer 1947). The distribution of living Percichthyidae is disjunct,

including southern South America, western North America, southeastern Australia, and northeastern Asia (Berra 1981), and was surely more extensive in the past.

Erythrinidae (cf. Hoplias) is a typically South American freshwater group. The oldest previously known fossils were from the Miocene of Ecuador (Roberts 1975). They are not known from any other locality of the El Molino Formation.

The freshwater family Lepisoteidae was not previously known in South America. This new record from Tiupampa invalidates the view of Wiley (1976) who presents a biogeographic model predicting that "... only the vicariant sister group of gars may be found among the fossil fauna of South America."

Thus, of the 10 Actinopterygii from Tiupampa, five families (Enchodontidae, Ariidae, Ictaluridae, Serrasalmidae, Characidae) and possibly a sixth (Percichthyidae) have previously been recorded from the El Molino Formation at Hotel Cordillera or Agua Clara. The Osteoglossidae (cf. Phareodus) must have been present in South America since Aptian time and dispersed to North America before the end of the Cretaceous. The family Hiodontidae (cf. Eohiodon) probably entered South America at this same time from North America. The age of the formation cannot be based on cf. Hoplias. The 10th actinopterygian, Enchodus oliveirae, is a typical Maestrichtian marine species.

Lungfish are represented by the families Ceratodontidae and Lepidosirenidae (the latter also recorded in Late Cretaceous rocks in Peru [Sige 1972] and Argentina [Ameghino 1906, "Ceratodus" iheringi]); amphibians by frogs, apparently of the family Leptodactylidae (J.C. Rage personal communication); lizards by an indeterminate taxon; snakes by one species of Aniliidae (Coniophis sp.) and three species of Boidae (J.C. Rage personal

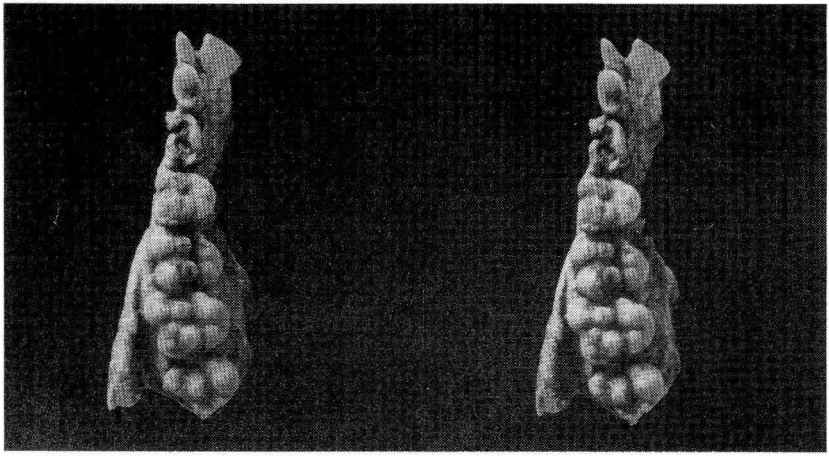
communication); turtles by ?Roxochelys cf. vilavilensis (F. de Broin personal communication) and a "Podocnemis" (senso lato), possibly Podocnemis" brasiliensis Staesche (1937) as emended by Price (1953) from the Bauru Formation of Brazil; crocodiles by at least three taxa--Sebecosuchia indeterminate, Dyrosauridae indeterminate, and another group indeterminate (E. Buffetaut personal communication); and birds by as yet unidentified bone fragments.

MAMMALS

The original goal of this search was attained with the discovery of mammals at Tiupampa, a find that represents the first mammal fauna of Late Cretaceous age known for Bolivia and the fourth for all of South America. All of the 21 specimens of partial jaws or teeth thus far recovered are from a level between 110 m and 140 m above the base of the El Molino Formation as shown in Figure 4. Seven taxa, five marsupial and two placental are identified (see Marshall, de Muizon, & Sige 1983b; de Muizon, Marshall, & Sige 1984).

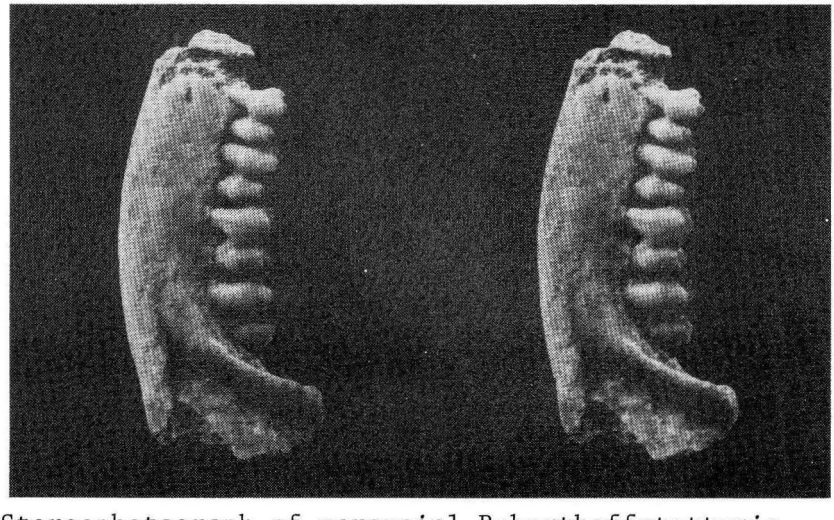
MARSUPIALS

All of the marsupial taxa are referable to the superfamily Didelphoidea. Only one of these was sufficiently well represented to warrant giving it a scientific name--Roberthoffstetteria nationalgeographica Marshall, de Muizon, and Sige (1983b)(see figure on next page). This species is known from eight specimens which collectively include P^1-M^4 and P_3-M_4. It is the most completely known Late Cretaceous mammal in all of South America. By didelphoid standards it is of medium size and has bunodont dental specializations. It compares favorably with Procaroloameghinia pricei Marshall 1982, from fissure fillings of middle Paleocene age in Brazil. Procaroloameghinia is closely related to Caroloameghinia from rocks of late Paleocene and early Eocene age in Argentina, and the



Stereophotograph of marsupial Roberthoffstetteria nationalgeographica from Tiupampa. Above: upper dentition (MNHN Vil 99, type) consisting of a right maxilla with P^1 and P^2 complete. Three times actual size.

Larry G. Marshall



Stereophotograph of marsupial Roberthoffstetteria nationalgeographica from Tiupampa. Above: lower dentition (MNHN Vil 100) consisting of a partial left mandible with M_1 to M_4 complete. Three times actual size.

taxa are placed in the family Didelphidae, subfamily Caroloameghiniinae. Because of morphological similarities in the lower dentitions of Procaroloameghinia (upper teeth of this taxon are unknown) and Roberthoffstetteria, the latter is tentatively placed in the didelphid subfamily Caroloameghiniinae. Roberthoffstetteria is of special importance because in its development of multiple cusps lingually on the upper molars it shows structural convergence with primitive members of the placental order Condylarthra of North America.

The largest didelphoid in the fauna is represented by a single specimen described as "indeterminate species A" by Marshall, de Muizon, and Sige (1983b: 743-744, Figure 2). It compares favorably in size and general structure with living species of Didelphis, while among known fossil taxa it compares most closely with Hondadelphys fieldsi Marshall 1976, from rocks of middle Miocene age in Colombia. Its size and structure suggest that this animal was carnivorous.

A third species is of medium size and is slightly smaller and more gracile than Roberthoffstetteria. It was described as "indeterminate species B" by Marshall de Muizon, and Sige (1983b: 744) and is represented only by a partial edentulous mandibular ramus. In size it compares favorably with Derorhynchus singularis de Paula Couto 1952, from the middle Paleocene age fissure fillings at Itaborai, Brazil.

The remaining two taxa are small by didelphoid standards. One is represented by possibly five specimens of Sternbergia itaboraiensis de Paulo Couto 1970, from Itaborai (identifications are based on additional specimens discussed and described by L.G. Marshall, in preparation, "Systematics of Itaboraian, middle Paleocene-age opossum-like marsupials from the limestone quarry at Sao Jose de Itaborai, Brazil"). These specimens are

described and figured by de Muizon, Marshall, & Sige (1984), and are referred to a "Sternbergia-like" taxon. The other small-sized taxon is represented by possibly two specimens which compare favorably with Gaylordia macrocynodonta de Paula Couto 1952, from Itaborai. These specimens are described and figured by de Muizon, Marshall, and Sige (1984), and are referred to as "Gaylordia-like" taxon. Two additional specimens, an isolated upper incisor and an isolated lower canine, cannot be referred with any degree of confidence to any of the above five taxa. However, because of their small size, more complete comparative material may prove them referable to either the "Sternbergia-like" or "Gaylordia-like" taxon.

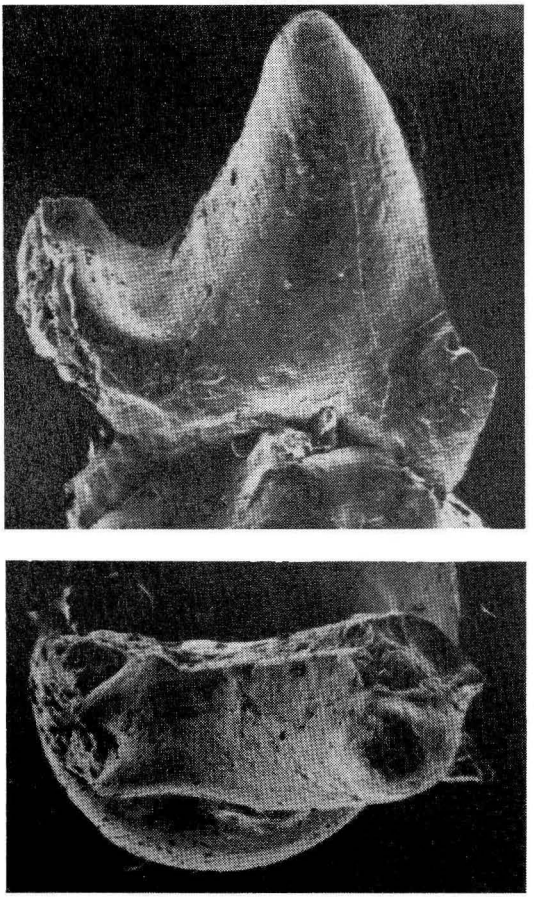
Thus, of the five didelphoid taxa identified from Tiupampa, three (Roberthoffstetteria, "Sternbergia-like," "Gaylordia-like") compare with taxa known from the middle Paleocene-age fissure fillings at Itaborai, Brazil. The other two taxa are too incompletely represented to allow meaningful comparisons with other taxa at this time.

PLACENTALS

Placentals are represented by two specimens in the Tiupampa local fauna. One is a broken upper molar that is securely referred to the order Notoungulata and compares favorably with early generalized representatives of that group, particularly members of the family Henricosborniidae. This record corroborates the existence of this group in the Late Cretaceous of South America; the first record being Perutherium altiplanense from the Laguna Umayo local fauna of the Vilquechico Formation of Peru (Marshall, de Muizon, & Sige 1983a).

The second placental, represented by a partial lower P_4 (see figure on page 12), compares favorably with Late Cretaceous members of the order

Proteutheria from Asia and North America (for example, see Kielan-Jaworowska et al. 1979). Of all known proteutherian taxa it compares best with species of Gypsonictops, and especially with material described and figured by Sahni (1972) from the Judith River Formation of Judith River Formation of Montana. This is the first record of a proteutherian in South America, and its presence dictates reconsideration of the geologic and biotic associations between North and South America in the Late Cretaceous.



Scanning electron photographs of MNHN 121, a partial isolated left molariform P_4, retaining lingual side (but missing tip) of protoconid, base of paraconid, all of metaconid, and lingual side of talonid of a proteutherian mammal from Tiupampa: top, lingual view; bottom, occlusal view. Thirty times actual size.

VERTEBRATE FAUNA FROM THE SANTA LUCIA FORMATION

Fossil vertebrates were also recovered from two localities of the Santa Lucia Formation, apparently of early Tertiary (Paleocene-Eocene) age. Included among these fossils are the first securely documented mammals of early Tertiary age in Bolivia. One locality is just south of the pueblo of Torotoro (Figure 1). The fossils recovered include representatives of lungfish, turtles, and crocodiles, and a broken base of an indeterminate mammal molar. These specimens were obtained by surface prospecting. The sediments of the Santa Lucia Formation at Torotoro are generally fine- to medium-grained red sands. The fossils are poorly preserved and the potential for screen washing of sediment or recovery of good specimens by surface prospecting appears bleak.

The other locality was designated Vela Pachita, near Vilca Puquio, about 57 km southeast of the pueblo Challapata. Specimens of fish (siluriforms and characiforms) and crocodile were collected by surface prospecting, and about 50 kg of rock matrix was collected by surface prospecting, and later screen washed at Montpellier. The washing and sorting of this sediment yielded an isolated upper P^4 of a notoungulate mammal, described by Sige et al. (1948). This tooth compares favorably with early generalized members of this group (Henricosborniidae, Oldfieldthomasiidae) (see Simpson 1948), and shows closest similarity with Camargomendesia (sensu Cifelli 1983) from the fissure fillings of middle Paleocene age in Brazil. This tooth is very well preserved and this locality has the demonstrated potential for yielding additional noteworthy specimens by screen-washing operations.

SUMMARY

This research resulted in the discovery of the first Late Cretaceous mammal fauna yet known in Bolivia and the fourth for all of South America, and the discovery of the first securely documented mammal fauna of early Tertiary (Paleocene-Eocene) age in Bolivia. These faunas provide unique and previously unavailable opportunities for understanding aspects of the biogeographic history and phylogenetic relationships of many South American vertebrate groups, particularly the mammals. For other aspects of this project see Marshall, de Muizon, & Sige 1983b; de Muizon, Gayet et al. 1983, 1984; de Muizon & Marshall in press; de Muizon, Marshall, & Sige 1984; Sige et al. 1984.

POSTSCRIPT

Subsequent to the completion of this paper, Marshall, de Muizon, and Gayet returned to Tiupampa for one week in early August 1984 (sponsored in part by another grant from the National Geographic Society). The results of prospecting and screen washing some 1.5 tons of the fossil-bearing sediment were spectacular: About 130 additional partial jaws and isolated teeth mammals were recovered. Some new groups that were not recovered during the first trip include two condylarths, a different kind of proteutherian, a pantodont or tillodont, and at least six new didelphoid marsupials. Also two mammal tooth fragments were recovered from the Pucapristis level at Villa Viscarra by screen washing of sediment. The authors will return to Tiupampa in May 1985 to collect additional fossils and to undertake a study of the magnetostratigraphy of the El Molino Formation.

This article appeared in the Spring 1985 National Geographic Research scientific journal. Reprinted by permission.

IT'S FOR THE BIRDS!

The following story is from the New York Times:

Authenticity of Bird Fossil is Challenged
by William J. Broad

London--A team of six scientists has charged that one of the world's most valuable fossils is a fake, touching off one of the bitterest rows in the history of the British Museum.

At the center of the dispute is a priceless speciment that has long been considered the earliest known bird, Archaeopteryx. The fossil, kept under lock and key at the British Museum of Natural History, is now being put through a battery of tests by museum scientists to prove its authenticity. Irate researchers have also launched a fusillade of charges and countercharges.

The controversy started when six scientists, including Sir Fred Hoyle, a British astronomer, asserted in a scholarly paper in March that the feather impressions of the museum's specimen had been fabricated in a 19th-century hoax.

"It's rubbish," Dr. Cyril A. Walker, a paleontologist at the museum, said of Sir Fred's contention. "Absolutely ludicrous," added Dr. Angela C. Milner, a senior scientist in the museum's department of fossil amphibians, reptiles and birds.

"Codswallop," echoed Dr. Alan J. Charig, a curator of the musuem.

Museum scientists say they might have ignored the charges except for the specter of an old scandal. In 1953, the skull of the Piltdown man was found to be fake after gracing museum cases for nearly half a century. Reverberations from that scandal still haunt the museum. Most recently, Sir Arthur Conan

Doyle, creator of master detective Sherlock Holmes, was named as a prime suspect in the unsolved case. Doyle is said to have planted the Piltdown bones to discredit British scientists, who had ridiculed his belief in spiritualism.

The museum has little to worry about in the current dispute, the world's leading authority on Archaeopteryx says. "I am mystified as to why the accusers put themselves out on a limb," the expert, Dr. John Ostrom of Yale University, said in an interview. "Maybe Sir Fred has been looking at the stars too long."

Archaeopteryx ("ancient wing") is one of the world's most famous fossils, having been hailed in the 19th century as proof of Darwin's theory of evolution. With the body and teeth of a small dinosaur and the feathered wings of a bird, the fossil was cited as a missing evolutionary link between reptiles and birds.

In 1861, just two years after the publication of Darwin's "The Origin of Species," the first specimen of Archaeopteryx was found in a German quarry where the limestone was some 150 million years old. The British Museum triumphantly added it to its collection in 1862. Ever since it has been considered one of the museum's most valuable possessions.

The fossil is literally priceless, although various accounts put its value at several million dollars. It is kept under strictest security in a century-old building that bristles with spires and gargoyles. The Archaeopteryx fossil on display to the public in London is a replica made of fiberglass.

Aspersions on the fossil were cast by Sir Fred and colleagues in The British Journal of Photography. Citing evidence from recent photos of the fossil, the authors, based mainly at University College in Cardiff, Wales, contended that the feather

impressions occurred on material that was much finer-grained than the underlying rock and that some of the impressions looked like "flattened blobs of chewing gum."

One of the authors, Dr. Chandra Wickramasinghe, an astrophysicist, has been quoted in a British newspaper as saying the purported hoax was carried out by someone who "made a paste of crushed limestone from the same period, smeared it around a genuine reptile fossil and then imprinted the feathers."

The six accusers argue that the fossil's slab and counterslab are not mirror images of each other. (The slabs were created by workers at the German quarry who split a sheet of rock in two and found Archaeopteryx inside.)

Defense of Fossil Planned

To defend the fossil, scientists at the museum say they are preparing a comprehensive paper that they will submit, with new photographs, to either Science a respected American scientific journal, or Nature, its British equivalent. The charges will be completely demolished, they say, with evidence from the chemical and other types of tests.

The fossil's authenticity is evident even without chemical tests, according to Dr. Walker. He said none of the arguments offered as proof of a hoax were threatening, noting that fossil specimens often have differences in the texture of their surfaces and that the slabs are not mirror images of each other because the fossil was not split exactly down the middle.

The clincher, Dr. Walker said, is that the accusers in their papers noted only two Archaeopteryx specimens (one found in 1861 and the other in 1877), when in fact five skeletons have been found at different sites over the course of more than a century.

The most recent specimen was identified in 1972 by Dr. Ostrom of Yale. Those who believe in the authenticity of the Archaeopteryx point to this specimen as especially telling evidence because it was originally uncovered in 1855, but it was misidentified as a pterodactyl, an extinct flying reptile without feathers. But close inspection by Dr. Ostrom revealed faint feather imprints that make it more likely to be an Archaeopteryx.

It was uncovered, Dr. Walker noted, six years before the purported hoax and four years before the publication of Darwin's theory.

In a recent article, the journal Nature dryly observed that if the accusers are to be believed, whoever carried out the hoax "must have been remarkably fleet of foot and very prescient."

Credentials Are Challenged

None of the accusers is a paleontologist, Dr. Walker said, adding that this might explain why some of their observations are off the mark.

As for alleged photographic evidence of fakery, Timothy W. Parmenter, a photographer at the British Museum, said none of the accusers' photographs showed anything new. He also noted that one of the photos in the original article had been printed upside down. "It's another nail in the coffin," he said.

Despite what they consider overwhelming evidence in their favor, museum scientists say they are going ahead with extensive tests in order to forestall further attacks. Their fear is that an extended flap over Archaeopteryx will be used by creationists in their continuing battle to try to discredit the theory of evolution.

A sample of the fossil has been removed for analysis of chemicals that might have been used in a forgery,

according to museum scientists. The whole specimen is also to be photographed in infrared light, which could help reveal materials that had been layered over the original rock.

Dr. Wickramasinghe, the official spokesman for the six accusers, said the case is far from closed and that the team had submitted another article to The British Journal of Photography. "It will document the worst of the horrors," he said.

The new evidence was historical in nature, he said, and reveals the fossil to have been radically altered in a suspicious manner since it was acquired by the British Museum. He added that although none of the accusers is a paleontologist, they were perfectly qualified to pass judgment on the authenticity of the fossil.

"All you need is a pair of eyes," Dr. Wickramasinghe said.

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VOTE FOR FLORIDA'S STATE FOSSIL

(See Page 20)

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NEWSLETTER POLICY: All news items and photographs related to paleontology are welcome. We are particularly interested in articles about FPS members. The deadline for each issue is the last week of the month before publication. The editors reserve the right not to publish submissions and to edit those which are used.

VOTE FOR FLORIDA'S STATE FOSSIL

Last year at the FPS annual meeting in Gainesville, the Board of Directors appointed a committee to recommend nominations for a State Fossil. This committee presently consists of Bruce J. MacFadden (Gainesville), Larry Lawson (Winter Park), and Phil Whisler (Venice). Since last year's meeting, we have been informally polling interested individuals, local chapters, etc. to obtain their ideas. Many people believe that the fossil should be either unique to Florida (not found elsewhere) and/or common in Florida fossil localities.

We would like you to vote for one of the choices on the next page to give us an idea of your preferences. If none of these is your choice, feel free to "write in" another fossil. We want your input on this matter and hope you will return the ballot which is on page 21 so you can remove it without disturbing the rest of the newsletter.

B A L L O T

VOTE FOR ONE (SIGNIFY WITH AN "X")

_____ Dugon (relative of Manatee)

_____ Great White Shark (Magalodon)

_____ Mastodon (gomphothere or "American", please circle)

_____ Mammoth (Mammut)

_____ Giant Ground Sloth (Eremotherium)

_____ Six-Horned Florida Antelope (Hexameryx)

_____ _____ ("write in")

_____

Please print name

_____

Signature Date

Please return before 1 October 1985 to:

Howard H. Converse, Jr.
Secretary-Treasurer, FPS
Florida State Museum
University of Florida
Gainesville, FL 32611

T H A N K Y O U!