

SOCIETY OF
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- Table of Contents -

Official Business	2
Committee Report	2
Committee Listings	3
Award Winners	15
Pre-meeting Symposia Guidelines	24
New Members	25
Address Changes	32
News From Members	52
Bulletin Board	96
Publications	97
Positions Available	102
Obituaries	102
Ethics Statement	104

- Official Business -

CHECK YOUR ADDRESS

In an attempt to comply with US Postal Service requirements, we would like for you to please check the address label on this *News Bulletin* and send in any changes or corrections to the Business Office (see inside front cover for address). In the transition from our former management firm to the Sherwood Group, errors may have been introduced into the address portion of the database and we need to make the necessary corrections. Thank you for your help!

DEVELOPMENT COMMITTEE REPORT

The Development Committee continues to develop the structure of a planned-giving program. The program was dealt a serious setback with the recent change in management firms in that much of the headway made by Pam D'Argo and Betsy Nicholls was lost in the shuffle. Nonetheless, a renewed effort is being made to get this program off the ground.

The SVP has received several significant donations since the last reporting period. Ying-Chien Chang of Athens, Ohio, donated \$2,000 to support collaborative USA-China vertebrate paleontological field research in China. Ms. Chang has agreed to continue support, at the rate of at least \$2,000 per year, with a will bequest for permanent future support. David B. Jones, a long-time member of the Society and regular attendee of the annual meetings, bequeathed \$16,720.90 to the Society. Finally, Malcolm C. McKenna and Susan K. Bell, co-authors of their recently published *Classification of Mammals above the Species Level*, have generously agreed to donate the royalties from the sale of

the book to the Society. The Society has received checks for \$3,237.67 from each of them.

The SVP is very much indebted to all of these individuals for their generous contributions to the Society. (David Krause)

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Richard Estes Award: Christian A. Sidor

Joseph T. Gregory Award: Michael O. Woodburne

I sincerely thank the Society for having presented me with the Joseph T. Gregory award at Snowbird. I am very happy and honored to have been of service to the Society, and can't think of a better model to try to emulate. Thanks very much, indeed, I was inducted into vertebrate paleontology, as it were, by George Rinker and Tom Oelrich of the University of Michigan Department of Anatomy when I was a high-school student in 1954. George and Tom were acquainted with (the late) Claude W. Hibbard of the Museum of Paleontology at Michigan, and had spent "time" with Hibbie in his fieldwork on Pliocene and Pleistocene faunas of southwestern Kansas and adjacent Oklahoma, and thought it would be good experience for me. They were right. With Hibbie, the complete naturalist, we learned all about the living flora and fauna of the Great Plains as well as screen washing and sorting tons of fossiliferous matrix at the Meade County State Park C.C.C. Camp. There was never a dull moment, and Hibbie was an enthusiastic observer and commentator on all things paleontological and neontological. Neontology was always interwoven with paleontology, and paleobiology (including paleoclimatology) was consistently couched in terms of its historical (stratigraphic) record. Hibbard had a holistic view of matters and it is not surprising that he encouraged me to publish my first article (in 1956) on a new record of a pygmy rattler from Meade County State Park, with the second (1959) being on the climatic significance of a Pliocene alligator from the Oklahoma Panhandle, and the third (1961) a combined stratigraphic and paleontological study of elements of the Rexroad Fauna (early Blancan, ca. 3 Ma) of the Meade County area.

My interest in combining stratigraphy, chronology, and paleobiology was further stimulated at the University of California, Berkeley, Museum of Paleontology, where I undertook my Ph.D. work under the supervision of R. A. Stirton in 1960. Stirt was another naturalist of the University of Kansas school. Almost from the beginning, I was immersed in stratigraphic and paleobiological studies as Stirt, Dick Tedford, and I sought to obtain, and then interpret both the phylogeny and paleobiology of the previously unknown late Tertiary marsupials and monotremes of Australia. I was in good company at Berkeley, with co-supervisors D. E. Savage, J. T. Gregory, Garniss H. Curtis, and W. B. N. Berry. Don Savage's noon "seminars" were legendary ("Here's the first question on your orals"). These "nooners" usually were crowded by the vertebrate paleontology graduate student population, Gid James, John Mawby, Dave Webb, John Rensberger, and Ev Lindsay, and discussions were vocal and wide ranging. If Don wasn't holding a "nooner", Stirt did, where we reviewed current literature on a weekly basis. Thus, both in and out of formal class work, we were exposed to, and encouraged to consider, a wide range of topics from fundamental stratigraphy and geochronology, to comparative anatomy (dissecting our own animals, and publishing on them - mine was a Collared Peccary [1968]), faunal dynamics, paleoclimatology and paleoecology

(proximal and distal communities, etc; guilds came later), as well as Matthew's vs. Darlington's zoogeography, and Simpson's Tempo and Mode, and Major Features...

Upon coming to Riverside in 1966, I benefitted from continued collaboration with Berkeley colleagues, and also formed new interactions with Mike Murphy and Pete Sadler, especially in the areas of bio- and chronostratigraphy and the completeness of stratigraphic sections. Their counsel and discussion are greatly appreciated. I came to Riverside to fill a vacancy left by Dick Tedford as he moved on the Department of Vertebrate Paleontology, American Museum of Natural History, in New York. In that we have shared a common interest in stratigraphy and paleontology of the Mojave Desert and of Australia, Dick and I have maintained a strong association ever since, which has moved into areas of mammal paleontology of Miocene faunas of the Great Plains. In this I was happy to join in work in association with Bruce MacFadden in the systematics of Old World hipparion horses, as well as in collaboration on magnetic stratigraphies of the Barstow Formation and other Miocene strata of the Mojave Desert. This geochronological work continues to benefit from collaboration with Carl C. Swisher, Berkeley Geochronology Center, work not restricted to California, but also extending to other places in the western interior of North America as well as to Germany (with Ray Bernor).

Also since 1970, several seasons' work in Australia and (since 1982) in Antarctica could not have been so successful without the help and collaboration of Judd Case, Mark Springer, Bill Clemens, and Mike Archer (Australia) and Judd, Dan Chaney, Jim Martin, and Pete Sadler (Antarctica). I always will be in debt to Bill Zinsmeister for having brought me to Antarctica in the first place, and to Bill Daily who helped find the first land mammal in that continent during the 1982 season. The foregoing acknowledgments would not be complete without incalculable appreciation for the help of my wife, Janice, who has been unflagging in her support in all things.

Honorary Membership: Nicholas Hotton III, J. Alan Holman, Peter Robinson, and James Madsen

J. Alan Holman

J. Alan Al Holman was born in Indianapolis, Indiana, in 1931. At age ten he became interested in herpetology. He graduated from Franklin College of Indiana in 1953, and completed a study (supervised by Stan Rhodes and Sherman Minton) on the distribution of the Indiana herpetofauna relative to glacial boundaries that led to a degree with distinction in biology. He served as a hospital corpsman in the usnr for two years (1953-1955) and received the MS degree (1957) and PhD degree (1961) from the University of Florida, Gainesville, under the direction of Pierce Brodkorb. Although his dissertation was in paleo-ornithology, he was encouraged to publish in paleoherpetology by both Brodkorb and Walter Auffenberg.

Holman's academic career consisted of appointments as Assistant Professor of Biology at Samford University (1961-1962), Associate Professor of Biology at Illinois State

University (1962–1967), and Curator of Vertebrate Paleontology at the Michigan State University Museum (1967–1997). He also had an academic appointment in Geology and Zoology at MSU and was promoted to Professor in 1970. Holman taught both Vertebrate Paleontology and Herpetology at MSU and was active in the EEB Program. He was chair of 13 completed Master's and six PhD degrees. He is presently Emeritus Professor of Geological Sciences and Emeritus Curator of Vertebrate Paleontology at Michigan State.

Holman's association with Hobart Smith in Illinois led to an appreciation of herpetology in the global sense, while his association with Claude Hibbard and Michael Voorhies while in Michigan led to a very active fieldwork program in vertebrate paleontology. Holman's research has mainly been in (1) the systematics of fossil snakes; (2) the evolutionary, zoogeographic, and paleoecological aspects of Tertiary and especially Pleistocene herpetofaunas; and (3) Pleistocene vertebrate faunas of the Great Lakes Basin. He has published over 200 papers (in refereed journals) and three books in these areas. A book on fossil snakes of North America is currently in press.

Holman has been active in public service at the MSU Museum and has authored and co-authored several booklets on Michigan vertebrate fossils and modern amphibians and reptiles as well as popular articles in natural resources and conservation magazines. Holman is still active in research at the MSU Museum. He is married to the former Margaret Bishop (an archaeologist at MSU) of Evanston, Illinois, and has three living sons and one stepson.

Bryan Patterson Award: Richard J. McCrea and Matthew C. Mihlbachler; Igor Danilov (Honorable Mention)

Richard J. McCrea

The first fossil I ever found was a piece of petrified wood in the gravel parking lot of the Donnan Community Center near my elementary school in Edmonton, Alberta. My family used to go on frequent hiking trips outside of the city and I would follow along railroad tracks looking for interesting bits of rock. I quickly built up quite a substantial rock and fossil collection which was lost or forgotten when we moved to Saskatchewan when I was ten years old.

I enjoyed being outdoors best and was not a willing student in public school. When I graduated I had no intention of going on into post-secondary education. However, encounters with corrupt employers and being at the wrong end of a loaded gun during a robbery soon motivated me to improve my situation through higher education. My long-time interest in the natural world led me to complete a degree in biology at the University of Saskatchewan, followed closely by an education degree. During my undergraduate studies I enrolled in an introductory geology course along with my fiancée M.L. and my sister Kari. A subsidized three-day field trip to the Royal Tyrrell Museum of Palaeontology, Dinosaur Provincial Park, and The Great Sandhills was offered to interested students. I enthusiastically collected invertebrate and plant fossils where permitted. I was impressed with the badlands and the extent of the bonebeds in Dinosaur

Provincial Park. Before I knew it I was hooked, and though I took a job teaching in the remote north upon convocation, I was already planning to begin graduate research in paleontology.

I chose to study Early Cretaceous dinosaur footprints at the University of Saskatchewan in the Department of Geological Sciences. Dinosaur footprints number in the thousands in the foothills near Grande Cache, Alberta, and provide a rare glimpse of a Mesozoic vertebrate community in action. Track research is the closest one can get to studying living dinosaurs without a time machine. I am fortunate to have the participation and encouragement of the triumvirate of Dr. Philip Currie, Dr. William Sarjeant, and Dr. Martin Lockley in my research efforts. I am proud to say that I am doing my best in the field of public education having co-founded the successful Dinosaur Camp for children in the summer of 1998. Receiving the Bryan Patterson Award provided a welcome boost to my research funds and to my morale. I am very grateful for the recognition.

Matthew C. Mihlbachler

For Matthew Mihlbachler, an unrelenting interest in "cavemen and dinosaurs" and all things extinct has persisted since before he can remember. Matt's first serious pursuit of VP took place during his undergraduate years at Southern Illinois University in Carbondale where his interests led him down two pathways. He traveled to Maboko Island in Kenya in the summer of 1996 with his mentors, Brenda Benefit and Monte McCrossin and worked on the paleoecology of the middle Miocene Maboko mammal community utilizing a multivariate approach to cenostratigraphic analysis. A manuscript is patiently awaiting review. Another mentor, Lee Newsom, got Matt involved in the analysis of the remains of mastodon digesta that had been discovered by Dave Webb and crew in the Aucilla River in the big bend region of Florida. Working on this mastodon digesta convinced him that he ought to pursue his Master's degree at the University of Florida under Dave Webb. Overcoming his midwestern (Illinois)-born fear of water, he learned to scuba dive and has now spent a number of field seasons diving in the Aucilla River searching for the first humans and the last megafauna to inhabit this region. Thanks to the Patterson Award Committee, Matt was able to convince Dave and his team of volunteers that they needed to head under the dark Aucilla waters one more time to collect more samples of mastodon digesta, both from 32,000- and 12,000-year-old deposits in the hopes of finding some clues regarding the demise of mastodons. Deciding that one project just isn't enough, Matt is hard at work on another project involving the rhinos, *Teleoceras* and *Aphelops*, from the Florida Miocene. While interpretations of the paleobiology and ecology of these animals has traditionally relied on the use of modern analogs, Matt is using multiple techniques, including isotopic analysis, population structure, and locomotor morphology, in an attempt to refine our understanding of these rhinos in ways that are independent of modern analogs. The most exciting aspect of this study involves a biomechanical analysis of hippos "galloping" underwater. Matt expects to finish his Master's degree requirements at the end of 1999. He is currently reading old monographs as well as newer literature, trying to decide what he should work on next and warns that e-mails, applications, proposals, and visits will soon disturb a number of paleontologists as Matt shops around for a school to work on his Ph.D.

Predoctoral Award: Adam Matthew Yates

I was born in Adelaide, South Australia, where I spent my childhood and undergraduate life. By the age of six I was already entranced by palaeontology. The culprit was a free dinosaur sticker in a packet of cornflakes. From then on I could not learn enough about dinosaurs and other fossils. Throughout my childhood I flitted from one area of the natural sciences to another, but had decided upon a career as a paleontologist in high school.

I spent all my school holidays doing volunteer work at the South Australian Museum with Neville Pledge and Ben McHenry. Ben was especially keen to foster my interest in invertebrate paleontology, and trying to steer me away from that □vertebrate rubbish.□ For a while he succeeded. I published a paper with him while I was an undergrad at Adelaide University on the first anomalocarid specimens from the Southern Hemisphere. I found these myself while collecting at a trilobite site on Kangaroo Island. The thrill of that discovery cemented my decision to continue the difficult path to a career as a professional paleontologist. For my honors project (1994), supervised by Dr. Richard Jenkins. I was given the task of sorting through an enormous collection of Cambrian small shelly fossils, collected by the late Dr. Brian Daily, and to establish a biostratigraphic scheme based on them.

For a change in direction I wanted to study some aspect of the evolutionary process in a group of organisms with a complex and challenging anatomy for my PhD. Moving to Melbourne in 1995 I embarked on a study of the small and potentially juvenile temnospondyl □amphibians□ from Australia. This broad topic, supervised by Dr. Anne Warren, allowed investigations into the phylogeny of the group and the role of heterochrony in their evolution, as well as revealing patterns of survivorship within temnospondyl lineages across the Permo-Triassic boundary. I am now investigating several postdoctoral options at the University of Queensland and Harvard University to continue studying Early Triassic vertebrates.

I would like to thank the Society for Vertebrate Palaeontology for the Predoctoral Award, without it finishing my PhD thesis would have been an horrendous task. I also thank my parents, the staff at the South Australian Museum, and my supervisors for sharing their knowledge, advice, and encouragement. Lastly I wish to thank my partner, Julie Hansen, for her unwavering support during the long and difficult write up of my PhD.

Alfred S. Romer Prize: Adam Summers

Romer-Simpson Medal: Albert E. Wood

When Lou Jacobs told me that I was to receive the Romer□Simpson Medal, I asked what remarks I should make, and he said (and I quote), □Make it short - very short!□

Thank you, Roger, for those kind and flattering words. Thank you also to the members of the Romer□Simpson Medal Committee for voting me the award. And thank you to all

my friends and associates who wrote supporting letters. I particularly value the award because Al Romer and George Simpson were two of my earliest long-continued close friends in the profession. Each of them took an action in my regard that profoundly affected the direction of my future research.

In the spring of my junior year in college, facing the prospect of having to write a senior thesis, I had begun to think of doing something on rodents, for reasons that now escape me. My older brother, Horace, asked W. D. Matthew, who knew more about North American Tertiary mammals than anyone else, for his reaction to the idea. Matthew encouraged me to go through with the idea, saying that he was confident that I could find a project on rodents suitable for a Ph.D. dissertation. **But**, I should not plan to make a career out of rodent paleontology, because, for reasons that were not clear to him, rodents did not seem to fossilize well, and hence rodent fossils were rare. Thus encouraged, the next year I wrote my senior thesis on rodents - their classification, osteology, odontology, and paleontology.

I began my graduate studies at Columbia in the fall of 1930, with W. K. Gregory as my thesis advisor. I met Simpson about as soon as I arrived at the American Museum, and Romer sometime during the year when he visited from Chicago.

G. C. Mook turned over to me a collection of rodents (two specimens) that he had made in the Deep River Miocene of Montana. One jaw turned out to be a new genus of heteromyid. Based on it, the three specimens of Tertiary heteromyids in the American Museum collections, a literature review of all the then-known fossils, and a description of the cheek teeth of living heteromyids, I published a 19-page paper in the fall of 1931, on the phylogeny of the heteromyids. Three years later, I completed my doctoral dissertation on exactly the same subject, but enough new fossils had been discovered or described in the meantime so that the resulting paper was about ten times as long when published in 1935.

In the spring of 1936, still looking for a job, I took a U.S. Civil Service exam for Assistant Geologist. This got me on the Civil Service list. The District Office of the Army Corps of Engineers in New York had been told to hire a geologist, and offered me a job. I was attached to the Binghamton, New York, area that was investigating a large number of flood-control projects. I worked there on damsite and glacial geology for 4-2/3 years. Then I had a major detour for another four years, seven months, and 17 days. When I returned to the Army Corps of Engineers, they didn't want me around, having found that they could get along without me, and I looked for a job someplace else. In March 1946, I wrote to Al Romer asking if he knew of any jobs teaching comparative anatomy. He quickly answered yes, but relax for a few days, as he got my letter just as he was leaving Cambridge for a brief trip, and he'd be in touch with me when he returned. I next got a letter from him saying that he'd been to Amherst for the funeral of the man who had been teaching comparative, and had recommended me for the job. I also heard from Harold Plough, the department chairman, setting up a date for an interview. I suspect that Al also recommended me to the President, since Al was a very influential

alumnus who kept very close relationships with the college, and would have seen the President at the funeral.

I went to Amherst on a Thursday for an interview. I met all the biology faculty and was taken to meet the President. After a very short time, it was decided that I would be offered a job, and that I would accept it. So I asked Plough when he wanted me to start work. He said, "I don't care. Either right away, or wait until Monday." I said "I'd wait until Monday. I'd never taught comparative before, so it was a hectic spring.

Simpson's *Classification of Mammals* appeared in October 1945. Up to this point, I had tried to avoid talking about any relationships among rodents that was beyond the scope of my immediate paper, but George urged me to consider the broader relationships; that someone should tackle these problems; and that I knew more about rodents than he did, so it was up to me. I then began a series of efforts to make sense of the overall classification of the order, beginning with a paper in 1947. My studies of heteromyids and geomyids had impressed me with how often two lines of rodents evolved exactly the same changes, often at slightly differing times, and that one could not take apparent identity of characters to mean phyletic identity, unless it could be proven. To put it in current terminology, I believed the principle of parsimony required the presumption that any given character state could have, and probably did, evolve independently two or more times. I have, to date, seen no reason to change this opinion.

In 1959 or 1960, when I was Secretary-Treasurer of the Society, the usual crop of nominees for membership in the Society was received, approved, and, upon receipt of the first year's dues, accepted, subject to election en bloc at the annual meeting. One of the members later sent me a letter stating that he thought the criteria for membership were not strict enough, and that he had just gotten his dog elected to membership, thus proving his thesis that any SOB could be elected to the Society.

As Secretary-Treasurer, I wrote back, saying that we depended on members following the published guidelines for membership (which at that time included an age of 21 years), and that his statement in the membership application that his friend was an adult, implying age 21, represented a fraudulent nomination and not a problem with the Society's membership rules, and that the membership of his friend was rescinded. But, if he would resubmit his friend's application when the friend arrived at his 21st birthday, the nomination would receive all due consideration. I have not heard from the nominator since.

Thank you, Lou, for letting me talk so long. Thank you again, Roger, the Romer-Simpson Committee, and all my friends.

Morris F. Skinner Prize: Allen D. McCrady

Allen Dwyer McCrady, born December 3, 1928, grew up in a suburb of Pittsburgh. Receiving his degree from Chicago in 1947, he entered Pitt Law in 1948, but his unit was

called up in 1950 and he served until 1952 in Korea. Returning to school and civilian life, he practiced law until 1975 in Pittsburgh.

As a student in Pittsburgh, Allen met John E. Guilday and assisted him in the initial excavation of the New Paris sinks. He revived his interest in paleontology in 1956 and began a double life. After business hours, on weekends, and on vacations, Allen collected for Guilday and Carnegie Museum, traveling as far as Florida, Tennessee, New York, and Spain, Canada, and the Dominican Republic. He was listed as a junior investigator in a series of NSF grants with Guilday, who was kind enough to grant him junior authorship of a number of seminal papers on the Late Pleistocene faunas of the eastern seaboard.

In 1975, Allen quit the law and served a volunteer apprenticeship at the Smithsonian's vertebrate lab under Arnie Lewis. Subsequently he was hired as a preparator for a series of grants designed to refurbish Carnegie's vertebrate collections. During this time Allen continued to collect Pleistocene fossils and to manage, with Harold Hamilton, the field laboratory at New Paris, Pennsylvania, as well as participating in digs in northern Pennsylvania, Montana, and New Mexico.

In 1986 Allen moved to Idaho and was hired as preparator for Bill Akersten and the Idaho Museum of Natural History, from which he retired in 1995.

Of all his work, he was proudest of noticing and collecting a single carrion beetle elytron in the blue clay surrounding the Newton Mammoth, thus leading to the study of a boreal insect fauna deposited at the margins of the last glacial advance.

**Student Poster Prize: Andrea R. Bair and Kenshu Shimada; Jason J. Head
(Honorable Mention)**

Kenshu Shimada

I was born in Japan, and my family soon moved to Ottawa, Canada, where, at age four, I had my first exposure to vertebrate paleontology (VP) at the National Arts Center (special dinosaur exhibit) and Canadian Museum of Nature. At age six, I moved back to Japan. I was eager to learn about natural history in general, but my love of VP did not blossom until I became 12. I began to actively participate with the Lake Nojiri Investigation Team, an organization specializing in a Pleistocene local biota in Nagano Prefecture, where I learned excavation, preparation, and collection management techniques over the years. At age 13, I discovered a large tooth of a Miocene white shark, *C. megalodon*, not far from Tokyo, and this was a life-turning event. I began to accumulate a sizable Cenozoic marine vertebrate collection by hunting fossils almost every weekend near Tokyo. I studied my own fossils (primarily Miocene-Pliocene shark teeth) throughout my high-school years. In my senior year, I received the Director-General for Science and Technology Award from the Japanese Student Science Contest sponsored by Yomiuri Newspaper Company for my research.

A huge obstacle struck me then; I failed to pass the university entrance examination. After wondering what to do with my life for several months, I decided to go to the U.S. to pursue my career in VP (but in terrestrial mammals!). Before I left Japan, I briefly served as a fossil preparator to Dr. Nori Inuzuka (University of Tokyo). In 1988, I moved to northern California (Humboldt State University) to re-learn English and to search for a good VP school. While there, I participated in developing VP exhibits for the Natural History Museum of the university until its grand opening. In 1989, I became a geology student at Fort Hays State University, Hays, Kansas (an excellent VP school). My advisors were Drs. Mike Nelson and Rick Zakrzewski, and I was interested in Cenozoic mammals of North America. However, my research subject changed drastically when I met Dr. Shelly Applegate at SVP □92 in Toronto, just before I earned my B.S. Following Shelly□s advice, I studied a large Cretaceous shark, *Cretoxyrhina mantelli*, from Kansas for my M.Sc. thesis at Fort Hays.

While I made a number of presentations and publications primarily on Cretaceous sharks of Kansas, since 1995, I have been a biology graduate student of Dr. Dave Bardack at the University of Illinois at Chicago. My soon-to-be-completed Ph.D. thesis is entitled □Dentitions of lamniform sharks: Homology, phylogeny, and paleontology.□ Based on numerous modern shark specimens, my aim of this study is to demonstrate the importance of comparative data applied to the study of shark phylogeny.

There are many individuals I would like to thank for encouraging me over the years. Those particularly influential during my childhood include Drs. M. Goto, H. Mishima, J. Sato, H. Sawamura, and T. Uyeno. For their continuous encouragement, I am deeply indebted to my high-school teachers and friends, members of the Lake Nojiri Investigation Team, Japanese amateur fossil collectors, Kansan and Chicagoan friends and professors, SVP colleagues, my parents and in-laws, and most importantly my wife, Kimmy. Thank you all!!

Jason J. Head

My interest in vertebrate paleontology began in William Thompson□s comparative anatomy class at Wayne State University in Detroit. I transferred to the University of Michigan, Ann Arbor, where I received a B.S. in biology. My paleontological education came primarily from the students, staff, and faculty of the U of M Museum of Paleontology, where I was fortunate enough to work as an assistant fossil preparator for three years. While at the museum, I was able to prepare and study fossil trionychid turtle skulls from the Miocene Siwalik Group of Pakistan. The turtles sparked my interest in Miocene reptiles, and I was offered the challenge of describing Siwalik herpetofaunas for my Ph.D. dissertation soon after my arrival at Southern Methodist University. Graduate study at SMU has provided me with incredible opportunities for research and fieldwork, both domestic and abroad. Thanks to my advisors and fellow graduate students, I am able to happily divide my time between continuing my M.S. research on □hadrosaurish□ ornithomimid dinosaurs, and studying the correlation between reptile faunal diversity and environmental change during the Miocene.

GUIDELINES FOR PROPOSING PRE-MEETING SYMPOSIA

Due to extraordinary demand, the SVP Program Committee has had to develop some guidelines for pre-meeting symposia (usually held on the Wednesday prior to the SVP meeting). In recent years, many more symposia have been proposed than can fit into the program, so we have developed the following procedures to ensure fairness, and also to maximize the scientific benefits of the pre-meeting symposia.

1. Symposium proposals should be submitted to the Chair of the Program Committee no later than November 15 of the year preceding the SVP meeting. This ensures that the Program Committee has adequate opportunity to review and rank all the proposals in time for the meeting planning schedule.
2. Proposals should include a detailed rationale as to why this topic is timely and important, and why it is of interest to a broad cross section of the SVP membership.
3. Proposals should include a complete list of committed participants, including their talk titles. This means that symposium organizers need to begin contacting their prospective speakers months before the proposal is submitted.

Once the proposals have been received, they will be reviewed and ranked by the SVP Program Committee, based on the following criteria:

- (1) The overall scientific importance of the topic;
- (2) The relevance of the topic to recent scientific debates;
- (3) The general interest of the topic to a wide spectrum of the SVP membership;
- (4) The amount of work done by the conveners prior to the submission of the proposal, and the evidence that the symposium will be a success;
- (5) Diversity of topics among those proposed, so that topics with overlapping content, or overlapping audiences, will not conflict with each other;
- (6) Similarity to previous symposia.

Once the Committee has reached its decision (typically in January), the symposium organizers will be contacted, and the symposium will be announced in the first meeting circular. This will give the organizers adequate time to get their contributors to submit abstracts before the early May abstract deadline.

Keep in mind the SVP's Primary Author Submission Policy - only **one** first-authored presentation (talk or poster) will be accepted. Thus, if one of your symposium participants is first author on a talk in your symposium, they cannot also be first author on another talk or poster at the meeting.

For further information or questions, please contact the Chair of the Program Committee.

Respectfully submitted, The 1999 SVP Program Committee: Donald R. Prothero, Chair; Michael Parrish, Past Chair; Kevin Padian; Mark Wilson; Ron Heinrich; Clare Flemming, Student Member.

□ **New Members** □

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- **News from Members** □

AUSTRALIA

La Trobe University, Melbourne

In the time since we last wrote focus in the lab has been changing from the Early Triassic Arcadia Formation to the Early Carboniferous Ducabrook Formation, just up the road in Queensland. The Ducabrook Formation is the only Carboniferous locality in Gondwana to produce tetrapods as yet and one of only a handful of Early Carboniferous tetrapod-bearing localities world wide. Over the last four field seasons the locality has produced some 60 tetrapod bones including complete interclavicle, cleithrum, tibia, neural arches, ilium, and incomplete sections of mandible and maxilla. Last season Bryan found a skull table which is still being prepared. While most of the postcranial looks reptiliomorph the cranial remains still do not, so I suspect we have some variant on the *Whatcheeria* theme. Of course for every tetrapod bone we uncover ten to 20 fish. Bryan Currie has completed an honors project on *Gyracanthides* from Mansfield (joint paper submitted to *JVP*), as a preparation to work on the Ducabrook gyracanthids to be completed by Sue Turner. Sue is also working on the microvertebrates and has submitted a preliminary manuscript with Anne Kemp on the lungfish (cf. *Ctenodus*), while Zerina Johanson, Sue, and Anne Warren have submitted another manuscript on the Ducabrook rhizodonts.

Caroline Northwood successfully completed her PhD on the paleoecology of the Arcadia Formation in 1997. She has been preparing some of the Ducabrook material but has now been awarded a postdoc working on an Early Triassic microvertebrate site in Poland with Susan Evans of University College, London.

Ross Damiani was awarded his PhD on capitosauroid temnospondyls in 1998 and has submitted all the work from his dissertation for publication. A number of papers are in press and should appear soon. Ross is off to the bpi in Johannesburg to begin a postdoc with Bruce Rubidge on the taxonomy and biostratigraphy of African capitosauroids.

Adam Yates has submitted his PhD dissertation (on lapilopsids, temnospondyl phylogeny, and heterochrony) and has taken over Caroline's job preparing Ducabrook material while he awaits the result. He has most of his dissertation work in press and several other papers submitted.

Bryan Currie did a great job with the Mansfield gyracanthids but had decided to follow a more lucrative and personally satisfying career in grape growing (and presumably wine making and tasting). Scott Handsakker successfully completed an honors project on rhytidosteids from the Arcadia Formation but has deserted vp for the computer world. Jillian Garvey is working on an archaeological honors project looking at the taphonomy of supposed owl-generated remains in cave deposits from Tasmania. (Anne Warren)

CANADA

Redpath Museum

Redpath Museum graduate students are busy as always. We welcome Bristol refugee Tamsin Rothery, who escaped the maddening world of ichthyosaur phylogeny (which was the subject of her M.Sc.) and is now taking on pleurosaurs - aquatic sphenodontids. Alison Murray's ongoing study of Tertiary cichlids from Tanzania is taking some

exciting turns, while she continues her work at the Canadian Museum of Nature in Ottawa, where she is coeditor (with Kathlyn Stewart) of a new Canadian Paleobiology newsletter, and coauthor (again with K. Stewart) of an upcoming paper on another African cichlid from the more recent deposits of Ethiopia. Jason Anderson awaits word from *Systematic Biology*, where his description of a new methodology for incorporation of incomplete taxa into phylogenetic analysis (also including a preliminary study of lepospondyl relationships) is in review. Preparation and casting of aistopods is complete, so its nothing but illustration of specimens this summer, in preparation for the final push for, dare one hope, graduation.

A paper by Bob Carroll and two summer students, Andrew Kuntz and Kimberley Albright, on the development of vertebrae in Paleozoic and modern amphibians has just been accepted by the new journal, *Evolution and Development*, and may appear in the first issue. Three undergraduates spent the past term working on: a newly discovered skeleton of the front half of an embolomere from Joggins (Lee Bar-Sagi), the vertebral development of primitive frogs and salamanders (Noah Philip), and limb development in branchiosaurs (Nick Gour). The latter two subjects will contribute to the general project of establishing the history of the modern amphibian orders.

Canadian Museum of Nature

Steve Cumbaa, Mike Caldwell, and Rob Holmes (Research Associate) have been working with model makers from Watson Sculptures and Models on a full-size, fleshed-out reconstruction of two male *Pteranodon longiceps*. The sculptures will grace the 85-foot-tall atrium of the Victoria Memorial Museum Building in downtown Ottawa, our main public display space. The pterosaurs soar on May 14, and will be a permanent exhibit. The two are in an interactive pose, one with an *Enchodus* clenched in its beak. Photos and a story about the sculptures, which were paid for by staff, volunteers, management, and Board of Trustees individual donations, can be found on the museum's web site: <www.nature.ca>. Chris Bennett and Kevin Padian helped the project along in its early stages by giving prompt, thoughtful, and expert advice, but of course with the usual disclaimers we absolve them of any responsibility for the end product. Anyway, as Kevin says, we have almost carte blanche, as it's hard to get pterosaur experts to agree on almost any aspect of pterosaur biology or behavior!

All of us working in research in paleobiology and with the fossil collection will be increasingly involved over the next two to three years with the development of a new fossil gallery. Kathy Stewart is leading the research component, and Kieran Shepherd is supervising the collections end of things. Mary Rose Saccu is the Project Manager. Formal team visits to other paleo galleries to date have included the Smithsonian Institution, the Academy of Natural Sciences (many thanks to Ted Daeschler), the American Museum of Natural History (gracias to John Maisey and Eugene Gaffney), and the Royal Tyrrell Museum of Palaeontology (thanks to Monty Reid and Andy Neuman). We hope to visit a few more institutions over the next year as we develop our final plans. In April, Monty Reid joined CMN as head of Exhibits. His experience in the same capacity at the Tyrrell will be helpful as we develop the new gallery.

Steve Cumbaa will join Tim Tokaryk of the Royal Saskatchewan Museum for a week of fieldwork in the marine Cretaceous of the Pasquia Hills in late June, and in late July through mid-August he and Richard Day will meet John Storer and Hans-Peter Schultze for fieldwork in Early-Middle Devonian deposits along the Snake River in Yukon Territory. Steve was recently appointed as Adjunct Research Professor in the Department of Earth Sciences, Carleton University, Ottawa. This is also a cross-appointment at the University of Ottawa through the Ottawa-Carleton Geosciences Centre. His most recent science book for kids, *Megalodon*, co-authored with Susan Hughes, was published just before Christmas by Somerville House, and is distributed by Putnam-Penguin in the U.S. Steve got a lot of information and advice from colleagues working on fossil sharks, all of whom (he hopes!) are thanked in the micro-printed acknowledgements at the front of the book.

Mike Caldwell has just returned from New Zealand where he was collecting Late Cretaceous mosasaurs with Gorden Bell, Jr., Rob Holmes, Patti Bell, Joan Wiffen, and Joe McKee. On the South Island, at Hector's classic 1870s vintage locality, the team found a very complete skull of the South Pacific tylosaurine mosasaur, *Taniwhasaurus oweni*. While the collecting went better than expected, another important coup was the opportunity to examine previously collected specimens in Wellington and Christchurch. The end-result of this work will be reported to the National Geographic Research Grants Committee (the funding agent for the fieldwork), and at the SVP meeting in Denver this fall.

Mike is also excitedly continuing his work on Cretaceous snakes. Last fall he spent the month of October in Neuquen, Argentina, conducting sedimentological and ichnological studies of Upper Cretaceous rocks that contain the remains of the snake *Dinilysia*. The project is continuing with impending visits from Mike Lee (University of Queensland), and from Adriana Albino (Universidad de Mar del Plata). Mike located six new skulls, two of which are at CMN, and two more of which will be transported to CMN when Albino visits just before the SVP Meeting.

In August Mike will be co-leading a field school for the Earth Sciences Department at Carleton University, Ottawa, where he is now Adjunct Research Professor. This year's trip will be to southern Germany and will begin at the Messel Pit near Darmstadt and ending at Eichstatt in the Solnhofen Plattenkalke. After one year at CMN, Mike seems to be settling into the role and routine of museum paleontologist. (Steve Cumbaa)

Royal Ontario Museum

Hans Sues has recently completed a monograph on the skeleton of *Hesperosuchus* with Jim Clark and Dave Berman. He continues work on various manuscripts dealing with Triassic tetrapods from the Newark Supergroup. Hans is also working with Dino Frey and Dave Martill on a detailed description of the holotype of *Irritator challengeri*, the most complete skull of a spinosaurid theropod known to date. The specimen will provide many new data on the cranial structure of these peculiar predatory dinosaurs.

Chris McGowan has been busily writing books. After the success of his *Make Your Own Dinosaur Out of Chicken Bones - Foolproof Instructions for Budding Paleontologists* (published by Harper Perennial), he has now written *T. rex to Go: Build Your Own from Chicken Bones* (same publisher). Also, through Cambridge University Press, he has published *A Practical Guide to Vertebrate Mechanics*. In the works (but not done yet!) is Part 8 of the *Handbuch der Paläoherpetologie* on Ichthyopterygia, with Ryosuke Motani.

Kevin Seymour successfully defend his Ph.D. thesis *Taxonomy, Morphology, Paleontology and Phylogeny of the South American Small Cats* in January. Mindy Myers has been working with Kevin on the analysis of the Little Jaws site from the Holocene of Florida. Kevin will continue excavation of an Ontario early Holocene cave site this summer. (Hans Sues and Kevin Seymour)

FRANCE

Université Paris VII, Département des Sciences de la Terre

En 1998, Jean Gaudant a poursuivi son exploration des gisements de poissons cénozoïques européens. Au printemps, il a réalisé des fouilles dans un nouveau gisement oligocène qui renferme des individus juvéniles de poissons appartenant à la faune classique d'Aix-en-Provence. Il pense utiliser ce matériel pour étudier la croissance de ces espèces.

Jean a également récolté aux environs de Wiesbaden (Allemagne), en collaboration avec Bettina Reichenbacher (Karlsruhe) et Thomas Keller (Wiesbaden), un nouveau matériel d'Atherinidae portant des otolithes préservées in situ.

À l'automne, Jean s'est rendu à Chypre pour travailler sur un nouveau site fossilifère du Miocène moyen découvert par Mike Barker et David Martill (Portsmouth). Une visite à Portsmouth lui a ensuite permis de jeter les bases d'une étude en collaboration.

Enfin, au cours d'un séjour à Prague, Jean a complété ses observations sur les Cyprinodontidae miocènes de Bohême.

Plusieurs nouveaux manuscrits ont également été achevés en 1998. L'un, en collaboration avec Bettina Reichenbacher (Karlsruhe), est consacré à des squelettes d'*Enoplophthalmus* (Osmeridae) portant des otolithes in situ, découverts dans le Miocène inférieur du bassin de Mayence. Un autre, en collaboration avec une palynologue, Carla Cavagnetto (Montpellier), a permis d'établir l'âge paléocène du gisement souterrain de Boltyska (Ukraine). Jean a également achevé une étude sur les Percoidei cénozoïques des eaux douces et saumâtres d'Europe. Enfin, pour se distraire, il a écrit un long article sur la querelle qui opposa trois abbés italiens, à la fin du XVIII^e siècle, à propos des célèbres poissons du Monte Bolca, près de Vérone. (Jean Gaudant)

FRANCE

Musée des Dinosaurés, Espéraza

The paleontological team of the Musée des Dinosaurés has grown in 1998 with the arrival of Yves Laurent and Sylvain Duffaud. The other important point in 1998 was the publication of the first issue of *Oryctos*, a new international journal of vertebrate paleontology published by the museum (see Publications). We are currently looking for both subscribers and authors for the next volumes (and also for exchanges with other publications).

Eric Buffetaut and Haiyan Tong are still working from home in Paris and all correspondence to them should be sent to their Paris address. Eric's field activity in Thailand (partly supported by the Jurassic Foundation), with Varavudh Suteethorn's group at the Thai Geological Survey, has resulted in several promising finds. What seems to be a Late Triassic sauropod has been found by Varavudh and colleagues in the Nam Phong Formation of northeastern Thailand. The Late Jurassic Phu Kradung Formation is yielding more and more vertebrates, including microremains (a washing and screening program has been launched by Gilles Cuny, from the University of Bristol, who joined Eric in Thailand during the 1998 and 1999 visits). Especially worth mentioning is the discovery of skull bones of the Early Cretaceous sauropod *Phuwiangosaurus* which suggest close relationships with *Nemegtosaurus* and *Quaesitosaurus*, from the Upper Cretaceous of Mongolia. As the postcranial skeleton of *Phuwiangosaurus* is well represented (whereas it is unknown in the Mongolian nemegtosaurids), this will lead to a much better understanding of the osteology and affinities of nemegtosaurids. In addition, Eric was able to visit Prof. Pang Qiqing at Shijiazhuang in northern China, to examine the Late Cretaceous sauropod skeleton recently found in Shanxi, which seems to be very similar to *Phuwiangosaurus*. As a result, a clearer pattern of sauropod evolution in the Cretaceous of Asia seems to be emerging. Finally, the Aptian/Albian Khok Kruat Formation has yielded additional dinosaur remains, including bones and teeth of iguanodontids.

On the French front, Eric has described a new genus and species (*Normannognathus wellnhoferi*) of crested pterosaur, on the basis of jaws found by amateur paleontologists in the Kimmeridgian of Normandy (*Geological Magazine*, 1998). A large part of his French activities has been devoted to the Late Cretaceous localities at Cruzy in southern France, with several field campaigns conducted there with the efficient help of the local museum and paleontological association. A preliminary faunal list has appeared in the *Comptes Rendus de l'Académie des Sciences de Paris* (1999), and a description of the enantiornithine bones from that site has been published in 1998 in the first issue of *Oryctos*. Birds appear to be more abundant than expected in the Upper Cretaceous of France, to judge from the recent discovery of a *Vorona*-like tibiotarsus, found at Fox Amphoux in Provence by Patrick and Annie Mechin, and currently being studied by Eric. He is also working on Tertiary birds: a well-preserved tibiotarsus found in the Lower Eocene of Saint-Papoul (southern France) by H. P. Labarrere has given him the opportunity to reassess the relationships between the giant birds *Gastornis* and *Diatryma*, and it is becoming more and more obvious that they are congeneric.

In 1998 and 1999, Eric visited Tunisia several times, once with Mike Benton (Bristol) and Dave Martill (Portsmouth), and twice as a guest of the Tunisian Geological Survey. Together with Mohamed Ouaja, from the Survey, Eric visited a number of sites in the Lower Cretaceous of the Tataouine region of southern Tunisia. Most of them are bonebeds containing abundant remains of fishes, turtles, crocodiles and dinosaurs. Besides teeth of *Spinosaurus* and *Carcharodontosaurus*, iguanodontid teeth turned out to be abundant, and a paper on the stratigraphic distribution of iguanodontids in Africa is being prepared with Mohamed Ouaja, as well as a description of the first plesiosaur from the Lower Cretaceous of Tunisia. A book on southern Tunisia during the Age of Dinosaurs, intended for the general public, is also planned.

Eric has also become interested in a rather unusual kind of fossil reptiles, i.e., bones of Mesozoic reptiles dredged up from the bottom of the North Sea by trawlers. The available material, in Dutch (Post) and Belgian (de Wavrin) private collections, consists of an ornithopod vertebra and sauropterygian bones. They were in all likelihood brought to the North Sea area by glacial action, and tracing their possible origin (presumably in Britain) is proving difficult.

Lionel Cavin is going on with his work on the Cretaceous fish faunas of Goulmima and Daoura in Morocco. He is also busy with nonmarine fishes from the Upper Cretaceous of southern France collected by the Musée des Dinosaures. During the summer of 1998, he took part in an expedition to Bolivia led by Christian Meyer (Basel), to study and cast Late Cretaceous dinosaur footprints.

Sylvain Duffaud has partly moved from the Muséum National d'Histoire Naturelle to the Musée des Dinosaures, and now spends most of his time in Espéraza. He is going on with his work on European lissamphibians, and recently had the opportunity, thanks to Belgian colleagues, to study the batrachofauna of Dormaal, a famous Palaeocene/Eocene locality. A paper on "La Neuve", an older (Late Cretaceous) but very promising new microvertebrate locality in southern France is in progress. Finally, research on some Neogene African frogs has been initiated with the help of Brigitte Senut and Martin Pickford. Apart from his herpetological occupations, Sylvain will be busy during the next couple of years with the design and displays of the new museum in Espéraza.

Yves Laurent is still working on his thesis on Late Maastrichtian European continental faunas, to be defended at the University of Toulouse. In 1998 Yves discovered several new Late Maastrichtian localities in southwestern France; washing and screening the sediments has yielded microvertebrate remains (fishes and hadrosaurs). Fieldwork is planned for spring 1999. A collaboration with Michel Bilotte (University of Toulouse) has been started to correlate the uppermost Cretaceous fossiliferous localities of southern France using sequence stratigraphy. Yves currently has a note in press (with Lionel Cavin and Michel Bilotte) on the first important Late Maastrichtian vertebrate locality in western Europe (Lestailats site, Marnes d'Auzas Formation). Yves spent, as usual, much time in the field. He coordinated (with A. and J. Le Loeuff) the excavations of Bellevue at Campagne-sur-Aude in July and August 1998: this site is still yielding a very rich fauna with titanosaurs and ornithopods. In the Paleocene of southwestern France, he

is working on a new locality yielding interesting fishes and reptiles (to be studied with Lionel Cavin and Haiyan Tong). Yves also found very interesting remains of turtles, crocodiles, and large mammals in the Lower Eocene of the Aude region of southern France (a pleurodiran turtle from that site has been described by Haiyan Tong in the first issue of *Oryctos*). More extensive excavations at that site are planned for 1999.

Jean Le Loeuff spent a lot of time this year editing the first volume of *Oryctos*. Administrative tasks were also time consuming but should lead next year to the creation of a much larger and entirely new Dinosaur Museum in Espéraza, thanks to funds from the European Union and the French government. Fieldwork at the Late Cretaceous Bellevue locality, as usual, yielded more *Ampelosaurus* material including a new skull. Joint work with Martin Lockley and Christian Meyer led to the description of the earliest thyreophoran tracks from the Liassic of France (*Comptes-rendus de l'Académie des Sciences de Paris*, 1999). Jean also described (with Eric Buffetaut) a new dromaeosaurid from the Late Cretaceous of southern France, *Variraptor mechinorum* in the first issue of *Oryctos*. In June, Jean defended at the University of Toulouse a habilitation thesis on the subject of Late Mesozoic paleobiogeography. He is now preparing the publication of this work. Another piece of work in progress is the osteology of the titanosaur *Ampelosaurus atacis*. In 1999, Jean joined the Thai-French dinosaur research team led by Varavudh Suteethorn and Eric Buffetaut to map some dinosaur tracksites in northeastern Thailand (Phra Wihan Formation, Early Cretaceous). This led to the discovery of the first sauropod tracks from Thailand.

Marie Pincemaille is now teaching at a high school near Paris and she is very busy with this new activity. However, she is going on with her doctoral thesis on *Rhabdodon*. Marie is completing the description of the abundant material of *Rhabdodon* housed at the Musée des Dinosaures, and the redescription of the type material of *R. priscus* in Marseilles. She has also started working on an important collection of *Rhabdodon* remains (including two braincases) from Cruzy.

Haiyan Tong is going on with her work on fossil turtles. Her description of the new pleurodiran taxon *Papoulemys laurenti*, from the Lower Eocene of France, has appeared in the first issue of *Oryctos*. Together with Gene Gaffney and Eric Buffetaut, she described another new pleurodiran from the Upper Cretaceous of France as *Foxemys mechinorum* (*American Museum Novitates*, 1998). Haiyan is especially busy with turtles from the Late Cretaceous to Eocene phosphates of Morocco, working with Gene Gaffney on the pleurodires, with Ren Hirayama on the chelonioidea, and with Peter Meylan on the trionychids. In January 1999, she went to Morocco to try to check the stratigraphic provenance of several specimens obtained from fossil dealers, and met with some success, although several problems remain. Haiyan also joined Eric on one of his trips to Tunisia, and is now working on a well-preserved dermochelyid skull from the Eocene phosphates of Tunisia kept at the Geological Survey in Tunis. Haiyan and Eric have also been working with Herbert Thomas (Collège de France, Paris) on mysterious scutes found by French geologists in probably Paleocene beds in Saudi Arabia, which turned out to be ossicles of a new taxon of dermochelyid turtle, to be described soon. (Eric Buffetaut and Jean Le Loeuff)

GERMANY

Spezielle Zoologie, Universität Tübingen

Our Department of Systematic Zoology (Spezielle Zoologie) is mainly occupied with various aspects of the evolutionary biology of chordates. Our methodological approach is comparative ontogeny in order to procure new data and to better understand the active role of ontogenetic stages for phylogenetic transformation. Ontogeny comprises complete life histories including adults, of course. Our technical approach is histological serial sectioning, and we concentrate on perinatal, juvenile stages. As morphologists, we are natural allies of paleontologists, and indeed some of our staff members have also worked with fossils. Our serial sections of juvenile and adult vertebrates provide a useful basis of reference for paleontologists working with ct-scanning and peel techniques (Wolfgang Maier).

The people and some main projects are the following:

- Craniogenesis and phylogeny of the Gliridae (Patricia Beck, PhD project)
- Craniogenesis of *Latimeria chalumnae* (Peter Bernstein, PhD project)
- Origin of the mammalian life history - mainly of perinatal stages; morphology of the ethmoidal and otical region of late therapsids and of basal mammals; anatomy of the ethmoidal region of Primates; methodological aspects of the relationship between ontogeny and phylogeny (Wolfgang Maier)
- Comparative craniogenesis of murid and cricetid rodents (Irina Ruf, PhD project)
- Mesoderm differentiation in larval stages of *Branchiostoma* (Thomas Stach, PhD project)
- Locomotory apparatus of Cyclostomes (Felix Vogel, PhD project) (Maier)

On a one-year visit in our department is Robert Asher from the doctoral program in anthropological sciences at suny Stony Brook. Robert is spending part of his graduate career here in Tübingen thanks to the sponsorship of Prof. Maier, and grants from the daad and nsf. The focus of his dissertation is the systematics of the Tenrecidae (Mammalia, Lipotyphla). He is using the mammalian histological collection in our department to document some heretofore unknown aspects of their cranial anatomy. Ultimately, these data will be combined with an osteological dataset to assess phylogenetic relations among living and extinct insectivoran-grade mammals. Look for results from the preliminary, osteological dataset in an upcoming issue of the journal *Cladistics*. Also, a paper by Robert and David Krause (Stony Brook) on the first pre-Recent record of true frogs from Madagascar came out in the December 1998 issue of *JVP* (Asher).

Sven Gemballa is an assistant professor in our department. His and his students' research deals with the locomotory apparatus of *Branchiostoma*, sharks, actinopterygians, and lower sarcopterygians (including urodelans). His main interest is the how bending moments in fish are generated and drive the undulatory waves down the body observed during swimming. For that purpose he developed techniques (modified clearing and staining, microdissections, sem, polarized-light microscopy, and dic-microscopy) for studying myoseptal architecture and the spatial arrangement of muscle fibers. These techniques revealed tendinous structures within myosepta that are able to transmit muscular forces to the backbone. The technique led to a new understanding of the intermuscular bones and threw light on an old problem of homology of these bones in acanthopterygian fishes. A recent paper deals with a problem of homology of intermuscular bones (Gemballa and R. Britz, 1998, Homology of intermuscular bones in acanthomorph fishes. *American Museum Novitates*, 3241:1-25). Another paper is a review about the field of research outlined above (Gemballa, 1998, Myoseptenarchitektur und Rumpfmuskulatur der Actinopterygii - Ein vergleichend - Anatomischer Ansatz zum Verstaendnis der undulatorischen Lokomotion (Myoseptal architecture and trunk musculature of actinopterygian fishes - A functional analysis of undulatory locomotion. *Verh. Ges. Ichthyol.*, 1:29-58). For an overview of the current projects and the persons involved as well as recent publications visit our homepage (<http://www.uni-tuebingen.de/Zoologie/gemballa.html>). (Gemballa).

Marcelo Sánchez-Villagra, also assistant professor, moved to our department in the fall of 1988, after completing his doctoral dissertation at Duke University under the supervision of Rich Kay and Kathleen Smith. The thesis includes chapters on comparative cranial anatomy of marsupials and on systematics of argyrolagids. He is currently finishing manuscripts concerning the vomeronasal complex in marsupials, an analysis to test the monophyly of Paucituberculata, a description of a new paleothentid skull (with R. Kay and Pancho Goin), and a multi-authored contribution on a new Miocene near-shore marine fauna from northwestern Venezuela. Preliminary work on the taxonomy of pelomedusid turtles from the early Oligocene of Egypt led to a current collaboration with Gene Gaffney and Elwyn Simons on the subject. Marcelo, Kay, and F. Anaya recently submitted a manuscript on the cranial anatomy of a Miocene argyrolagid from Bolivia. A recent publication compares homoplasy in different regions of the mammalian skeleton (co-authored with Blythe Williams, *Journal of Mammalian Evolution*, 5:113-126). Most current projects concern marsupial craniology, some in collaboration with Maier and Asher (Sánchez)

Two other assistant professors are Ralf Britz and Erich Weber, the latter also associated with our Zoologische Schausammlung. Erich's research interest concerns bird systematics, based on comparative and functional anatomy. He is currently working on the phylogenetic relationships of Galliformes and *Anseres*. Ralf Britz and Matthias Hoffman, both ichthyologists, will report on their work in the near future. (Marcelo Sánchez-Villagra)

INDIA

Geological Studies Unit, Indian Statistical Institute

Research in vertebrate palaeontology in the Geological Studies Unit of ISI is going on in spite of its dwindling number of workers. Tapan Roy Chowdhury is still actively involved with our projects and joins our field trips in Central Indian Satpura basin. Sohan L. Jain's absence is strongly felt though he constantly gives us moral support and advice from his Lucknow residence. His paper jointly with S. Bandyopadhyay titled "New titanosaurid (Dinosauria: Sauropoda) from the Late Cretaceous Central India" has finally come out in the *Journal of Vertebrate Paleontology* (17[1], 1997).

Saswati Bandyopadhyay with Dhurjati P. Sengupta and Sanghamitra Ray, has made a couple of long field trips to the Satpura Basin. A new Middle Triassic faunal assemblage comprising dipnoans, capitosaurids, brachyopids, trematosaurids, dicynodonts, and rhynchosaurs has been recovered from the Denwa Formation. A short report was presented at the Tenth International Gondwana Symposium held at Cape Town last year and the paper will appear in the *Journal of African Earth Sciences* in the middle of 1999. Saswati has submitted a review paper titled "Gondwana vertebrates of India" which will come out in "Gondwanaland Assembly: Current Issues and Problems" edited by Ashok Sahni.

Dhurjati has published a paper, "New capitosaurid amphibians from the Middle Triassic Denwa Formation of Satpura Gondwanas, Central India," in *Alcheringa*, 22 (1998). A comprehensive review of Indian metoposaurid amphibians based on new excellent skulls and postcranial bones is in press already. He is also working on the brachyopid skull and lower jaw collected from the Denwa Formation of Satpura basin.

Sanghamitra submitted her Ph.D. thesis on "Endothiodont dicynodonts from the Lower Gondwanas of Pranhita-Godavari valley, Deccan, India" in late 1997. The results are expected very soon. Two of her papers have already come out: "Evolution of herbivorous feeding system in land vertebrates" (jointly with T. Roy Chowdhury) published in *National Botanical Society*, 49 (1997); "Some contributions to the Lower Gondwana stratigraphy of Pranhita-Godavari valley, Deccan, India" published in the *Geological Society of India*, 50 (1997). Sanghamitra attended the Tenth International Gondwana Symposium on Event Stratigraphy held at the University of Cape Town and presented a paper on "A Permian vertebrate fauna from India" which is due to appear soon in the *Journal of African Earth Sciences*. A poster on "Endothiodonts from India" was also presented by her. Sanghamitra is thankful to M. A. Cluver and A. Chinsamy who made it possible for her to visit and study the synapsid reptile collections of the South African Museum. She has recently submitted a paper on new endothiodonts from India and another on new Indian Permian forms is in its final shape. She has also worked on the stratigraphy and palaeoclimate of the Lower Gondwanas of Satpura basin. An abstract titled "Decline of atmospheric CO₂-level evidence from the Indian Phanerozoic palaeosols" has come out in the abstract volume of International Conference on Isotopes in the Solar System, Physical Research Laboratory, Ahmedabad. Another paper on the Lower Gondwana fluvial succession of the PENCH-KANHAN valley, Satpura Basin, is in the final stage of preparation.

Dhiraj K. Rudra, in collaboration with Sankar Chatterjee of Texas Tech University, made a field trip to the Kallamedu Formation, a Maastrichtian horizon in South India. They have uncovered various Maastrichtian reptiles including crocodylian, cryptodire, and some other forms.

Mike Morales of the Museum of Northern Arizona (presently of Emporia State University) has visited the Unit and talked on Mesozoic vertebrates of northwestern America. Larry Witmer of Ohio State University and Scott D. Sampson of New York College of Osteopathic Medicine came here to study the dinosaur collection of the gsu. Scott gave a talk on □Madagascar□s Cretaceous Castaways. □ Fernando E. Novas of the Natural History Museum of Argentina came to examine the theropod collections and gave a talk on □Dinosaurs of Argentina. □ David Gower of the University of Bristol visited us last year to study the Triassic archosaur collections. (Saswati Bandyopadhyay)

UNITED KINGDOM

University of Cambridge, Sedgwick Museum, Department of Earth Sciences

Emily Rayfield is in the second year of her PhD. She is focusing on creating finite element models of theropod dinosaurs and has recently completed some work modelling two-dimensional sections of *Tyrannosaurus rex*, *Allosaurus fragilis*, and *Coelophysis bauri*. This work has thrown up some interesting hypotheses about the mechanical behavior of theropod skulls. She has begun creating three-dimensional models to develop these hypotheses and investigate other aspects of mechanical behavior.

Paul Barrett has had a busy year. Back in December 1998 he secured a new job as Lecturer in Animal Diversity in the Zoology Department at Oxford University which he begins in September 1999. Paul has been in Cambridge for his entire student and postdoctoral career and feels that it□s about time he went to learn what life is like in what is euphemistically known as □the other place.□ Paul is currently writing several manuscripts on things dinosaurian: a review of thyreophoran feeding mechanisms, a redescription of earliest Cretaceous ornithischians from England (with Dave Norman), and a critique of plant□dinosaur coevolution (with Kathy Willis). Various papers on ankylosaurs (with Xabier Pereda-Suberbiola and others), sauropods (with Paul Upchurch), and other topics have been published in the last year, or are in press. Collaborative work continues with Paul Upchurch (on sauropodomorphs), and Gillian King (on amniote jaws). A collaborative venture with the National Science Museum, Tokyo, and University College, London, on the dinosaurs of the Tetori Group, is planned in the near future.

Paul Upchurch has recently been awarded a Natural Environment Research Council postdoctoral fellowship which will allow him to tackle a project entitled □Testing biogeographic and palaeogeographic hypotheses using phylogenetic data.□ This will start in October 1999, so he□s currently busy with various projects relating to sauropod dinosaurs. Papers with John Martin on *Cetiosaurus*, plus the creation of an even bigger sauropodomorph data matrix, represent his major concerns at the time of writing.

David Norman (when not tied up with being Museum Director) is juggling a number of significant projects. He is rounding off work on Asian ornithomimid dinosaurs that has been coming out as a numbered series with two final papers: (5) on Rozhdestvensky's enigmatic Chinese genus *Probactrosaurus*, and (6) on new hadrosaurian material from southern Mongolia. In addition to that he has completed a large number of drawings intended for the long-awaited description of the skull and relationships of *Scelidosaurus*; this is to be followed in turn by a joint contribution (with the late Alan Charig) on the postcranial anatomy - Dave has already completed the description of the juvenile skeleton that was beautifully prepared by Arthur Rixon. In addition there is the 'small matter' of the description of the cranial anatomy of *Heterodontosaurus* in collaboration with Fuzz Crompton (and the late Alan Charig) the material of which is currently on loan in Cambridge. A number of other projects are bubbling away at present, mainly relating to ornithomimids of one sort or another (several with Dave Weishampel), as well as a cup book.

It has been very pleasing to see former students 'fledging', what with Paul 'B' picking up his post in Oxford, and Paul 'U' getting the recognition he deserves through his research fellowship. Of Dave's other students Alex Burton was awarded a PhD for his work on the taphonomy of the Wealden, and Ian Jenkins has just defended his PhD on the craniology of Permian synapsids. In addition Laura Gerlach (formerly Canning) has at long last managed to submit a first draft of her thesis reviewing British *Megalosaurus* (while simultaneously rearing children). Joining the fold this autumn are two new PhD students: Craig Hunn will be working on the thorny question of vertebrate biogeography, systematics, and evolution in the Mesozoic, and Sarah Sangster will be doing a long-awaited description and systematic review of pterosaurs, focused on Richard Owen's excellent material of the early pterosaur *Dimorphodon* from Lyme Regis in Dorset.

It has been a pleasure to have extended visits from Martin Lockley (Denver), Dave Weishampel (JHU) and Jeff Thomason (Guelph - sabbatical) working with us recently. Dave and Jeff have been cooking up a number of projects on skull morphology and evolution, while Jeff is also slightly under the cosh because he is in the process of completing the manuscript of a new book on skeletons for Oxford University Press.

An even more pleasing event in 1998 was the opportunity to host a celebratory dinner at Trinity College Cambridge (in association with Angela and Andrew Milner) to honor Alec Panchen. This extremely pleasant evening was attended by many of his former students and colleagues (Bob Carroll was represented by a bottle of champagne!) and culminated in the presentation to Alec of a bound copy of the festschrift volume that was published in the *Zoological Journal of the Linnean Society* in 1998.

Gillian King (currently based in the Faculty of Classics in Cambridge - gmk20@cam.ac.uk) still looks at mammal-like reptiles when she gets a chance. She's currently working on the species taxonomy of the dicynodont genus *Dicynodon*, with a view to looking more closely at its relationship with *Lystrosaurus*.

University of Cambridge, University Museum, Department of Zoology

It's a little while since I did a report from the University Museum of Zoology, so I'll backtrack a bit. Over the past couple of years, Jenny Clack and her preparator Sarah Finney have been working on a project that continues the story of the beginnings of tetrapod evolution. We named the project "Closing Romer's Gap" and it follows the story of "what happened next" after tetrapods evolved legs and started to move onto land. We have been working on a specimen from the Hunterian Museum in Scotland, which consists of the only known articulated tetrapod from the Tournaisian stage. It is gradually emerging from its limey clay nodule to reveal an almost complete skeleton. Its skull bears more than a passing resemblance to *Whatcheeria deltae* from the Viséan of Iowa, but its postcranial skeleton looks more like that of a baphetid (i.e., loxommatid), now that we know a bit about what they look like. Seems like a continuation of the theme of mix-and-match seen in the Viséan beast which Jenny mischievously called "*Eucritta melanolimnetes*," the creature from the black lagoon. To her surprise this animal, described in *Nature* last year, was picked up by the world's press, not for its puzzling mix of tetrapod characters, but for its name. (Any publicity for early tetrapods is good publicity?) This animal turned out to have a patchwork of characters seen in temnospondyls, anthracosaurs, and baphetids. I suspect that we are going to be hearing a bit more about early baphetids and who their relatives might have been.

The origins of the amniote lineage took a few steps further back into the past with the publication by Roberta Paton (Royal Museum of Scotland), Tim Smithson (Cambridge Regional College), and Jenny Clack of a recent paper in *Nature* describing *Casineria kiddi*, a headless, but otherwise remarkable skeleton from the Viséan of Scotland. It predates the fauna from East Kirkton near Edinburgh preserving the other controversial "earliest stem amniote," *Westlothiana*. *Casineria was a small animal, significant in this small size as much as anything else, with terrestrially adapted limbs, and a pentadactyl hand (the earliest known) that could have gripped the substrate. It seems to corroborate ideas that amniotes separated from amphibians way back in the Early Carboniferous (Mississippian) if not before and that their origins might have been connected with small adult size.*

The evolution of lower jaws, the transition from fish to tetrapod and from aquatic to terrestrial feeding was continued by a paper on early tetrapod and fish jaws, and how to tell the difference, published in 1998 with Per Ahlberg.

Jenny's work on the braincase of *Acanthostega*, published in 1998, gave some more details about the early evolution of tetrapod hearing mechanisms. These were initially presented to the J. B. Johnston Club for Neurosciences and published in *Brain, Behaviour and Evolution* in 1997. This year, she has been invited to participate in a neurosciences course at the Karolinska Institute in Sweden, talking about the evolution of hearing. The work has also led on to some ideas in the "Evo-Devo" field about the embryogenic origins of the tetrapod braincase, presented at the Systematics Association meeting "Major events in early vertebrate evolution" in April this year. Continuing the theme of early tetrapod braincase evolution she and Per Ahlberg have been thinking about the very peculiar braincase of *Ichthyostega*. In 1997, they paid a brief visit to Copenhagen to look

at the specimens, and think they can now at least name the parts. In May they are making a follow-up visit to look at it in more detail.

On the other side of the coin, Jenny has a joint paper in press in *Geology* on the dating of the East Greenland tetrapods. John Marshall (Southampton) and Tim Astin (Reading) found some spore-bearing samples on fieldwork in the area in 1996, and can now positively correlate the tetrapod-bearing horizons on palynological data with Famennian rocks elsewhere. Recent radiometric dating had given a result which would put these □Devonian□ tetrapods well up in the Viséan, inconsistent with everything we know about the faunas.

It was a visit to meet Marshall and Astin which led to Jenny and a team from Cambridge and Bristol collaborating with the Denmark and Greenland Geological Survey (geus) and making a return visit to East Greenland in summer 1998 to collect more vertebrate specimens. A team of four (all female) spent five weeks exploring Gauss Halvo and Celsius Bjerg, and we succeeded in collecting some articulated material of ichthyostegids as well as the first acanthodian spines and scales and bivalves from the Celsius Bjerg group.

Jonathan Jeffery completed his thesis on the poorly known group of large Paleozoic fish, the rhizodonts. This magnum opus consisted of struggling with some large and intractable specimens in hideous matrix, and working out the systematics of the group known mainly from isolated scales, bones, and teeth. A few specimens of semi-articulated individuals helped the process, and he has come up with some better ideas of what a rhizodont actually is.

Sally Neininger is continuing her thesis work on the structure, microarchitecture, and histology of dermal bone across the fish□tetrapod transition. She has looked at a range of taxa including *Eusthenopteron*, *Panderichthys*, *Acanthostega*, *Ichthyostega*, *Whatcheeria*, *Loxomma*, *Trimerorhachis*, and *Captorhinus*. She is spending a couple of weeks in Paris with Armand de Ricqles and his group to learn techniques and to have discussions.

In October, our group will be joined by Matt Allinson, who will be working on the systematics and morphology of gorgonopsids from eastern and southern Africa.

(compiled by David Norman and Jenny Clack)

UNITED STATES OF AMERICA

Northeast Region

Brown University

Steve Gatesy is continuing his studies of theropod locomotion using 3-D computer animation. Projects include the simulation of Triassic theropod tracks with Kevin Middleton, and an analysis of pigeon wing movements during flight based on high-speed X-ray films. Kevin Middleton is continuing work on hallux evolution in theropods (avian

and nonavian). Christine Janis and Jessica Theodor have been working hard finishing up a manuscript with John Damuth (uc Santa Barbara) on ungulate diversity during the Miocene and Pliocene, which is on its way out the door as this is being typed. Jessica took over teaching Christine's comparative vertebrate anatomy course for several weeks this semester, which she enjoyed very much. She is glad to report that she hadn't forgotten all of her hard-won shark anatomy, but is even gladder to be finished with the course. Christine has also been writing up her project on head scaling and costal ventilation in tetrapod evolution (with undergraduate Julia Keller), and is just about to depart for a Linnean Society meeting in London. (Christine Janis)

Calvert Marine Museum

It was a real treat to have Jenny Clack (University Museum of Zoology, Cambridge, UK) speak to the Calvert Marine Museum Fossil Club and deliver a public lecture early in the new year on the origin of tetrapods.

The Department of Paleontology is now contributing to a new temporary exhibit on both the modern Atlantic sturgeon and Miocene *Acipenser* remains from Calvert Cliffs. Stephen Godfrey is working with Jimmy Langley and Skip Edwards to sculpt a 14-foot fish, purported to be one of the largest Atlantic sturgeon on record.

Ralph Eshelman and Stephen recently visited some Miocene exposures of the Chesapeake Group along the lower end of the Patuxent River in Maryland. Regrettably, many of the classic localities have been bulldozed and replaced by riprap. Stephen is sufficiently settled into his position as curator that he has started to peck away at research projects that have been neglected for years. (Stephen Godfrey)

George Washington University

The recently developed graduate program in systematics and evolution at GWU is now fully formed, and its unique graduate curriculum is on view at www.gwu.edu/~clade. Jim Clark continues to work with Mark Norell and others at the American Museum on the various dinosaur projects emanating from the expeditions to the Gobi Desert of Mongolia. The results of an analysis of relationships among basal coelurosaurians prepared by Mark, Pete Makovicky, and Jim, was presented at the Ostrom Symposium at Yale in February; many thanks to Jacques Gauthier for organizing such a stimulating symposium around the spectacular exhibit of Liaoning fossils assembled by Ji Qiang. Jim, Hans Sues, and Dave Berman will submit a description of a sphenosuchian crocodylomorph from Ghost Ranch soon, along with a critical summary of the several conflicting analyses of this group that appeared earlier this decade. Sphenosuchia seem to be the poster child for the pitfalls of inferring relationships among taxa represented by a very few, poorly preserved specimens housed in museums spread around the world. Ph.D. student Maureen Kearney is beginning writing her dissertation on amphisbaenian squamates, a group that lent itself well to her epistemological inquiries into being and nothingness (i.e., the difficulties of comparing highly modified structures with more "normal" ones, and the supposed problems of "missing" data). Maureen won the prize

for best student presentation at the Willi Hennig meeting last October for her musings on the treatment (and mistreatment) of missing data. Master's student Regina Munter has been studying two intriguing theropod dinosaur fossils from the Jurassic La Boca Formation of Tamaulipas, Mexico, and dissecting an alligator and rhea along the way. A pelvis and parts of a skull both seem to belong to a coelophysoid theropod, and the pelvis, including a sacrum fortuitously hemisected by weathering, preserves several novel features. Geobiology Ph.D. student Jon Powell has submitted a draft of his dissertation, begun under the wise guidance of Hans Sues, on the anatomy of the cloacal region of living diapsids and the inference of sexual dimorphism in fossil archosaurs. Ending on a more personal note, Jim has been burning up the rails between Washington and New York as he and his bride of almost a year, Cathy Forster, dream wistfully of actually living together, or at least spending some time together in the field collecting dinosaurs. (James M. Clark)

Johns Hopkins University School of Medicine

Mary T. Silcox is busy planning research trips to museums and universities across the country in order to collect data for her dissertation project. Mary is trying to clarify relationships between the various families in the Plesiadapiformes, and to address the relationship between this cluster and other Archontan groups (particularly Primates and Dermoptera). Her project is primarily focussed on a cladistic study of dental traits, although a reevaluation of cranial and postcranial features will also be included. Mary is also busy with a variety of projects dealing with Wasatchian mammals of the Bighorn Basin, including continuing work on early artiodactyls and on unusual concentrations of small mammals. (Mary T. Silcox)

National Museum of Natural History

Time for another svp report from the Smithsonian's National Museum of Natural History. One of the brightest developments of late is the addition of Sally Shelton to our permanent museum collections staff. Sally is now Collections Officer for the nmnh, part of the Office of the Assistant Director for Research and Collections. Sally is also, as president, helping to coordinate the annual meeting of the Society for the Preservation of Natural History Collections, to be held in D.C. at the end of June this year. The spnhc meeting will feature some notable paleo talent in the paper and poster sessions. Needless to say, we are delighted to have added Sally to the staff and she is interacting with the vp crew here in a variety of ways.

Bob Purdy has been busy with collections and preparing a paper and presentation for the American Elasmobranch Society meetings in June. He also has two papers published, one on Lower Miocene shark remains published by the Delaware Geological Survey (this can be downloaded from their website), and the other on the Paleocene elasmobranch remains of South Carolina, published in the *Transactions of the American Philosophical Society*.

Dan Chaney would like to thank Mike Woodburne and Judd Case for Dan's involvement in the work on Seymour and Vega islands in Antarctica. It has always been

enjoyable and generated a lot of good science and, of course, memories. Paleobarbie was actively engaged in the collecting of several partial plesiosaur skeletons (one of which almost passed over as a helicopter anchor) and had a great time with Al Khim. Dan and his paleobotanical cohorts went to Midland, Texas, for a week in March to look at well cores. This was quite interesting in that there were a number of intervals from 6,000+ feet deep in the well in which plant leaves were recovered. Also among them were the remains of a barely recognizable fish and a shark's tooth. In April, he and Skip Lyles (nmnh Collections Management staff) went to Provo, Utah, to crate the skull of *Diceratops*, which had been on loan to byu for about 18 years. Ken Stadtman was very helpful in this activity and we appreciate his efforts on this project.

Ralph Chapman has been very busy. He just had a paper accepted for publication with Nigel Hughes (senior author) and Jon Adrain on trilobite development in the first issue of the new journal *Evolution and Development*. Ralph is trying to finish up a whole slew of projects now that some rough health times for his family finally are behind him. He is working hard on a series of papers with Rud Sadleir on tooth morphology in theropods. Also in the works are two chapters in the new edition of the Dinosauria with various other vppers, a series of papers on functional analysis and modeling with Dave Weishampel, and a bunch of papers on theoretical morphometrics and morphospace theory and application. Finally, he is in the middle of a series of papers with Kay Behrensmeyer on taphonomy and quantitative paleoecology. Much of his time right now, however, is concentrating on three-dimensional scanning, modeling, and all the potential uses of such in research and exhibits and education as part of the *Triceratops* Project.

The main thrust of the vp group at nmnh has been concentrating on the *Triceratops* Project. This is large group effort concentrating on the disassembly and conservation of the *Triceratops* mount in the Dinosaur Hall, which is almost 100 years old (the mount, not the hall). The bones have been showing considerable damage from being out on display and the posture is old, so we have been taking down the mount, conserving the bone material, and casting the elements. The mount will be replaced with a cast in a more modern posture. The new mount will be used as part of Dinofest 2000, and will be remounted in the hall itself after that. Linda Deck is serving to manage the exhibition part of that, Mike Brett-Surman is the main in-house scientific consultant, Pete Kroehler and Steve Jabo are coordinating the prep side of the project, Mary Parrish is adding her expertise to the illustration end, and Richard Benson, the chair of Paleobiology, is the mentor and head of the project. The whole skeleton is totally dismounted now and the guys are molding and casting at a rapid rate. Oh, and we are replacing the feet.

An offshoot of the project is headed by Ralph Chapman, who is working with Art Andersen of Virtual Surfaces (Mount Prospect, Illinois) and Lisa Federici of Scansite (San Francisco) to scan enough of the original composite skeleton to create a complete, three-dimensional, virtual version of *Triceratops*. The scans will be used to generate prototypes (3-D hard copy), for those bones we need to replace, by making mirror images of the bilateral equivalents we have. We are also generating reduced, but highly accurate versions of the skull, two other skulls we scanned for *Monoclonius/Centrosaurus* and another *Triceratops* head (a beautiful half head, which we will mirror to completion), and

a whole 1/6-scale skeleton. The latter will be used as a base for some sculptures, for some basic functional analysis, and to build a model of the old posture for comparison with the new. We are already animating the virtual model and are starting to bring in artists and paleontologists to help try and deduce actions at all articulations. Scott Sampson, Peter Dodson, Cathy Forster, Greg Paul and Bob Walters have all given great input so far and we are hoping for more. We also hope to bring in some engineers unencumbered with biological training to try some experimental work. Further, Pete and Steve will use the virtual *Triceratops* as a guide in the design and assembly of the new mount. Needless to say, there will be various presentations on this in Denver.

Important Collections News. For almost 20 years now, we have been planning to move the sauropod, turtle, tracks, titanotheres, and mysticetes to our support facility in Silver Hill, Maryland, but, until now, construction problems have delayed the move. We now have a tentative schedule. Starting in late November most of these collections will be moved to the msc, except for the mysticetes. They will be stored next door in a new building at the Garber Facility along with the Recent ones. After these collections are moved, access to them will be by appointment only. Due to limitations in the available study space, which is shared with other Museum departments, visitors will have to make appointments with us at least six to eight weeks in advance; conflicts in scheduling with other departments may arise and rescheduling may be necessary. Unannounced visitors will not be able to gain access to these collections.

Concerning collections on the Mall, because we are shorthanded in collections and are reorganizing many of the collections on the Mall as well as planning the msc moves, we may also have to deny access to these collections to visitors without appointments. If you plan to visit here, please call or e-mail Bob Purdy, Dave Bohaska, or Bob Emry. (Ralph Chapman)

Peabody Museum, Yale University

In February, the Peabody Museum and the Department of Geology and Geophysics co-hosted □New Perspectives on the Origin and Early Evolution of Birds, an International Symposium.□ We would like to thank all the speakers and participants, not to mention the symposium staff, for making it such a success. The exhibit, China□s Feathered Dinosaurs, will travel next to the Royal Tyrrell Museum in Drumheller, Alberta. Check out the exhibit on line at our website. For information about the upcoming Special Publication of the Symposium Proceedings, contact the Peabody Publications Office.

In March, the director and curators of the Peabody Museum presented John Ostrom with the Addison Emery Verrill Medal for his exceptional contributions to the field of natural history. Congratulations!

By the time you read this, we hope to have official nsf confirmation of an award to begin conservation and stabilization work on the oversized material in the Peabody□s dinosaur collection. Marilyn Fox and her crew of volunteers have already begun work cleaning, repairing, and making bases. Jack McIntosh has agreed to consult with us on the project.

Mary Ann and Chris are still plugging away at data reconciliation and inventory projects. We hope to be upgrading our presence on the Peabody website over the summer. Chris is compiling information on high-density mobile storage units (compactors) and would like to hear from anyone who has experience using them to store oversized material.

Marilyn Fox spent three weeks in March working with Luis Chiappe and Rodolfo Coria in Patagonia, continuing work begun last year on the dinosaur egg site at Auca Maheuvo. She will also be spending three weeks in the field this summer in Wyoming, with Nick Fraser.

Elisabeth Vrba spent much of last summer working on new Miocene Recent antelope fossil finds, including many new species and genera, from the Middle Awash in Ethiopia with Tim White, Berhane Asfaw, Johannis Haile-Selassie, and other colleagues. Recent and current research includes description and phylogenetic analysis of these new fossils, how species habitats relate to climate, evolution, and migration, and application of new multiphasic growth models to tests of hypotheses of human brain evolution. With George Schaller, she edited a volume on the fossil record, modern biology, and conservation of ruminant artiodactyls which is now in press at Yale University Press. (Gerry Parisi)

The State Museum of Pennsylvania

Our new Triassic diorama, which depicts a family group of *Coelophysis* at water's edge with a submerged *Rutiodon* poised to pounce upon a juvenile *Coelophysis*, was unveiled this past November. The diorama had been under construction for over a year and complements our Dino Lab exhibit, which is now in its sixth year of operation.

For the past two field seasons volunteer Fred Widmann, with Bob Sullivan, braved the harsh August temperatures, and occasional monsoonal downpours, of the New Mexico summer in search of Late Cretaceous vertebrates. Although last year was ideal for collecting (only one washout day), the summer of 1997 was a different story. Intense thunderstorms, courtesy of El Niño, forced us to terminate the field season prematurely. One of our campsites (in Ah-shi-sle-pah Wash) was affectionately dubbed "Camp River Runs through It!" Despite this we were successful in obtaining some important specimens from the Kirtland Formation.

Bob is working on a number of projects that are a direct outgrowth of continuing fieldwork in the San Juan Basin, New Mexico. These include: a reassessment of the age, stratigraphy, and dinosaur faunas of the upper part of the Kirtland Formation; a description of a new pachycephalosaur specimen, description of a Paleocene amphisbaenian in a reguritalite (with S. Lucas), review of specimens assigned to *Torosaurus*, and describing an impact fracture in a theropod metatarsal (with Bruce Rothschild). Four of Bob's papers were published early this year: the scapulocoracoid complex in *Gyracanthus* (with S. Lucas and K. Randall); the long-awaited description of the new long-crested skull of *Parasaurolophus* (with T. Williamson); the description of the Orphan Mesa theropod *Eucoelophysis baldwini*; and the status of the original type material of *Coelophysis* (with S. Lucas); and lastly, the new ankylosaurid

Nodocephalosaurus kirtlandensis. Bob's paper (co-authored with T. Keller and J. Habersetzer) on the fossil anguid lizard *Ophisauriscus quadrupes* from Geiseltal and Messel should be published before year's end.

At the end of April, Bob had the pleasure of hosting Hartmut Haubold (Geiseltalmuseum, Halle, Germany). During his stay Hartmut and Bob traveled to the Carnegie Museum of Natural History, participated in a local Triassic field trip led by Mike Szajna, and lastly visited the Academy of Natural Sciences. (Bob Sullivan)

University of Bridgeport

Peter Galton had an extremely enjoyable time at the YPM symposium on "New Perspectives on the Origin and Evolution of Birds" in honor of Dr. John H. Ostrom in New Haven in February. Peter has been looking at the systematic position of the rather fragmentary remains of the supposed dinosaur *Spondylosoma absconditum* Huene, 1942 from the Santa Maria Formation (Middle Triassic) of Brazil (in collection of Universität Tübingen). However, this taxon lacks certain Dinosauriformes-Dinosauria characters (sigmoid curve and epiphyses in neck, distally placed deltopectoral crest on humerus) and those present (accessary hyposphene-hypantra articulations, three sacral vertebrae, elongate pubis) also occur in rauisuchians, the group to which it is tentatively referred. In the same submitted manuscript he reillustrates (mostly with photographs) different aspects of the anatomy of the herrerasaurid dinosaur *Staurikosaurus pricei* (in MCZ collection) from higher up in the Santa Maria Formation (Upper Triassic). In looking at the status of the two vertebrae sacrum of this species, he reexamined the nature of the three vertebrae sacrum of prosauropods, a group with a "very unusual" type of sacrum because it has been characterized (as part of the Sauropodomorpha) as adding the third vertebra from the caudal series and, more recently, as also having the three vertebrae sacrum of the Dinosauria with the third one being incorporated from the dorsal series. However, back in 1973 (*Paläont. Z.*), Peter described the sacrum of a juvenile individual of *Sellosaurus gracilis* (as "Efraasia diagnostica", Upper Triassic, Germany) as having only two vertebrae. An examination in 1998 of other specimens of *S. gracilis* from the Stübensandstein of Germany (at the Staatliche Museum Naturkunde in Stuttgart and the Universität Tübingen), showed that four sacra of *S. gracilis* had a two-vertebrae sacrum, that four other individuals of the same species had a three-vertebrae sacrum (so presumably a sexual dimorphism with this form as the female), and that the additional vertebra was incorporated from the tail as is plainly also the case in the better-known three-vertebrae sacra of the prosauropod *Plateosaurus* (Upper Triassic, Germany). However, the third sacral vertebra is incorporated from the dorsal series in other prosauropods such as *Massospondylus* (southern Africa) and *Riojasasaurus* (Argentina). Consequently, the plesiomorphic condition for the Dinosauria is two sacral vertebrae and the three vertebrae sacrum probably arose independently in at least four separate lineages (twice within the Prosauropoda, Theropoda, Ornithischia). However, this should not be surprising as sacral vertebra 4, 5, etc., were also added independently in several different dinosaurian lineages (Prosauropoda, ? how many different lineages of sauropods, theropods, and ornithischians). Full details on the prosauropod sacra, with a discussion of

the constitution of the sacrum in other dinosaurs, should be out sometime this summer in *N. Jb. Geol. Paläont. Abh.* (Peter M. Galton)

University of Pennsylvania

Well, the "Year of the Dinosaur" in Philadelphia officially ended with the opening of the ANSP's new Dinosaur Hall and Dinofest, but we haven't felt the pace slack off much around here. Ted Daeschler has successfully defended his dissertation on the "Vertebrate Fauna of the Non-marine Facies of the Catskill Formation (Late Devonian) in Pennsylvania" and has been officially absolved of all meaningless graduate toil and awarded the Ph.D. In recognition thereof, the ANSP promoted him to Assistant Curator of Fossil Vertebrates. Ted and Professor Neil Shubin continued the documentation of Ted's findings this year in *Nature* (391:133). The paleobotanical spy in our midst masquerading as a VP, Walt Cressler, is writing like a madman trying to finish his Ph.D. on the paleoecology of the Red Hill site this spring.

Mike Balsai has just about finished his dissertation "An Examination of *Paleosaniwa canadensis* and an Evaluation of Its Importance to the Evolution and Relationships of the Platynotan Lizards." This consists of the osteology of MOR 792 from the Two Medicine Formation and UCMP 118497 from the Hell Creek and a redefinition of the taxonomy and phylogeny of *Paleosaniwa*. Like Walt, Mike expects to finish this term and we are enthusiastically looking forward to committing his body to the job market. Carol Cabbage has received an A.M. for her shark phylogeny work and is thinking about what to do next. Second-year Ph.D. student Matt Lamanna has submitted his Sc.M. thesis on Gondwanan theropods and has finally, according to third-year Ph.D. student You Hailu, "gotten a damned Master's and become a real paleontologist." Congratulations to our newly minted alumni and almost alumni.

Professor Peter Dodson is continuing work on several fronts. He has taken on yet another book project and is working on the second edition of *The Dinosauria* with David Weishampel (Johns Hopkins) and Halszka Osmłska (Polish Academy of Sciences). This year, two papers came out of the Madagascar project, including the description of *Majungatholus atopus* (*Science*, 280:1048-1051), led by Scott Sampson (Utah) and the description of titanosaur osteoderms by Peter, Dave Kause, Cathy Forster (both SUNY Stony Brook), Scott, and Florent Ravoavy (Universit d'Antananarivo) in *JVP* (18[3]:563-568).

Adjunct Professor Scott Wing (NMNH) has decided that there is more to the world than plants(???) and has joined SVP. We expect him to begin generating theropod cladograms within the year....

Second-year Ph.D. student Marcus Davis spent July and August of 1998 in the Triassic of eastern Greenland with Neil and Leon Classens, Farish Jenkins, Bill Amaral, and Chuck Schaff (all of Harvard) hunting for basal archosaurs and playing with Leon's "polar foxes." Marcus hopes to spend this May in Mazongshan, China, with Neil and Hailu, and the balance of the summer and early fall in the Devonian of the Canadian Arctic and

the Triassic of Morocco with Neil and the Harvard crew. He is currently focused on the biomechanics and ontogeny of rhizodonts, the constraints on the evolution of paired appendages, and the systematics of Triassic archosaurs. Neil for his part is continuing his work on Early Mesozoic anurans; he and Farish Jenkins put the latest installment of this work in *JVP* in September (18[3]:495-510).

Hailu is continuing his work on sauropods from the Sichuan Basin of China and protoceratopsids from Inner Mongolia. He has had a very productive year, receiving a National Geographic Society Grant (along with Zhou Zhonghe [Kansas] and Zhang J.) to investigate fossil birds from Inner Mongolia, demonstrating that the forefin of the ichthyosaur *Chensaurus chaoxianensis* shows delayed mesopodial ossification with Ryosuke Motani (Toronto) in *JP* (72[1]:133-136), discussing the taxonomy of the same in *JVP* (18[3]:533-540), describing a new ankylosaur from the Upper Cretaceous of Shanxi Province, China with Paul Barrett (Cambridge), Paul Upchurch (Bristol), and Alex Burton (Cambridge), and describing the genesis of the stratigraphic sequence in the basins of the Mazongshan areas of Gansu Province, China, with Tang F., Luo Z., Zhou Z., and Tan in *Chinese Geology* (10:41-44). He expects to spend this summer in the Sichuan Basin.

Second-year Ph.D. student Allison Tumarkin is continuing her dissertation work on strange and broken dinosaur bones (she of course calls it comparative histology of bone pathologies, but we know better...). She has thus been spending most of her time masquerading as a first-year V.M.D. student and taking most of her classes in the Vet. School. On the side, she and Peter continued to argue for the taxonomic validity of *Avaceratops* at *SVP* (18(3):83A). They are expanding this work into an examination of ontogenetic bone surface texture change in modern reptiles and mammals. Since receiving an NSF Doctoral Fellowship, she has decided that money is no object and she spent part of the fall term in South Africa studying bone histology with Anusuya Chinsamy (Cape Town). Allison presented a preliminary assessment of her work at Northeast GSA in March, 1999 with Dodson, Darren Tanke (rtmp), and Bruce Rothschild (Arthritis Center of NE Ohio) as co-authors. Examination of collections at ANMH, NMNH, BYU, and FMNH and the Western Australian Museum will consume her summer.

Matt Lamanna is focusing his dissertation on Cretaceous neoceratosaurian and plesiomorphic tetanuran theropod dinosaurs. In August, he and fourth-year Ph.D. student Josh Smith went to Mexico City to study the type of *Labocania anomala*, a puzzling theropod from Baja California, which they are redescribing with Dan Chure (dnm). Following this, Matt, Josh, Hailu, Tom Holtz (Maryland), and Dodson voiced their doubts as to the taxonomic validity of *Dilophosaurus sinensis* (*jvp*, 18(3):57A). In December, the Matt and Josh Show relocated to Chubut Province, Argentina, to study dinosaur material in the care of Rubén Martínez (Universidad Nacional de la Patagonia). One of the goals was to study a putative abelisaurid maxilla mentioned by Martínez in 1993. It predates all described abelisaurid material and may cast doubt upon the utility of this clade for the evaluation of Upper Cretaceous paleogeographic hypotheses. A Lamanna, Martínez, and Smith paper on this work should be submitted to *jvp* this spring. In the second week of their stay in Argentina, Matt and Josh joined Martínez, Marcelo

Luna, and Gabriel Casal to prospect in the Albian–Cenomanian Bajo Barreal Formation of central Patagonia. After only a short time, the group found several new dinosaur specimens, including the partial skeletons of a large, long-clawed theropod and a medium-sized sauropod. Matt, Josh, and Dodson plan to rejoin Martínez in the Bajo Barreal in December of 1999, to fully excavate and begin study of these specimens. An agreement between the two institutions is in the works for a multi-year, detailed examination of the Bajo Barreal paleoecosystem.

Prior to the Mexico City and Argentina trips, Josh Smith and Penn geologist Ben LePage found several interesting archosaurs in the Eocene of Puerto Rico, which are being prepared. Part of August was spent on the paleoecology of the Lance Formation of Wyoming with Kraig Derstler (New Orleans). The first paper from this work is being written up, as is the description of Lance footprints discovered in 1994. In February and March 1999, Josh and Penn geologists Jen Smith and Bob Giegengack traveled to the Baharya Oasis of Egypt to try and rediscover the sites described by Ernst Stromer in the early 1900s. Not only did they rediscover the sites, but found several partial dinosaur skeletons, including a huge theropod (maybe *Spinosaurus*) and a sauropod. A multi-year agreement between the Cairo Geological Museum and Penn has been set up and Josh, Matt, and Peter expect to drag some undergraduates to Egypt to excavate these specimens this coming fall. In between these trips, Josh has been running around the country collecting data for morphometric work with Ralph Chapman (nmnh) on the utility of theropod dentition for paleoecology, taxonomy, and systematics. Josh and Peter have recently submitted the first paper, on dentition terminology, to *jvp*. Although on the back burner, Josh is continuing his work on the paleoecologic and geobiologic utility of dinosaur footprints with Jim Farlow (Indiana) and Paul Olsen (Columbia). Paul, Josh and Nick McDonald (Wesleyan) recently put the first paper of this work into *jvp*, 18(3):586–601 and the second paper (Josh and Jim) is in press. Work also continues on the geology of the Sihetun Quarry in Liaoning Province, China. Josh, Hailu, and Peter have enlisted the aid of Penn geochronologist and petrologist Gomaa Omar to aid in the unraveling of this issue. Our latest feelings on this issue were published in *gsa Abstracts*, 30(7):38A, and will appear in the Ostrom Symposium Volume.

Southeast Region

Florida Museum of Natural History

After a fruitful and productive two years as a postdoc and lately, interim VP Collection Manager, Barry Albright left the museum this spring for his new position as Curator of Paleontology at the Museum of Northern Arizona.

Dave Webb enjoyed the first two weeks of April collaborating with Dave Whistler at the L.A. County Museum on an extraordinary undescribed camelid from the Tecopa Lake Beds of late Blancan age. Despite its late occurrence and many uniquely derived features, this camelid represents an ancient branch of stenomylines. Tune in at the SVP meetings when we will give more details. Personally, this takes Dave back more than three decades to the last time he worked on camelid osteology at the LACM.

In April the Aucilla River Prehistory Project sent Dave Webb, Andy Hemmings, Brinnen Carter, and Jim Dunbar to the meetings of the Society of American Archaeology in Chicago to present four papers on aspects of extinct faunas and Paleoindian cultures. In May the ARPP conducted its last season excavating late Pleistocene sediments in the dark waters of that river. There is much to write up, including new evidence of tools made from *Equus* metatarsals. A substantial set of Aucilla contributions are in hand for a multi-authored book being edited by Dave Webb.

Bob Feranec is in the process of finishing his Master's thesis on the evolution of the grazing niche in Florida using stable isotopes for his defense date in July. After his defense, Bob will attend the University of California, Berkeley, for his Ph.D. working under the guidance of Anthony Barnosky and Ronald Amundson. At UC Berkeley, Bob plans on continuing his research using stable isotopes to answer paleoecological questions. As the academic year ends, we are pleased to celebrate the graduation of Brian Beatty with honors in zoology. His thesis contributes new records of Florida Miocene Protoceratidae and comments on their paleobiology. One highlight is the association of new *Prosynthetoceras* records from Alum Bluff with the flora from that locality. Brian will continue here at least another year on an undergraduate scholarship conducting other research and adding academic depth.

Jay O'Sullivan is writing the first chapter of his dissertation. It is a description of a tiny *Archaeohippus* specimen donated by the Tampa Bay Fossil Club to the FLMNH. This specimen is the smallest, oldest *Archaeohippus* from Florida. It is distinct from *A. blackbergi* from the Thomas Farm Local Fauna. Study of this specimen is yielding some very interesting implications about horse evolution and biogeography during the Arikareean of Florida. For one thing, it has metacarpals that look like fat black toothpicks (it's really that puny). (Jay O'Sullivan)

LSU Museum of Natural Science

Judith Schiebout and Suyin Ting continue work on the Fort Polk Miocene, including a recent trip to see comparative material in Austin. Recent papers include: Hinds, David J., Neogene stratigraphy and depositional environments of the Fort Polk and Slagle areas, Louisiana Geological Survey Report of Investigations 99-01. Judith Schiebout has been consulted on the paleontology of the Red River area for development of Sciport, the new science center which opened last November in Shreveport. Our LA Eocene whale skull (*Basilosaurus*, cast by Chris Madsen) is being featured. Contact dinolab@facile.com to purchase a copy.

The death of Helen Schiebout, Judith's mother (age 98) on March 29 was a blow, as she had been active and alert to the end. She was a lively companion for Judith, and thus involved in VP starting in 1968, when she and husband Joe visited Judith in the field in Big Bend, and discovered she wasn't kidding when she said that the buzzards made a low pass if people stop to rest.

Julia Sankey has moved to Alberta in January and is working on late Campanian vertebrates from the Judith Group of Alberta with Don Brinkman of the Tyrrell. She can be reached at: Department of Biological Sciences, University of Alberta, Edmonton, Alberta, T6G 2E9, Canada; (780) 492-5635. <Jsankey@unix1.sncc.lsu.edu>. She recently received a Jurassic Foundation grant for further magnetostratigraphic work in the Aguja Formation (late Campanian) of Big Bend, Texas. And, her paper on the vertebrate paleontology and magnetostratigraphy of the late Blancan upper Glenns Ferry Formation, southwestern Idaho will be out in the next volume (And Whereas) on Idaho Vertebrate Paleontology (available at this year's SVP).

Alton (Butch) Dooley (squalodon@aol.com.) completed his Ph.D. in December, and now is getting several components of the dissertation ready for publication. In May, he visited Nick Fraser at VMNH to examine a baleen whale skeleton. He is still teaching high-school science and working as an instructor in the Department of Geology and Geophysics at LSU, but is looking for other work now. Ray Wilhite is completing preliminary dissection of *Alligator mississippiensis* as a stage in his plan to do computer models of the limbs to test his ideas on muscle modeling. In Late May and June, Ray will visit museums in New Mexico, Arizona, Utah, Colorado, Wyoming, South Dakota, Minnesota, and Kansas to measure and digitize sauropod limb material. He thanks Arthur Anderson of Virtual Surfaces for the loan of a Microscribe 3D digitizer for use in his museum tour and for help in learning modeling techniques and training in using the equipment. Michael Williams will accompany Ray on his trip to help in handling specimens and to examine mosasaur material for comparison to a Late Cretaceous specimen from Colorado he is seeking to identify. Michael is developing ideas for a senior thesis and future graduate work and asks that people with mosasaur information and interests contact him at mosa621@aol.com.

Walter Joyce, visiting this last year from the Friedrich-Alexander Universität Erlangen Nürnberg, Germany, has returned home to Germany, but will go to Yale to pursue his Ph.D. in fall 1999. (Judith Schiebout)

South Carolina State Museum

Several projects occupy our time at SCSM. The State Museum Foundation is in the process of raising money to purchase an *Albertosaurus* cast and develop a display concerning dinosaurs in the southeastern U.S. Additionally, the State Museum will host □*T. rex on Trial*, □ a travelling exhibit from the Museum of the Rockies and Kokoro, which will be open from December 7, 1999, until May 7, 2000.

Almost 100 tons of matrix from a Plio□Pleistocene site named □The Walrus Ditch□ were collected and are now being screenwashed and sorted. The site has yielded *Nannippus* and *Pachyarmatherium*, in addition to a number of microvertebrate taxa. Over 30 taxa of marine and terrestrial mammals have already been identified from this site. Exploration of the Rancholabrean Wando Formation is continuing, with two faunas already in the lab. This will be an on-going, ten-year project between the SCSM and

Vance McCollum, a dedicated avocational collector who resides in the Wando (actually in Summerville, South Carolina, where the Wando outcrops).

Jim Knight has survived his first semester back in the classroom as a Ph.D. candidate at the University of South Carolina, in addition to his duties as Chief Curator of Natural History at the SCSM. In his □copious□ free time he is working on several fossil snake projects, including an Arikarean fauna from Florida, his dissertation work on *Pterosphenus*, a Pliocene snake from Argentina, and an incredible new taxon collected by Phil Gingerich in Pakistan represented by a nearly complete, articulated skeleton. (Jim Knight)

Midwest Region

Cincinnati Museum Center

We are pleased to announce that our preparation laboratory exhibit (i.e., □fish tank,□) opened to great acclaim in March. This has been a big hit with the public (no surprise) who may view fossil preparation and chat with staff and volunteers in our associated demonstration area. New volunteers keep pouring in, and to date, we have enough work to keep them busy!

Glenn Storrs has submitted his chapter to the Lothagam monograph project, edited by Meave Leakey and John Harris. His study examines the crocodylian fauna of the Lothagam Hill site, southwestern Turkana Basin (late Miocene□early Pliocene) which contains four genera and five species - aremarkable diversity of crocs in an area that supports only the Nile crocodile today.

Some excitement was generated recently when Paula Work discovered a large amount of material donated to the Cincinnati Society of Natural History by E. D. Cope! Before you come running, please note that these are not fossil vertebrates, but rather a large part of Cope□s Ohio Valley unionid collection, containing many now extinct forms. While not VP, it was fun to find a direct Cope connection to CMC.

Staff and volunteers will soon head to Kansas and Montana for summer fieldwork. We expect two new students in the fall to help us with our Kentucky anthracosaur project. (Glenn Storrs)

Murray State University

We currently await news regarding a few grant proposals, all of which should come in over the next 2□3 weeks. Bob Martin and Jim Honey (U. Colorado) will return to the Meade Basin for summer fieldwork, but it remains to be seen how many colleagues and students will accompany them. From laboratory sorting over the past academic year, we have a number of new, rich microvertebrate localities from the Meade Basin, especially in the Blancan and Irvingtonian. We are especially pleased with a series of sites, constrained by radiometric dates, that span the Blancan□Irvingtonian and

Pliocene-Pleistocene boundaries. We also intend to continue prospecting in the Rexroad Formation south of the Cimarron River and then try to fill in gaps above the Rexroad; in both the Ballard and Crooked Creek formations.

Bob, Jim, and Pablo Pelaez-Campomanes are finishing up a "state-of-the-art" manuscript on the stratigraphy and paleontology of southwestern Kansas, with special reference to the Meade Basin rodent project. A preliminary paper examining turnover of rodents in southwestern Kansas recently appeared in the first issue of the new journal, *Evolutionary Ecology Research*, which can be accessed at www.evolutionary-ecology.com. Follow the path through Volume 1 to the paper by Martin and Fairbanks. Work also continues on the rodents of the late Tertiary Pipecreek Jr. sinkhole from Indiana, graciously provided for study by Jim Farlow.

Bob Martin is also trying to work on a website devoted to arvicoline dental evolution and classification with Alexey Tesakov (Russian Academy), but it goes slowly because the taxonomy of this pesky group is extremely complex. Of course, it doesn't help that we are trying to accomplish this on a global basis by e-mail. Alexey hopes to join us for part of the 1999 fall semester.

Ryan Hurt continues study of the rodents from the Irvingtonian Aries and Rick Forrester sites for his master's thesis. After a brief honeymoon with his bride in June, Ryan will join us for a while in Kansas. (Bob Martin)

Museum of Geology, South Dakota School of Mines & Technology

Great things continue to happen at the Museum of Geology as we gear up for another field season in the Black Hills.

Jim Martin is quite busy, as always. He recently returned from a six-week trip to Antarctica where he collected Cretaceous marine fossils with Judd Case (St. Mary's College, California), Dan Chaney (Smithsonian), Al Kihm (Minot State, North Dakota) and institutions in Argentina. Shortly after his return, Jim flew to Europe to attend a conference, where he presented some of his Antarctic findings and to check out specimens in the Paris Museum. As if all this is not enough, he is busy making preparations to return to Fossil Lake, Oregon, for continued fieldwork in Pleistocene deposits of the area, followed by fieldwork at several areas in South Dakota where he will be focusing on the marine Cretaceous this summer.

Jim and Carrie Herbel have recently developed an undergraduate paleontology track within the Department of Geology at SDSM&T. This program is to begin the fall of 1999 and many excited students look forward to this focus.

Gordon Bell remains an active part of our family as well. Dr. Bell has just returned from a six-week expedition to the Cretaceous marine deposits of New Zealand. He hopes that his efforts "Down Under" will provide new insight into mosasaur phylogeny and paleobiogeography. Gordon and Jim are in the midst of a mosasaur monograph. With the

excellent artistic abilities of Barbara Rowe, artist and paleontology graduate student, this publication will be an important addition to the marine Cretaceous. In addition to ongoing research, Gordon is planning several field paleontology courses. Included within his summer activities will be excursions to the Cretaceous marine deposits of the southern Black Hills and the Missouri River.

Carrie Herbel remains extremely busy as well. Accompanying her duties as Collections Manager, she is planning another field season at the Oligocene "Pig Dig" in Badlands National Park. She is also devoting some time to Rapid City's new Children's Science Center, as part of the Museum's educational outreach program. With the help of the SDSM&T Paleontology Club, Carrie is acting as a scientific consultant and is making several fossil casts for "dig boxes" that will enable area children to participate in small scale "digs." On top of all her activities within the Museum, Carrie has decided to complete her goals toward her doctorate degree. Luckily she has the full support of the Museum, the Administration, and, most importantly, her husband, Mike Greenwald. Mike continues his curation of specimens collected from Badlands National Park as he works for both the Park and the Museum.

Mike and Dave Cicimurri (recent M.S. Paleontology Graduate and also hired by the Park) have entered thousands of cataloged specimens into the ANCS+National Park Service database program in addition to reorganization of the Park's collections, and curation of ongoing field activities associated with SDSM&T. Mike will be running a summer field course into Hell Creek country in northwestern South Dakota in late June. He will also continue with his work on the Mni Wiconi Pipeline project on the Pine Ridge Indian Reservation and Badlands National Park with Gordon Bell this summer.

Additional activities through the Museum include the near completion of a mounted *Allosaurus* skeleton for the Journey museum. Students Dan Lien, Heather Finlayson, and Darrin Pagnac have nearly completed this dynamic mount which will be a striking addition to the Journey's displays.

We at the Museum of Geology have bid farewell to a few members of our group. Recent graduate Dave Cicimurri accepted the curatorial position at Clemson University, and he and his wife, Christian, have just left for South Carolina. Christian hopes to complete her thesis work on the Ringold fauna sometime this summer. Best of luck, Christian and Dave!

We will also be saying good bye to another recent graduate, Darrin Pagnac. Darrin plans to supervise excavations at the Jurassic Little Houston Quarry this summer, and help with field paleontology courses at that site. After the summer's work is completed, Darrin will be enrolled in the Ph.D. program at the University of California, Riverside. There, Darrin plans on shifting his research focus from sauropod dinosaurs to Barstovian biostratigraphy and paleomagnetism with Dr. Michael Woodburne. Good luck, Darrin!

As the summer field season draws near, everyone here at the Museum of Geology is feeling the anticipation of the proverbial "hunt." Several new graduate students will

have their first field experience, while others will continue to broaden their knowledge of paleontology through further fieldwork and individual research projects. We all expect great things here and look forward to another productive summer. (Darrin Pagnac)

The University of South Dakota

Tim Heaton will be returning to southeast Alaska for the summer to excavate for the sixth straight year in On Your Knees Cave. The cave contains an extensive fauna of mammals, birds, and fishes dating from 42,000 to the present. Most of the birds are alcids, diving ducks, geese, gulls, cormorants, etc., that apparently got to the cave when arctic foxes were feeding in their rookeries. The fish bones come from otter scats and represent local coastal species. The only species dating to the glacial maximum is ringed seal, which is associated with fast ice. An alpine fauna of caribou, saiga, arctic fox, marmot, lemming, and heather vole, as well as brown and black bear, dominates the period before the last glacial maximum. The cave documents the faunal transitions across the last glacial and the Holocene development of the coastal rainforest. This research is supported by grants from the National Science Foundation and the National Geographic Society.

Gary Johnson continues studies, with colleagues, in the Permian of Texas and Oklahoma and the Pennsylvanian of Arizona, with emphasis on xenacanth.

We enjoyed a nice visit from Jack Horner on April 23. He presented a talk on dinosaurs as part of the USD undergraduate research forum called IdeaFest. (Timothy H. Heaton)

Western Michigan University

Bob Anemone recently completed and submitted a manuscript to the *Journal of Human Evolution* with Bert Covert (University of Colorado) on the *Omomys* postcranial material from Peter Robinson's *Omomys* Quarry site in the Bridger Basin. As we reported at the Chicago svp meetings, *Omomys* presents an interesting mosaic in its various hind-limb joints of specialized vertical clinging and leaping traits with more generalized quadrupedal traits. Bob also finished a manuscript (coauthored by Brett Nachman of Washington University) for a book on tarsiiiform primates (Rutgers University Press, edited by Sharon Gursky, Pat Wright, and Elwyn Simons). Our chapter is a review of the functional morphology of these amazing leaping primates. Bob also presented a poster on his ongoing Great Divide Basin project at the American Association of Physical Anthropologists meeting in Columbus, Ohio, and gave a talk at the University of Rochester on dental development and hominid evolution. We are gearing up for our sixth field season in the Paleocene and Eocene of the Great Divide and will be in the field with a crew of 12 for the month of July. Jim Harris, a student of Bert Covert at Colorado, will be joining Ed Johnson (formerly an undergrad with Dana Cope at the College of Charleston) as my graduate student in the fall of 1999. Ed has just completed his first year at Kalamazoo and will be working on his Master's thesis (expected completion June 2000) on the fauna, biostratigraphy, and paleoecology of the Tipton Buttes fauna from the Great Divide Basin. (Bob Anemone)

Southwest Region

Lamar University

Margaret Stevens and her husband, Jim, have been working in Big Bend National Park, Texas. Margaret is finishing up a report that deals with carnivorans from the late Miocene Screw Bean Local Fauna, and Jim is detailing the geologic setting of the Banta Shut-in Formation which contains the local fauna. This work has expanded, of course, in several directions. As work proceeded it was found that late Miocene and Pleistocene-Quaternary rocks were intimately involved in considerable faulting. An important part of the significance of the local fauna is its geologic relationship with Cretaceous basement rocks, particularly the Boquillas Formation, unstudied for over 50 years. A detailed stratigraphic study of the Boquillas Formation was undertaken to document the geologic setting of the late Miocene basin. Jim and Margaret are collaborating with invertebrate paleontology colleagues from the University of Texas at Austin and the United States Geological Survey (Denver), and with two students, in publications about the stratigraphy, ammonites, and inoceramids from the Boquillas and lower Pen formations. (Margaret Skeels Stevens)

Mesa Southwest Museum

Heidemarie Johnson continues fieldwork and preparation of Devonian fish near Payson, Arizona. Heidemarie tells us that the fishes appear to be Middle Devonian, although the Martin Formation is generally considered to be Upper Devonian.

Brian Curtis tells us work on the sauropod front has been quiet, with no publications to report, merely work in progress, and, of those, no earth-shattering items come to mind. Placing real life images taken in person alongside published characters demonstrates the tremendous range of sauropod morphologic variation and calls into question a myriad of prior interpretations.

By the time you read this, Doug Wolfe will have led the May expedition to the Zuni Basin and will be preparing for his September fieldwork. Doug is currently preparing several manuscripts describing more *Zuniceratops* material, as well as several new and exciting taxa from the Moreno Hills Formation.

We welcome aboard Larry Marshall as a new Adjunct Curator of Paleontology. Larry is acting as a liaison to the Southwest Paleontological Society's Tucson Chapter and has begun organization of a symposium on the evolution and biodiversity of the Sonoran Desert to be held at the Mesa Southwest Museum in the next year or so. Larry is pleased to see his paper, "The stage for Neotropical fish diversification: A history of tropical South American rivers," published (with co-authors: John G. Lundberg, Javier Guerrero, Brian Horton, Maria Claudia S. L. Malabarba, and Frank Wesselingh) in "Phylogeny and Classification of Neotropical Fishes," and is looking forward to the publication of the Cretaceous Pajchapatana fauna in *Palaeogeogr. Palaeoclimatol. Palaeoecol.*

Bob McCord is also pleased with the publication of several papers in both paleontology and herpetology. As always, he is very busy with the museum's expansion, but has recently been finding a little time for fieldwork. A recent expedition to the Cabeza Prieta National Wildlife Refuge turned up numerous fossil tortoises, many undoubtedly *Hesperotestudo*, which he hopes to describe. After over a year of waiting, his permit for the Fort Crittendon Formation was finally approved, and he is currently planning a major assault on the Late Cretaceous of Arizona. Bob also began organizing next February's Symposium on Southwest Paleontology and has already received one manuscript. Past years' symposia volumes are still available, and contributors for next year's are welcome. Contact Bob McCord for details. Bob enjoyed attending this year's WAVP meeting in Fresno, California, and everyone at the museum is excited about hosting the 2001 WAVP meeting. By that time, the new museum expansion will be open and we hope everyone can come and enjoy our hospitality. (Bob McCord)

Department of Geology, Northern Arizona University

It has been some years since we reported so we will just try to hit some recent highlights. Heidemarie Johnson completed her PhD through the Biology Department in 1995 and is now a Research Associate here. Since graduating she published several papers on the Mt. Elden placoderm fauna and on a new placoderm fauna from Payson in central Arizona. Her paper on a new actinolepid arthrodire and an analysis of the actinolepids was accepted for publication in the *Zool. J. Linn. Soc.* Currently she is working on the extensive Upper Devonian fauna of arthrodires and antiarchs from Payson and also a number of actinolepids from the Lower Devonian of the western US.

Randy Reed completed his MS on the stratigraphy, paleontology, and sedimentology of the Water Canyon Formation in northern Utah in 1997. He has been working for the department as a technician since then and published several papers on the biostratigraphy of the Water Canyon Formation and of the Lower and Middle Devonian of the western US. He is currently working on the description of a new cyathaspidid from the Water Canyon Formation with Dave Elliott.

Dave Elliott was foolish enough to agree to take over as one of the editors of *JVP* in 1997 and is now struggling to get any research done (only one more year to go). Spring of 1996 was spent on a teaching exchange in London at UCL which enabled him to spend time in the BMNH collections and those at Paris and to complete papers on Cretaceous bee burrows and Silurian cyathaspidids. A sabbatical in the fall of 1998 allowed him to work in the collections at the Field Museum in Chicago, to visit the GSC collections in Calgary, and to spend time with Tony Fiorillo being force-marched up and down Beartooth Butte in the rain. Current projects include a major study of Silurian and Devonian heterostracans from the Canadian Arctic with Ray Thorsteinsson of the GSC, and continuation of the description of vertebrate faunas from the Lower Devonian of the western US. In addition a number of projects on Pennsylvanian invertebrates are in the works and should be submitted this year.

Two new students will be starting this year. Bill Parker will be working on a Chinle aetosaur (with the help of Dave Gillette who is now settled in at the Museum of Northern Arizona), and Chris Thompson will be working on footprints in the Permian Coconino Sandstone.

The department will be hosting a major vertebrate paleontology meeting in May of 2000 when the Lower Vertebrate/Early Vertebrate meeting will be held here. First circulars were sent out but anyone who is interested and who hasn't received one should contact Dave Elliott.

Jim Mead, not knowing that he was being foolish, also is now a co-editor of *JVP*. Most of his research is centering on squamates of southwestern Australia and southwestern North America (with Sandy Swift and Chris Bell). Work is continuing on various aspects of the Irvingtonian deposits in Porcupine Cave, Colorado: herpetofauna (with Chris Bell, Austin), *Ochotona* (with Margarita Erbjajeva [Russia] and Sandy Swift), and artiodactyls (with Lou Taylor, Denver Museum). Margarita and Jim are also working on some Asian ochotonids. Sandy Swift (Collections Manager for the Laboratory of Quaternary Paleontology, NAU), graduate student Chris Jass (Quaternary Studies Program, NAU), and Jim are working on the voluminous herpetofauna from a cave in western Arizona. Jim and Lou Taylor are still working on Pliocene caprine bovids and are pulling in the assistance of Chris Shaw (Page Museum, California). Graduate students working on various vertebrate master's theses include: Mary Carpenter (dry cave deposit, Grand Canyon), Phil Gensler (Anza-Borrego mammals), Diana Hallman (mammoth), Marci Hollenshead (mammals), Chris Jass (mammals), Don Jolly (turtles), and Michael Pasenko (*Rhynchotherium*). (David Elliott and Jim Mead)

Texas Tech University

Vertebrate paleontology is alive and well in Lubbock, Texas. Currently, six graduate students are investigating topics spanning 200 million years of vertebrate evolution. Tom Lehman is supervising three Master's students: Richard A. Kissel, Jr., is documenting the geology and paleontology of an Upper Pennsylvanian tetrapod locality in Oklahoma; J. Jeff Anglen is studying a multigeneric bonebed located in Big Bend National Park, Texas; and Jonathan R. Wagner is reviewing the hadrosaur fauna of the Big Bend region.

Sankar Chatterjee is currently supervising three graduate students. Momchil Atanassov is a PhD student from Bulgaria. His dissertation involves the description of a new archosaur from the Upper Triassic of West Texas, which may shed light on the origin and early evolution of pterosaurs. He will be presenting two posters at this year's SVP meeting, a morphometric analysis of the Late Jurassic pterosaur genus *Rhamphorhynchus* and an evaluation of methods used to estimate missing statistical data. Amy Edler is studying dicynodonts, and Niko Herzog is describing a newly discovered aetosaur specimen. Both Amy and Niko are pursuing MS degrees.

Finally, the department recently bid farewell to two vertebrate paleontology graduate students. Alan B. Coulson successfully completed his thesis research on the paleontology

and sedimentology of a juvenile *Alamosaurus* locality, and Eric O. Simpson received his MS degree for his work on the phylogeny and biostratigraphic utility of parasuchids from West Texas. (Rich Kissel)

The University of Texas at Austin Department of Anthropology, Department of Geological Sciences, and Vertebrate Paleontology Laboratory

John Kappelman, Tim Ryan, and Mulugeta Feseha, along with Tab Rasmussen (Washington University) will be spending the month of May in northwestern Ethiopia investigating some new Oligocene sediments with good fossil vertebrates and plants. The sites were discovered last year and represent some of the first sub-Saharan localities of this age. In late June Kappelman and Mary Maas will travel to Turkey to work in the Eocene Kartal Formation and attempt to locate new vertebrate localities. This work is in collaboration with N. Kazanci of Ankara University. Rob Scott will be joining Mikael Fortelius and friends in the late Miocene of the Lantian in China. Tim Ryan and Mulugeta Feseha both successfully defended their PhD prospecti this spring and are now officially in candidacy; Rob Scott is next in line with a defense date planned for late summer. Adam Gordon completed his MA thesis in May □99. Adam used a laser scanner to quantify 3-D joint surface areas in the □Bramblett baboons□ and concluded that this is a more accurate technique than simple linear measurements. Mr. Murat Maga, a recent graduate of Ankara University, will be entering the graduate program at UT in fall □99. He is interested in the evolution of Miocene apes. Dr. Myriam Zylstra joined the program as a postdoctoral fellow in March. She is working on our new Digital Library grant from NSF on the human skeleton. Welcome to Myriam, and congratulations for a successful defense of her PhD dissertation!

Ernie Lundelius continues his research on the Pleistocene faunas of Texas and Australia. He attended the CAVEPS (Conference on Australasian Vertebrate Evolution Paleontology and Systematics) in Sydney where he gave a paper with Bill Turnbull on *Leporillus* from Madura Cave. Together with Russell Graham, he continues to work on a revision of the FAUNMAP database. Tim Rowe and Coco Kishi made great strides with their course □Digital Methods in Paleontology□ this semester; students worked on CT images of archosaurs, lepidosaurs, and mammals. Tim spent most of his time this semester enjoying his new role as director of the VP lab. Chris Bell is still trying to accomplish all the things he said he was going to do in the last issue of this Bulletin.

Pamela Owen is completing her work on American badgers and is currently utilizing CT data to reexamine badger cranial anatomy. She recently completed a manuscript with Chris Bell on paleontology and conservation of black-footed ferrets. Ron Tykoski is consumed with his study of basal theropods (particularly ceratosaurs), and much of his time this semester was spent processing new CT scan data of the skull of *Syntarsus kayentakatae*. Ron is assembling manuscripts derived from his MS thesis, and he and Tim Rowe are preparing a description of a new crocodyliform taxon from the Kayenta Formation of northeastern Arizona. Gerald Grellet-Tinner completed SEM analyses of eggshell samples from the paleognath clade and various non-avian maniraptorans this semester. Analyses were facilitated by grants from the AMNH and by the UT Austin

Geology Foundation. Gerald participated in a recent expedition led by Luis Chiappe to Argentina. Ted Macrini is working diligently on his MS thesis, comparing the ontogeny of an opossum (*Monodelphis domestica*) with synapsid phylogeny. He plans to graduate in December. Jonathan Franzosa, a first-year graduate student, will be looking at the evolution and development of the pneumatic system in archosaurs for his dissertation project. Lyn Murray is currently working on CT-scan data from the skull of *Sphenodon* to be published in an upcoming volume of *Biology of the Reptilia*. He will be doing a preliminary evaluation of his field area this summer in the Plio-Pleistocene vertebrate fossil beds at the Anza-Borrego Desert State Park, California. Dennis Ruez is in the closing phases of his MS work in Florida; with this behind him, he looks forward to initiating a new research project at Hagerman Fossil Beds National Monument in Idaho. David Dufeu is continuing his research into the early evolutionary history of birds. He is making use of UT's High-resolution X-ray Computed Tomography Facility to generate data sets detailing the internal morphology of a variety of birds. To date, David has scanned a number of fossil as well as extant taxa. The extant taxa include frozen specimens in addition to skeletal preparations. It is his hope and expectation that the data generated will improve our understanding of avian phylogeny. Anne Walton recently left Texas for western Massachusetts, where she is a Visiting Scientist at the Pratt Museum (Amherst College). She is busy revising manuscripts on the molecular systematics of hystricognath rodents and preparing to attend the International Congress on Neotropical Evolution in the Cenozoic.

The High-resolution X-ray CT-scanning facility is going strong; with his seemingly endless ability to overcome all challenges placed before him, Rich Ketcham scanned many beautiful fossils from around the world in the last several months. Matt Colbert successfully defended his PhD thesis on tapirs and joined the staff of the CT lab this semester. (Dennis Ruez)

Rocky Mountain Region

Dinosaur National Monument, Utah

Dan has finally submitted his dissertation on the revision of the genus *Allosaurus* and a review of the Allosauridae. He hopes to defend in the near future. Dan has coauthored a paper on the first occurrence of an intercontinental dinosaur species (1999, *Journal of the Geological Society, London*, 156) which should be out by the time this is read. He is also putting the finishing touches on a paper for the Ostrom Symposium volume on the wrist morphology of *Allosaurus* and the evolution of the semilunate carpal.

Scott Madsen and Ann Elder continue excavating a site in the Cedar Mountain Formation. The sauropod bonebed has produced one skull with jaw and neck articulated. The skull is odd, intriguing, and beautifully preserved. A second disarticulated skull will be the focus of fieldwork this summer. The location of this site has allowed the interpretive staff at dino the chance to do something they have never done before - lead small, organized groups to a working backcountry excavation. Judging from visitor comments, the experience is paying off.

Ann and Scott will be working with niosh this summer as part of a larger project involving many museums around the country. This study will be looking at dust and silica hazards in paleo labs and excavation sites. Thanks to the Smithsonian for sending niosh our way. (Dan Chure)

Garden Park Paleontology Society dba Dinosaur Depot, Cañon City, Colorado

Apologies to readers for a large hiatus in news from Dinosaur Depot and the Garden Park Fossil Area. Donna Engard is, as I write this, in the midst of constructing a "clean" lab for collection and curation at Dinosaur Depot. With the help of material donations and the blood, sweat, and mashed fingers of volunteers, this project will soon be completed, providing a different look at fossil use and display for visitors. Work is proceeding in the lab on the preparation of Tony's tree, the 150-million-year-old Jurassic tree trunk found in May 1998 by one of our school-group visitors in the Garden Park Fossil Area. A total of 20 feet of trunk with branches was excavated in spring and fall of 1998. The completion of the preparation of "Spike" the stegosaurus, excavated in 1992 by the Denver Museum of Natural History, made room in the lab for the work on the tree. Specimens on loan from American Museum of Natural History, Cleveland Museum of Natural History, and the University of Colorado Museum gives lab volunteers no shortage of materials to prep.

In the field, almost weekly forays in the local area have yielded some new finds of both Jurassic and Ordovician eras. With the discovery of the tree has come a new concentration on other Jurassic plant fossils and, sure enough, we have come across seeds in over 18 distinct varieties as well as short shoots, stems, and root casts. Knowing of the existence of trace fossils at Indian Springs, a well-known Ordovician track site east of Cañon City, prompted close looks for other such areas southwest of town. They are there and the quality is very good, with even some invertebrate fossils being found on anthills, an exciting find. Some of the track patterns are identical to the ones at Indian Springs and very identifiable. The Cañon City embayment as a whole, outside of the Garden Park Fossil Area, is yielding some wonderful finds and we have only scratched the surface (pun intended). New looks are also being taken at numerous historic quarries in the area in general. There are plans for field classes again this year as well as gearing up for summer visitation. Springtime is school-group time, with groups as large as 90 that come for tours of both the Depot and the fossil area. For information about the Depot call toll free at 1-800-987-6379 or our e-mail (depot@ris.net). (Pat Monaco)

University of Wyoming, Laramie

Jay Lillegraven has been dedicating most of his research time to coordinating a multidisciplinary study of Wyoming's eastern Green River Basin, as broadly defined. Specifically, through combination of VP, structural geology, and university- and industry-derived reflection seismology, his team of colleagues and students is focusing on the sequence and timing of Paleocene events that forever subdivided eastern parts of what formerly was an enormous, deep, foreland basin of the Rockies. Detailed biostratigraphy

is the key to the story, and Jay is finding this work to be a whole lot of fun - with lots to learn.

Penny Higgins is still working away on her dissertation. She is also looking forward to presenting her dissertation results on the boundary between the Torrejonian and Tiffanian North American Land Mammal Ages (naamas) this fall in Denver. Her results about the nature of naama boundaries are very enlightening.

John Burris, John Foster, and Michael Cassiliano continue to curate the vertebrate paleontology collections in the Department of Geology and Geophysics, as well as work on a variety of research projects.

Michael Webb continues his research on Late Cretaceous mammals and geology of the Lance Formation of northwestern Wyoming.

Kelli Trujillo finished her thesis work on new microvertebrate localities in the Morrison Formation of southeastern Wyoming and plans to enter a doctoral program at the University of Wyoming this year.

Brent Breithaupt and Beth Southwell (UW Geological Museum) continue their work on tracks across Wyoming. Partnerships with the Forest Service, blm, and other institutions are resulting in exciting new public programs, research, and displays at the UW Geological Museum.

Progress continues with the Collection Improvement Grant here at UW. We have curated all Mesozoic specimens in the collection and are nearly finished with the Paleocene specimens. Collections from many localities have been greatly expanded as we sorted through vials and trays of unsorted concentrate. Many of the additions to the Cretaceous localities are of nonmammalian vertebrates. The Paleocene collections have been expanded by curating large quantities of uncataloged mammal teeth. Since the start of the grant we have added nearly 4,000 new specimens to the Collection of Fossil Vertebrates. Mike Cassiliano continues to slowly work on his paper formalizing and finalizing the stratigraphic nomenclature of the Palm Spring Formation in the Anza-Borrego desert of southern California. We would remind all those who have borrowed UW specimens to please return them posthaste as soon as you are finished with them. (Brent Breithaupt)

Utah Museum of Natural History

The big news at the Museum was the hiring of Dr. Scott Sampson as our new Curator of Vertebrate Paleontology. Scott officially starts in early July, then it is off to Africa hunting Gondwana dinosaurs.

The proofs are in for the upcoming Vertebrate Paleontology in Utah (David Gillette, editor). Papers in this volume include specimens in our collections (the Muddy Creek plesiosaur) or are written by people affiliated with the Museum; Rose Difley's study of

the biostratigraphy of the North Horn Formation, and Michael Kass's description of a new mosasaur from the Mancos Shale. This volume will be published by The Utah Geological Survey, and we would like to congratulate Jim Kirkland on his recent appointment as our new State Paleontologist. Many new and exciting changes are happening in Utah paleontology. (Michael Kass)

West Coast Region

Anza Borrego Desert State Park

The official opening of the Colorado Desert District Stout Research Center (DSRC), including an enlarged and much-improved preparation laboratory and new paleontology collections hall with curatorial work area, was held on the 7 May. Again, thanks to all who helped make the Center a reality. With the festivities over, now we can get back to the more mundane work of organizing our newly assembled reprint collection and earthquake-proofing cabinets and shelves.

Phil Gensler and Don Jolly of Northern Arizona University were temporary residents of Borrego Springs through the month of April. Phil continues his fieldwork on the Coyote Canyon Irvingtonian vertebrates, braving the first summer temperatures, and Don spent his days going through our cool collection of turtles and tortoises. Hugh Wagner, of the San Diego Natural History Museum, spent several days examining the Blancan and Irvingtonian *Neotoma* material from ABDSP.

George McDaniel, George Jefferson, and Paul Remeika each presented the results of their latest research at the Desert Research Symposium held at the San Bernardino County Museum in April. Respectively, their papers included studies on *Mammuthus meridionalis* from the Borrego Badlands, late Miocene mammals from Hawk Canyon, and Neogene vertebrate footprints from the Vallecito Fish Creek basin. George McDaniel will be presenting his work on *M. meridionalis* at the upcoming conference in Rotterdam. He also reports that a full survey of the elephantid material from ABDSP, including descriptions and measurements, is on file at the DSRC.

Field survey work in Clark Lake, one of the youngest sections in ABDSP, was completed this season. The deposits apparently postdate the Bishop ash series and appear to be correlative to the top of the Bautista Formation exposed in the western Borrego Badlands and Coyote Canyon. No definitive Rancholabrean taxa have been recovered, and our preliminary assignment to the Late Irvingtonian appears valid. (George T. Jefferson)

California State University, San Bernardino

Stuart Sumida continued to enjoy his sabbatical year but juggling duties between long-overdue projects with colleagues, overseeing the Cal State interns that will be going to the Field Museum this summer, and consulting for Walt Disney Imagineering and Consumer Products have prevented anything approaching □relaxation. □

Stuart was pleased to see page proofs for the Vertebrate Paleontology in Utah volume edited by Dave Gillette. He was involved in three different chapters on the Late Paleozoic fishes, amphibian-grade tetrapods, and amniotes respectively. The fish chapter was written with CSUSB M.S. student Gavan Albright and Beth Rega from the Claremont Colleges. The amphibian chapter was co-authored with CSUSB M.S. student James Walliser and Eric Lombard from the University of Chicago. The amniote portion was a collaboration with Eric, along with Dave Berman and Amy Henrici at the Carnegie Museum of Natural History. In collaboration with Thomas Martens, Dave, Amy, and Stuart continue to study the wonderfully well-preserved Lower Permian specimens from the Bromacker locality in central (formerly eastern) Germany. Currently, they are enjoying the new information being provided by some of the best *Seymouria* specimens ever discovered. Dave and Stuart are also collaborating with Dave Eberth from Tyrell on a manuscript detailing the sedimentology and taphonomy of the locality. Stuart has also (finally) begun work on a long-delayed collaboration with Jeff Dodick of the Weitzman Institute on what may be a new species of the captorhinid reptile *Protocaptorhinus*.

In addition to the continuing work on things Paleozoic, Stuart seems to have been drug kicking and screaming into the Mesozoic. Together with Chris Brochu at the Field Museum, he provided a review of the phylogenetic context for the origin of feathers for a Society of Integrative and Comparative Biology Symposium. Their manuscript will eventually appear in *American Zoologist*. Stuart also submitted a manuscript on the similarities between generating anatomically correct animated characters and the process of reconstructing fossil taxa to the volume to be associated with last year's Dinofest in Philadelphia.

During Stuart's sabbatical, the laboratory seems to get busier and busier. The Master's program at CSUSB will soon graduate its first student in vertebrate paleontology, as James Walliser races to finish his thesis on the postcranium of the enigmatic diadectomorph *Tseajia*. James is receiving help with the illustrations from undergraduate thesis student, Heather Deogracia, and CSUSB alumna, Blake Burnett. James continues to balance his writing with laboratory teaching duties in the Human Anatomy and Physiology course. After a bit of a hiatus due to teaching duties at Crafton Hills College, Gavan Albright is preparing to defend his thesis proposal to study the cranial anatomy of the captorhinid reptile *Captorhinikos parvus*. John Tometich continues to develop new strategies for preparation and casting derived from his art background.

CSUSB also continues to be a stepping stone for Californians on their way to Chicago. Stuart continues to oversee the Cal State University's system's contribution to the study of Sue, the Field Museum's *Tyrannosaurus rex*. Last summer, James and John went to Chicago to work on Sue, and both anticipate returning this year. This summer, they will be joined by Ian Browne, also of CSUSB, Margaret Hart of Cal Poly Pomona, and Bradley Beck from Cal State Northridge. Stuart continues to commute back and forth between San Bernardino and Chicago to set the students up and oversee the Cal State web presence associated with the project. Kathleen Devlin continues to absorb much of the work on the website construction.

Speaking of *T. rex*, part of Sue is being prepared in Orlando at Walt Disney's Animal Kingdom Theme Park. As half of Stuart's sabbatical is being funded by Disney's Imagineering Group (essentially their research and development group), he gets to go to Florida frequently, and has had an opportunity to stick his nose into the "Dinoland" Fossil Preparation lab. He thanks Bruce Schumacher and Casey Holliday for letting him stick his nose in their business and pester them. Among his duties with Imagineering, Stuart has helped them to reevaluate some of the dinosaurs in their "Countdown to Extinction" attraction. However, he doesn't pretend they've gotten all of their paleontology correct! He just hopes he can be a positive influence. Additionally, he has counseled them on animal and human anatomy for a number of other attractions, and has worked closely with the product division in California this past academic year. Along with Elizabeth Rega at the Claremont Colleges, he also continues to work with Sony Pictures Imageworks. Stuart just finished work on Stuart Little, and he has provided Beth with a bit of help as she takes the lead on consulting for the upcoming Hollow Man project.

Finally, Stuart was honored as CSUSB's 1999 professor of the year. "Amazing!" he says. "You can do all you want in the Paleozoic, but touch a dinosaur and people get all excited!" Seriously, he knows that the award is due in huge part to his students and his remarkable colleagues, Dave Berman, Eric Lombard, Chris Brochu, Amy Henrici, and particularly Beth Rega. (Gavan Albright)

Claremont Colleges

Am slowly getting the San Miguel Island late Pleistocene material into press. In October published a review of the fauna, which included a description of a new "giant" species of *Microtus*. Presented at the Fifth Channel Islands Symposium in March a paper on a new species of Puffin, which will be published later this year. Am now trying to get a Cape Gannet to compare to a complete skull this genus from San Miguel Island. (Dan Guthrie)

University of Oregon, Eugene

Greg Retallack continues with studies of paleosols and apes from the Miocene of Kenya. General works on African grasslands and a site study of the paleosols on Maboko Island are in preparation. Recently, Greg has become interested in the ecological and evolutionary significance of the dominance of different tooth types in fossil and living mammals. The relative importance of incisors, canines, and molars varies considerably in different mammals, and can easily be quantified. Most encouraging was a pilot study of the changing proportions of incisor buccal area, canine buccal area, and molar occlusal area through Miocene time in Kenyan catarrhines, to be presented in Denver this November. It all seems too simple. Has anyone else done anything like this?

Doctoral student, Jonathan Wynn, is working hard to complete a chapter on paleosols for a book on the Kenyan locality of Lothagam edited by Meave Leakey and John Harris. His

paper on East Turkana paleosols is also doing the rounds. The Turkana paleosol sequence is turning out to be an outstanding record of Neogene paleoenvironmental change.

Dale Hanson is completing a Master's thesis on the Oligocene (late Arikareean) faunas of Logan Butte in central Oregon. This outcrop is isolated from the better-known localities in the John Day Valley to the north, and has yielded a mammal fauna broadly similar to that in the north. But differences such as a greater abundance of agriochoeres may have paleoecological significance.

Former Ph.D. student Erick Bestland recently obtained a faculty position at Flinders University in South Australia. Erick is well known for his studies of paleosols and sedimentary environments in the mammal-bearing Tertiary of Oregon and Kenya, and now will be able to turn his talents to the fossil fields of the South Australian Miocene. Erick's wife, Evelyn Krull, also an Oregon Ph.D., goes on to a postdoc at Indiana University, continuing her studies of carbon isotopic composition of organic matter in paleosols. They have a paper in press on the paleoclimatic significance of isotopic differences in Kenyan Miocene paleosols. Hopefully their long-distance relationship will be short-lived. (Greg Retallack)

University of California, Berkeley

Berkeley has had both good news and bad news over the past nine months. In April we mourned the loss of Don Savage, whose half century of participation in the intellectual life of UC left an indelible mark on our institution and several generations of paleontologists. He will be greatly missed, and a tribute to our colleague will appear in the next *SVP News Bulletin*.

On the good news side, the entire UCMP community was pleased to be tapped as the top program in paleontology in the latest *US News and World Report* graduate school rankings. For more information see <http://www.usnews.com/usnews/edu/beyond/gradrank/gbgeosp4.htm>.

Bill Clemens reports from London that he is enjoying sabbatical leave and the opportunity it affords to get back into a variety of research projects. In January he was able to visit Albuquerque and continue a study of the phylogenetic relationships and biogeography of *Eoconodon*. Tom Williamson and Spencer Lucas provided access and were most helpful in his work in the magnificent San Juan Basin collections in the New Mexico Museum of Natural History.

In February Bill traveled to London and is spending the rest of the spring semester working at the Natural History Museum. Here his research interests focused on some old and new friends from the Mesozoic. Among these projects Percy Butler and Bill completed a restudy of *Amphitherium* and analyzed the patterns of morphological and ontogenetic evolution of the postcanine dentition in early mammals. Yep, *Amphitherium* had five premolars in its adult dentition and none appear to be retained deciduous

premolars. Angela Milner, Jerry Hooker, and Paul Ensom deserve special thanks for their extensive help and hospitality.

Bill plans to be back in Berkeley in mid-June to head for eastern Montana in July and welcome his newest graduate student, Cherie LeDoux, who joins us from Yale.

Tony Barnosky welcomes three new graduate students into his lab: Edward Davis, Bob Feranec, and Samantha Hopkins. All three will start their Ph.D. programs in fall 99. Tony also welcomes Marc Carrasco as a postdoctoral scholar, who joined us in January. Tony and Marc are in the early stages of building a FAUNMAP-style database to address questions relating to the effect of vicariance events on speciation rates, and welcome interactions with others who are putting together paleo databases. Tony also has been busy writing parts of and editing even more parts of a book on the early/middle Pleistocene Porcupine Cave fauna, which is slated to be published by University of California Press in 2001 or 2002. Floating even farther up the time scale, Tony and colleagues Elizabeth Hadly (Stanford University), Brian Maurer (Brigham Young University), and Miguel Christie (Sociedad Naturalista Andino Patagonica) just finished building a database to help assess the effects of historical constraints on terrestrial vertebrate biodiversity in northern Patagonia and the northern Rockies. More info is available at <<http://ib.berkeley.edu/labs/barnosky/>>.

Kevin Padian was able to briefly poke his head out from under the mounds of exams and term papers overflowing his desk to report that his current projects are progressing apace. These include collaborative work with Jack Horner and Armand de Ricqles on bone histology including one on comparative reptilian embryos, one on basal birds, and another on growth-rate evolution in dinos and pterosaurs. Also, more work on the evolution of the avian flight stroke, and some long-delayed descriptions of *Scutellosaurus* and *Montanazhdarcho* with a couple of his students join the piles of end-semester grading on his groaning desk.

Other denizens of the department have equally groaning desks. Ryosuke Motani continues to wow everyone with his productivity with recent articles in *JVP* on *Chaohusaurus* and *Chensaurus* and progress on all aspects of ichthyosaur phylogeny and functional morphology. Ken Angielczyk with Phil Gingerich published on the Eocene crocodylian *Asiatosuchus* last fall in the *University of Michigan Papers in Paleontology*. Ken is now working on his phylogeny of dicynodonts and a paper on the timing of sirenian origins. Jim Parham is still grappling with the systematics of early testudinids, currently focussing on the primitive limb and cranial morphology of new *Hadrianus* finds, and is finishing a paper on sea turtles from the California Cretaceous, in collaboration with Tom Stidham. As we write, Jim is off to St. Petersburg and Moscow to study the Asian records of macrobaenids and any other turtle that passes his way.

Greg Wilson accompanied UC paleobotanist Nan Arens to Colombia this past January to search K/T boundary outcrops. Despite the fact that they were looking for plants, Greg managed to recover a few vertebrate scraps that suggests more work is in order. Greg is also working on a phylogenetic analysis of periptychids for the Denver meeting and a

study of southern continents palynofloral biogeography for the Mesozoic Terrestrial Ecosystems meeting in Argentina.

John R. Hutchinson has returned to Berkeley from a semester at Brown University with Dr. Steve Gatesy, and is finishing up two thesis chapters on the evolution of archosaur pelvis and thigh muscles on the line to birds. His computer biomechanical analyses of *Tyrannosaurus rex* hind-limb mechanics are starting to produce some interesting results that he will discuss at Denver's SVP. He is also working on collaborations with Steve Gatesy (thigh muscle functional evolution in archosaurs) and Rodger Kram (elephant kinematics and energetics). He is planning museum research trips to Argentina and Canada this summer as well, funded by the Jurassic Foundation and Sigma Xi.

Tom Stidham reports that the controversy sparked by his November 5, 1998, *Nature* report of a Cretaceous parrot continues. Look in upcoming *Nature* correspondence for his response. When he isn't in the Museum of Vertebrate Zoology measuring hundreds of waterfowl leg bones in his exploration of morphological correlates of wading behavior that he will use to explore paleoguilds in wading birds, he has been describing new records of Cretaceous birds and pterosaurs from the Cretaceous Chico Formation with colleagues from Sierra College to appear in an upcoming issue of *California Geology*, and continues his collaborations with Anjay Elzanowski and Sylvia Hope on Western Interior Cretaceous birds. A study of North American alvarezsaurids with Howard Hutchison is on tap for the Mesozoic Terrestrial Ecosystems conference in Argentina.

Howard Hutchison is pleased that his paper with Robert Weems on Paleocene turtles from South Carolina has finally appeared, and continues work on numerous collaborative projects ranging from Cretaceous caimans with Chris Brochu to *Pachyrhinolophus* from the North Slope of Alaska with Clemens and Goodwin. He also sends us regular e-mail reports of new finds from the Turonian through Campanian deposits in the Grand Staircase-Escalante National Monument.

Pat Holroyd is looking forward to several projects coming off her desk, including the September publication of her Fayum pterodontine hyaenodontids in *PaleoBios*. Pat and Howard Hutchison are finishing up several papers on turtle diversity and abundance through the latest Cretaceous and early Paleogene, and she and Russ Ciochon (University of Iowa) are polishing off manuscripts on Chinese anthracotheres and mammals from Myanmar. The next few months will be consumed with the acquisition of collections from UCLA and incorporating these into the UCMP. Pat is also looking forward to imminent WWW access to the entire VP database after a significant gift to UCMP of software drivers from Borland which have made it possible for Brian Simison to develop a user-friendly interface.

Mark Goodwin and Jack Horner are nearing completion of their manuscript on the cranial histology and ontogeny of the frontoparietal dome North American pachycephalosaurs. A finite element analysis is underway with Greg Erickson, Dennis Carter, and students from Carter's lab at Stanford. This biomechanical analysis will complement Horner and Goodwin's largely descriptive analysis of bone tissue in the pachycephalosaur skull and

hopefully reveal whether the structures observed confer a biomechanical advantage or not.

A multi-authored manuscript on the latest Jurassic fauna from Ethiopia by Mark Goodwin and Bill Clemens should be in press soon at *JVP* - notable are new records of theropod and hypsilophodontid teeth, crocs, turtles, sharks, dipnoans, and osteichthyans. Mammals remain elusive but the Ethiopia crew is optimistic, with additional sediment samples being processed for microvertebrates. A new temnospondyl amphibian from Tigray Province, Ethiopia, the first record from the Horn of Africa, was described in *Neus Jahrbuch für Geologie und Paläontologie Monat.* in November by Anne Warren, Adam Yates, Ross Damiani (La Trobe University), Goodwin, C. B. Wood (Providence College), and C. Schaff (Harvard). As soon as hostilities between Eritrea and Ethiopia subside, the crew hopes to return to Ethiopia and continue their field research. A note on the first record of an Eocene marine mammal from Israel, a caudal vertebra of cetacean or sirenian affinity, was described in December's *JVP* by D. Domning (Howard University), C. Benjamini (University of Negev), Goodwin, and J. Lipps (UCMP). Goodwin has been invited by Eitan Tchernov and colleagues to return to Israel and more material has been noted in the field.

Mark Goodwin continues to make progress on the remarkably well-preserved and smallest skull of *Triceratops*, found by Harley Garbani, in the Hell Creek Formation of eastern Montana and hopes to have the manuscript with J. Horner and Bill Clemens submitted shortly. Mark is beginning work on the North Slope dinosaur fauna collected by the UCMP and the University of Alaska Museum, concentrating on describing the cranial morphology and histology of this polar assemblage of hadrosaurs.

The prep lab is busy - Jane Mason is working on a variety of projects, including new Upper Cretaceous birds from the Chico Formation of northern California, an articulated phytosaur from the Chinle of Arizona, Bridger tortises with Jim Parham, *Coryphodon* and assorted Tertiary mammals, and molding and casting projects. UCMP is interested in reestablishing its open-exchange policy with sister institutions, so get in touch. Jane supervises a number of undergraduate volunteers. Undergraduate Museum Preparator Larisa Grawe is removing the type specimen of *Hydrotherosaurus alexandrae* from plaster blocks in which the original was mounted when on exhibit several decades ago. Nearly half of the skeleton is now freed from the plaster. Larisa is also making progress on preparing a disarticulated skull of a juvenile *Triceratops*. Alexis Harper, an undergraduate student from Santa Cruz, completed an internship in the Museum of Paleontology working primarily in the prep lab on *Triceratops* and processing microvertebrate fossils from the Upper Jurassic Mugher Mudstone, Ethiopia. We're pleased she is continuing in the prep lab as a volunteer. An associated mammoth skeleton, uncovered during the construction of the National Ignition Facility, Lawrence Livermore National Laboratory, was identified by UCMP last December. Final preparation is nearly completed under contract by C. Bruce Hanson. The partial skull, lower jaws, humerus, ribs, and tusks make this one of the most complete mammoths from the Livermore gravels. UCMP appreciates the support of and partnership with the Lawrence Livermore National Laboratory to conserve the specimen.

Finally, Diane Erwin, UCMP paleobotanist and *PaleoBios* editor, reports that the new quarterly (rather than occasional) publication schedule and improved digital-printing process for *PaleoBios* is a real success. We encourage our colleagues to check out the new look and consider it as an outlet for your next manuscript. (Pat Holroyd, Bill Clemens, Kevin Padian, Tony Barnosky, and Mark Goodwin)

- **Bulletin Board** □

JURASSIC FOUNDATION

The Jurassic Foundation has made its first set of grants to paleontologists for dinosaur research. Twenty-four awards were made, totalling \$44,000. An additional \$56,000 has been set aside to inaugurate a foundation endowment.

The second and last 1999 deadline for submission of applications to the Jurassic Foundation for dinosaur research funding is September 15, 1999. Approximately \$50,000 will be available for research funding.

The Jurassic Foundation is a new non-profit organization operating without overhead expenses and devoted to funding dinosaur paleontology through small cash grants to individual researchers, also without overhead charges. Funds received by Universal Studios and Amblin Entertainment from the showing of the Dinosaurs of Jurassic Park/Lost World Exhibit in natural history museums are the principal source of funds for the charity. Student and foreign applications for amounts totalling less than \$3,000 are especially encouraged. Applications are voted upon by a committee of professional paleontologists, chaired by current Foundation President, Dr. Philip Currie. Inquire of Dr. Currie for applications and further information: Philip J. Currie, Royal Tyrrell Museum of Palaeontology, P. O. Box 7500, Drumheller, AB T0J 0Y0, Canada; pcurrie@dns.magtech.ab.ca.

MESOZOIC MAMMALS

We are in the process of writing a new book on Mesozoic mammals, to be published by Columbia University Press. The book will include detailed treatment of distributions, systematics, and biology of Mesozoic mammals, with diagnoses and illustrations of all genera. As we wish the book to be as comprehensive and up-to-date as possible, we would very much appreciate any information on forthcoming publications that would be relevant to the book, to include copies of items recently published or in press. We expect to stop adding references around September 2000. We thank the VP community, in advance, for your help. (Zofia Kielan-Jaworowska [zkielan@twarda.pan.pl]; Richard L. Cifelli [rlc@ou.edu]; Zhexi Luo [luoz@clpgh.edu])

***FOSSILIUM CATALOGUS I: ANIMALIA* - New Editorial Board, New Publishers**

Prof. Dr. Frank Westphal (Tübingen, Germany) has been editor of the *Fossilium Catalogus I: Animalia* since 1961. This journal was at that time published by W. Junk bv

at The Hague, The Netherlands. After Werner Quenstedt passed away, Dr. Westphal succeeded him as editor and continued his editorial work for 39 years. He edited volumes 99–136 (1961–1999). One of the most famous volumes of this period is Pars 102 – *Clavis bibliographica*, a posthumous work of W. Quenstedt, dealing with several famous paleontological monographs of the 19th century. The publication dates of these monographs are given very precisely with all bibliographic details. After the release of Pars 136 on Triassic reptiles in March 1999, Dr. Westphal expressed the wish to step down as editor and, in consultation with him, the publishers appointed Dr. W. Riegraf as his successor.

Backhuys Publishers are sincerely thankful for Frank Westphal's long editorial effort and hope that he will now enjoy his retirement as emeritus.

Frank Westphal was born at Berlin in 1930. He studied geology, paleontology, and zoology at the universities of Berlin and Freiburg i. Br. With a thesis on a vertebrate paleontological theme he attained his doctoral degree in 1956. In 1957 he became scientific assistant at the Geologisch-Paläontologisches Institut, Tübingen University, southwest Germany, where he was appointed lecturer in 1961. From 1972 until his retirement Dr. Westphal was professor of geology and paleontology at the same university. During these years he took over various administrative duties in the institute beyond his scientific work, e.g., in the library, museum collections, and also was co-editor of the *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen/Monatshefte* (Stuttgart). He published on various Triassic and Jurassic reptiles, Tertiary amphibians, and – Fossilagerstätten – (fossil bonanzas) like the Lower Toarcian Posidonienschiefer Formation of Holzmaden or the Miocene Randecker Maar.

In 1998 the *Fossilium Catalogus I: Animalia* changed from Kugler Publishers (Amsterdam) to Backhuys Publishers (Leiden). At this time a new cover for this periodical was introduced.

Scientists who are interested in submitting paleontological manuscripts to the *Fossilium Catalogus I: Animalia* are requested to contact the new editor and should enclose specimens of their text and of the letter size they want to use. Address of the editor: Dr. Wolfgang Riegraf, Brüggfeldweg 31, D-48161 Münster, Germany.

- Publications –

TIMING OF EARLY VERTEBRATE EVOLUTION - RESULTS OF IGCP 328: PALAEOZOIC MICROVERTEBRATES PROJECT (1991–1996) Alain Blicck and Susan Turner, eds.

This short contribution presents to the readers of the *SVP News Bulletin* the general frame of results which have been obtained during the six years of IGCP 328: Palaeozoic Microvertebrate Biochronology and Global Marine/Non-Marine Correlation (1991–1996). These results will be fully published in a special issue of *Courier Forschungs-Institut Senckenberg* (Frankfurt am Main, FRG) before the end of 1999. The

volume will comprise about 500 pages, 140 text-figs., 29 tables, 37 black-and-white photographic plates, 50 authors, 25 papers.

Readers will find here below the list of papers which have been presented to the volume. Any interested reader may make contact with one or another of the co-editors of the volume whose publication will be advertised in the following months; or with the editor of *CFS*: Dr. P. Königshof, Forschungs-Institut Senckenberg, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany; pkoenigs@sng.uni-frankfurt.de.

Blieck, A. and Turner, S.: IGCP 328: Palaeozoic Microvertebrates final scientific report - Introduction. - includ. list of referees and IGCP 328 final publication list 1991-1997.

EARLY PALAEOZOIC

Talimaa, V. N.: Significance of thelodonts (Agnatha) in correlation of the uppermost Ordovician to Lower Devonian of the northern part of Eurasia.

Märss, T.: Silurian vertebrate studies during 1990-1996.

Turner, S.: New Llandovery to early Pridoli microvertebrates including Early Silurian zone fossil, *Loganellia avonia* nov. sp., from Britain.

Soehn, K.L., Märss, T., Hanke, G.F., and Wilson, M.V.H.: Preliminary vertebrate biostratigraphy of the Avalanche Lake sections (Wenlock, Silurian), southern Mackenzie Mountains, N.W.T., and review of northwestern Canadian vertebrate localities of Silurian age.

Blom, H.: Silurian vertebrates from North Greenland.

Zhu Min and Wang Jun-qing: Silurian vertebrate assemblages of China.

Burrow, C. J., and Turner, S.: Silurian vertebrates from Australia.

Vergoossen, J. M. J.: Acanthodian and chondrichthyan microremains in the Siluro-Devonian of the Welsh Borderland, Great Britain, and their biostratigraphical potential.

Basden, A., Burrow, C., Hocking, M., Parkes, R., and Young, G.: Siluro-Devonian microvertebrates from southeastern Australia.

DEVONIAN: OLD RED SANDSTONE CONTINENT

Blieck, A., Cloutier, R., with contributions of Elliott, D. K., Goujet, D., Loboziak, S., Reed, R. C., Rodina, O., Steemans, P., Valiukevicius, J. J., Vyshkova, L., Yolkin, E. A., and Young, V. T.: Biostratigraphical correlations of Early Devonian vertebrate assemblages of the Old Red Sandstone Continent.

Valiukevicius, J. J., and Kruczek, S.: Acanthodian biostratigraphy and interregional correlations of the Devonian of the Baltic States, Belarus, Ukraine, and Russia.

Elliott, D. K., Johnson, H. G., Cloutier, R., Carr, R. K., and Daeschler, E. B.: Middle and Late Devonian vertebrates of the western Old Red Sandstone Continent.

Mark-Kurik, E.: The Middle Devonian fishes of the Baltic States (Estonia, Latvia) and Belarus.

Ginter, M., and Ivanov, A.: Stratigraphic distribution of chondrichthyans in the Middle and Upper Devonian of the East European Platform margin.

Esin, D., Ginter, M., Ivanov, A., Lebedev, O., Luksevics, E., Avkhimovich, V., Golubtsov, V., and Petukhova, L.: Vertebrate correlation of the Upper Devonian and Lower Carboniferous on the East European Platform.

DEVONIAN: CHINA

Zhu Min, Wang Nian-zhong, and Wang Jun-qing: Devonian macro- and microvertebrate assemblages of China.

Zhu Min: Catalogue of Devonian vertebrates in China, with notes on bio-events.

Burrow, C. J., Turner, S., and Wang Shi-tao: Devonian microvertebrates from Longmenshan, Sichuan, China: Taxonomic assessment.

DEVONIAN: GONDWANA

Young, G. C., and Turner, S.: Devonian microvertebrates and marine-nonmarine correlation in East Gondwana: Overview.

Long, J. A., and Trinjastic, K. M.: An overview of the Devonian microvertebrate faunas of Western Australia.

Turner, S., Basden, A., and Burrow, C. J.: Devonian vertebrates of Queensland.

Jones, R. K., Turner, S., and Fordham, B. G.: Late Devonian fauna from the Columbine Sandstone (Coffee Hill Member), Gap Creek, central New South Wales.

CARBONIFEROUS AND PERMIAN

Schneider, J. W., Hampe, O., and Soler-Gijon, R.: The Late Carboniferous and Permian: Aquatic vertebrate zonation in southern Spain and German basins.

Zajic, J.: Vertebrate zonation of the non-marine Upper Carboniferous–Lower Permian basins of the Czech Republic.

NEW JOURNAL

We are pleased to announce that the first volume of *Oryctos* (□fossil□ in Greek) is now available. *Oryctos* is a new independent European journal of vertebrate paleontology, published by a nonprofit organization. This new journal can exist only if enough vertebrate palaeontologists subscribe to it and encourage their colleagues and libraries to subscribe. We plan to maintain a low price (200 FF or 30.5 Euros per volume) and even a lower one if there are enough subscribers.

This message is also a call for manuscripts: *Oryctos* will cover the whole field of vertebrate paleontology. The submission of descriptive anatomical works is especially encouraged. Osteological works on extant vertebrates can be submitted if they are of interest to paleontologists. Both short notes and longer papers are welcome. Manuscripts are refereed by two reviewers. There are no page charges and authors receive 50 free reprints.

Oryctos can exist only with the support of our whole community, and we thank you in anticipation for your subscription and/or submission of manuscripts. Order form, summary of volume 1 (see below) and instructions to authors are available at: <http://perso.wanadoo.fr/musee.dinosaures/oryctos/>.

Oryctos

Editorial Director: Dr. Jean Le Loeuff (Espéraza); Editor in Chief: Dr. Lionel Cavin (Espéraza); Advisory Board: Pr. Michel Bilotte (Toulouse), Dr. Eric Buffetaut (Paris), Dr. Angela Buscalioni (Madrid), Dr. Eugene Gaffney (New York), Dr. Ella Hoch (Copenhagen), Pr. Christian Meyer (Basel), Mr. Varavudh Suteethorn (Bangkok), Dr. Haiyan Tong (Paris), Dr. David Ward (Orpington). Editorial Office: Musée des Dinosaures, 11260 Espéraza, France.

Oryctos, volume 1, 1998

Sommaire

Primitive neoselachian sharks: A survey [Une revue des néosélaciens primitifs]. Gilles Cuny

The Upper Jurassic species of *Furo* (Pisces, Halecomorphi) [Les espèces de *Furo* (Pisces, Halecomorphi) du Jurassique supérieur]. Paul M. Lambers

A semionotid fish from the Crato Formation (Aptian, Lower Cretaceous) of Brazil: Palaeoecological implications [Un poisson semionotidé de la Formation Crato (Aptien, Crétacé inférieur) du Brésil: Implications paléoécologiques]. Paulo M. Brito, David M. Martill, et Sylvie Wenz

Pleurodiran turtles from the Middle Eocene of Saint-Papoul (Aude, southern France)
[Tortues pleurodires de l'Eocène moyen de Saint-Papoul (Aude, France)]. Haiyan Tong

Preliminary observations on the stratigraphic distribution of Late Cretaceous marine and terrestrial reptiles from the Maastrichtian type area (SE Netherlands, NE Belgium)
[Observations préliminaires sur la répartition stratigraphique des reptiles terrestres et marins du Crétacé supérieur de la région de Maastricht (SE Pays-Bas, NE Belgique)].
Eric W. A. Mulder, John W. M. Jagt, Marcel M. M. Kuypers, Hans H. G. Peeters, et Peggy Rompen

Diversité des crocodiliens du Crétacé supérieur et du Paléogène. Influences et limites de la crise Maastrichtien-Paléocène et des Terminal Eocene Events [Crocodilian diversity during the Upper Cretaceous and Paleogene. Maastrichtian-Paleocene crisis and Terminal Eocene Events: Influences and limits]. Denis Vasse et Stéphane Hua

A new pterosaur Lagerstätte in N.E. Brazil (Crato Formation; Aptian, Lower Cretaceous): Preliminary observations [Un nouveau Lagerstätte à ptérosaures au nord-est du Brésil (Formation Crato; Aptien, Crétacé inférieur): Observations préliminaires]. David M. Martill et Eberhard Frey

Small theropods from the Late Cretaceous of the Hateg Basin (western Romania) - An unexpected diversity at the top of the food chain [Les petits théropodes du Bassin du Hateg (Crétacé supérieur, Roumanie occidentale) - Une diversité inattendue au sommet de la chaîne alimentaire]. Zoltan Csiki et Dan Grigorescu

A new dromaeosaurid theropod from the Upper Cretaceous of southern France [Un nouveau théropode dromaeosauridé du Crétacé supérieur du Sud de la France]. Jean Le Loeuff et Eric Buffetaut

Not cranes or masts, but beams. The biomechanics of sauropod necks [Ni grues ni mâts, mais timons. Biomécanique des cous de sauropodes]. John Martin, Valérie Martin-Rolland et Eberhard (Dino) Frey

First data on the hadrosaurid dinosaurs from the Upper Cretaceous of Valencia, Spain. Premières données sur les dinosaures hadrosauridés du Crétacé supérieur de Valencia (Espagne)]. Julio Company, Angel Galobart, et Rodrigo Gaete

Notes on the morphology and the orientation of the forelimb of *Ouranosaurus nigeriensis* [Notes sur la morphologie et l'orientation du membre antérieur d'*Ouranosaurus nigeriensis*]. Mette Elstrup Rasmussen

First evidence of enantiornithine birds from the Upper Cretaceous of Europe: Postcranial bones from Cruzy (Hérault, France) [Premiers restes d'enantiornithes (Aves) du Crétacé supérieur d'Europe: Ossements post-crâniens de Cruzy (Hérault, France)]. Eric Buffetaut

Reproduction de perles circulaires en coquilles d'oeufs de dinosaures. Paulette Pauc

- **Positions Available** □

SENIOR PALEONTOLOGICAL PREPARATOR POSITION

The Natural History Museum of the Los Angeles County announces an opening for a senior paleontological preparator. The successful candidate will undertake and supervise the collection, preparation, stabilization, molding, casting, and restoration of fossils for curation and scientific study. He/she is expected to participate in national and international paleontological expeditions, as well as in the training and supervision of other preparators and volunteers. The appointee must be able to maintain preparation laboratory equipment and manage the inventory of necessary laboratory supplies, chemicals, and tools.

Requirements include at least three years of experience in the collection and preparation of fossils, preferentially with completion of college courses in geology, biology, or relevant technical arts or fine arts. Must demonstrate knowledge of comparative anatomy and taxonomy, geological field operations, casting and molding techniques, and standard museum conservation and curation practices. Excellent oral and written English skills and ability to operate manual transmission, four-wheel-drive vehicles are also required.

Salary is commensurate with experience and qualifications, initially ranging up to \$34,000 p.a. The position starts on July 1, 1999. Applications should be mailed to: Search Committee, Vertebrate Paleontology, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007.

The Natural History Museum of the Los Angeles County is an Equal Opportunity/Equal Access/Affirmative Action Institution which has a commitment to cultural, racial, and ethnic communities and encourages women and minorities to apply.

- **Obituaries** □

DON SAVAGE, 1917□1999

Paleontologist Donald Elvin Savage, 81, a world-renowned expert on the origins of mammals, in particular the evolution of anthropoid apes, died Monday, April. 5, of pancreatic cancer. He moved from his home in Clayton, California, to a hospice in Rossmoor, California, shortly before he died.

Savage, professor emeritus of paleontology at the University of California, Berkeley, and former director of the campus □ Museum of Paleontology, spent much of his life correlating mammal fossils with specific geologic formations, a field known as biostratigraphy.

Before radioisotope dating became reliable and accessible, the principal way of dating fossils was to correlate a find with a suite of fossils known from other areas that geologists had been able to date. Even today, with fossils found in sediments that are not easily dated, the most reliable method is often this sort of correlation.

Savage traveled the world in search of mammalian fossils, at various times in his career concentrating on horses, rhinos, and the early apes. His book, □Mammalian Paleofaunas of the World□ (1983), written with Donald E. Russell, was a compendium of mammals through the ages. At the time of his death he was completing a second book on paleofaunas with retired UC Berkeley research paleontologist J. Howard Hutchison.

He also was an authority on Bay Area fossils and was fond of sharing his knowledge with students, scientists, and the local community.

One of Savage□s key finds, made with student Russell Ciochon in Burma in 1978, was a primate jaw that today remains one of the earliest known fossils of higher primates. Dated at 40 to 44 million years ago, it came from the Eocene, an era in which mammals proliferated and primate species abounded.

□This fossil was the earliest step towards humans,□ said Ciochon, now chair of anthropology at the University of Iowa, Iowa City. □This discovery set up Burma and Southeast Asia as a pivotal center of primate evolution and helped get more people interested in Asia, in addition to Africa and Europe.□

Though the door to Burma was soon shut, that success helped Savage and Ciochon gain entry to China in 1983. They became one of the first scientific teams allowed access after the Cultural Revolution.

Part of Savage□s success lay in the fact that □he was a very good fossil collector,□ said Ciochon. In the early 1960s, on a trip to Egypt with Elwyn Simons of Duke University, he immediately picked up a jaw that for decades remained the earliest known anthropoid fossil from Africa, a 35-million-year-old ape that bears his name: *Oligopithecus savagei*.

□He was a wonderful man,□ Ciochon said. □He was the person that first taught me about primate paleontology, the one who got me interested in primate evolution, and I owe him a lot.□

Savage was born in Floydada, Texas, May 28, 1917, and was scouring the Texas panhandle for vertebrate fossils by his late teens. He received his BS from West Texas State University in 1937 and his MS from the University of Oklahoma in 1939, then served a six-year stint in the U.S. Air Force.

In 1946 he came to UC Berkeley as a graduate student and served as an instructor in the paleontology department until 1949, when he obtained his PhD and joined the faculty. He also was appointed curator of mammals in the museum, a post he held until his retirement in 1987.

Savage served as chair of the Department of Paleontology from 1966 to 1975, and in 1967 was appointed acting director of the museum. He was director from 1970–1971. During these years he helped expand the museum collections to include plant and invertebrate fossils as well as vertebrates. Today the Museum of Paleontology is one of the largest in the U.S. and a resource for scientists around the world.

He also was an early supporter of the museum's public outreach and exhibits programs, and was often asked to speak on all aspects of Bay Area geology and paleontology.

Savage is survived by his wife Than Myint Savage of Clayton, California, and five children from his first marriage: Suzanne Savage of Oakland, California; Sheryl Long of Gainesville, Florida; Brandon of San Luis Obispo, California; Michael of Santa Monica, California; and Stephanie Edsell of Eugene, Oregon.

A memorial service was held at the Strawberry Canyon Club House at UC Berkeley on Wednesday, April 14, at 6 p.m. (Bob Sanders)

The Society of Vertebrate Paleontology

By-Law on Ethics

Article 9. Statement of Ethics.

Several goals for the Society of Vertebrate Paleontology follow from its mission statement (Constitution Article 1): to discover, conserve, and protect vertebrate fossils and to foster the scientific, educational, and personal appreciation and understanding of them by amateur, student and professional paleontologists, as well as the general public. Fossil vertebrates are usually unique or rare, nonrenewable scientific and educational resources that, along with their accompanying contextual data, constitute part of our natural heritage. They provide data by which the history of vertebrate life on earth may be reconstructed and are one of the primary means of studying evolutionary patterns and processes as well as environmental change.

- . It is the responsibility of vertebrate paleontologists to strive to ensure that vertebrate fossils are collected in a professional manner, which includes the detailed recording of pertinent contextual data (e.g., geographic, stratigraphic, sedimentologic, taphonomic).
- . It is the responsibility of vertebrate paleontologists to assist government agencies in the development of management policies and regulations pertinent to the collection of vertebrate fossils, and to comply with those policies and regulations during and after collection. Necessary permits on all lands administered by federal, state, and local governments, whether domestic or foreign, must be obtained from the appropriate agency(ies) before fossil vertebrates are collected. Collecting fossils on private lands must only be done with the landowner's consent.

- . Fossil vertebrate specimens should be prepared by, or under the supervision of, trained personnel.
- . Scientifically significant fossil vertebrate specimens, along with ancillary data, should be curated and accessioned in the collections of repositories charged in perpetuity with conserving fossil vertebrates for scientific study and education (e.g., accredited museums, universities, colleges, and other educational institutions).
- . Information about vertebrate fossils and their accompanying data should be disseminated expeditiously to both scientific community and interested general public.
- . The barter, sale, or purchase of scientifically significant vertebrate fossils is not condoned unless it brings them into, or keeps them within, a public trust. Any other trade or commerce in scientifically significant vertebrate fossils is inconsistent with the foregoing, in that it deprives both the public and professionals of important specimens, which are part of our natural heritage. □

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