**SOCIETY OF AVIAN PALEONTOLOGY AND EVOLUTION**

**INFORMATION LETTER**

**n. 2. November 1988**

The second International Symposium of the Society of Avian Paleontology and evolution was held in Los Angeles from 28 to 30 September 1988. It was a great success and all the SAPE members thank Ken CAMPBELL very much for having organized it. They also express their deepest thanks to Dr. Craig C. BLACK. Director of the Natural History Museum of Los Angeles County for making it possible for this symposium to be held and for his generous help.
The third meeting will be organized in 1992. in Frankfurt. R.F.A. by Stephan PETERS. at the Senckenberg Institute. and the fourth one in 1996, by Storrs OLSON. at the Smithsonian Institution. in Washington D.C., U.S.A.

The following communications were presented during the Symposium:

Buhler, Paul: On the origin of lightweight structures in the avian skeleton.

Storer, Robert W. : Intraspecific variation and the identification of Pleistocene grebes.

Hayward, Richard: Avian taphonomy, a new window on the past.

Hertel, Fritz: Morphological diversity within the fossil and recent vulture guild.

Benson, Richard: Extinction of accipitrid vultures in the late Pleistocene of North America.

Karkhu, Alexandr : A morphological divergence within the order Apodiformes.

Steadman, David: Extinction and biogeography of Polynesian birds.

Becker, Jonathan : Fossil birds from Aldabra Atoll. Republic of Seychelles.

Guthrie, Daniel: Pleistocene avifauna from San Miguel Island.

Kennedy, George. D. R. Mush. and H. W. Thomas : A new late Pleistocene puffin (Aves: Alcidae) from San Nicolas Island, California: geologic and paleoenvironnmental considerations.

Warter, Stu : Wing reduction in the extinct eider-like duck *Chendytes*.

Parmalee, Paul: A late Pleistocene avifauna from northwestern Alabama.

Northcote, Marjorie : Swans (*Cygnus*) and cranes (*Grus*) from the Maltese Pleistocene.

Alcover, J.A., F. Florit, C. Mourer-Chauviré. and P. Weesie : The Avifauna of the Mediterranean Islands during the Middle and Upper Pleistocene.

Padian, Kevin : The status of *Palaeopteryx* (Upper Jurassic ? Morrison Formation. Western Colorado.

Mikhailov, Konstantin: Microstructure of avian and dinosaurian eggshell: phylogenetic implications.

Wellnhofer, Peter: A new specimen of *Archaeopteryx* from the Solnhofen limestone.

Ostrom, John: Comments on the new specimen of *Archaeopteryx*.

Peters, D. S. : Ecological inferences from morphology: the claws of *Archaeopteryx*.

Sanz, J. L. and J. F. Bonaparte : *Iberomesornis romerali*, a small articulated fossil bird from the Early Cretaceous of Spain.

Alvarenga, Herculano and J. F. Bonaparte: A new flightless land bird from the Cretaceous of Patagonia.

Witmer, Lawrence: Aspects of the braincase morphology of the Cretaceous bird Hesperornis.

Stewart, J.D. : A new specimen of *Ichthyornis*, and its implications for interpreting relationships of the group.

Martin, Larry : Status of the giant late Paleocene birds *Gastornis* and *Remiornis*.

Mourer-Chauvire, Cecile : The Galliformes (Aves) of the Phosphorites du Quercy (France).

Peters, D.S. : A new owl from Messel.

Hesse, Angelika : *Messelornis nearctica* - a new taxon of the Messelornithidae (Aves: Gruiformes, Rhynocheti).

Andors, Allison: Morphology and affinities of *Diatryma*.

Crowe, Tim and L. L. Short: Taxonomic status and phylogenetic affinities of an Oligocene fossil humerus from Nebraska. U.S.A.

Fordyce, R. Ewan and Craig Jones: Paleogene penguins from New Zealand.

Olson, Storrs : A new family of basal landbirds, apparently the most primitive of the Neognathae, from the early Eocene Green River Formation of Wyoming.

Houde, Peter: New taxa from the early Eocene of Wyoming.

Baez, Marcos : Zoogeography and evolution of the avifauna of the Canary Islands.

Crowe, Tim : Morphometrics, taxonomic status and phylogenetic relationships of Miocene and Pliocene fossil phasianids from the west coast of southern Africa.

Boles, Walter: A cassowary-emu mosaic from the Miocene of Australia.

Rasmussen, Tab : A Miocene anhinga from Colombia.

Matthiesen, Diana: Fossil storks (Ciconiidae) from Olduvai Gorge (Tanzania: early Pleistocene) and Omo (Ethiopia: Pliocene).

Brodkorb, Pierce : Fossil grebes from Olduvai Gorge, Tanzania.

Emslie, Steve : Two new late Pliocene (Blancan) avifaunas from Florida.

Baird, Robert : *Palaelodus* (Aves: Palaelodidae) from the late Cenozoic of Australia.

Cheneval, Jacques and Francois Escuillé : New data concerning *Palaelodus ambiguus* (Aves: Phoenicopteriformes,

Palaelodidae) : Ecological and Evolutionary consequences.

Warheit, Kenneth I. : New fossil sulids (Pelecaniformes: Sulidae) from California: the use of statistical influences.

Zusi, Richard and Kenneth I. Warheit : Evolution of the intermandibular joint of Pseudodontorns.

Campbell, Ken and Les Marcus: Hindlimb motion. long-bone circumference and body weights of birds.

Poster Presentations:

Boev, Zlatozar : Past and present state or paleornithological studies in Bulgaria.

Cutler-Shaw, Joyce: Alphabet or Bones: An illustration.

Fordyce, R. Ewan and Craig Jones: Some pre-quaternary birds from New Zealand.

Warter, Stuart and Julia Nagata : Reconstructions of *Chendytes*.

A CALL FOR INFORMATION

Robert F. Baird is preparing a manuscript on the Cockatoos in the fossil record. As introduction to this he is trying to summarize the literature on the fossil Psittaciformes for both the Tertiary and the Quaternary of the world. Therefore he would appreciate any information regarding both recently published and unpublished records or this order. Thank you for your help.

## NEWS FROM THE MEMBERS

### ARGENTINA

Luis M. Chiappe. Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" of Buenos Aires, is studying a Cretaceous land bird from the Neuquen Province (Northwestern Patagonia) or Argentina. Comparative osteology .phylogenetic and paleobiogeographic implications of this bird are the subjects of his doctoral thesis. This material includes one almost complete and articulated skeleton. another skeleton less complete. one hind limb, and some isolated bones that would be referred to the same bird. Recently H. Alvarenga and J. F. Bonaparte described one or the skeletons (the less complete) ; this paper will be published soon. At this moment L. M. Chiappe is preparing the only skull preserved: his project is to finish during this year the preparation of all the material and describe the skull (not described by Alvarenga and Bonaparte). This is a very exciting discovery that indicates that during the Cretaceous very peculiar groups or birds, the cursorial bird above mentioned and the flying Enantiornithes. Lived in South America.

### AUSTRALIA

The recent activities of R. E. Molnar include work on Australian and New Zealand pterosaurs. and the taphonomy of the Lower Cretaceous faunas in Australia. Work is contemplated on a humerus and some partial skulls with natural endocasts which appear to be avian. from the Upper Cretaceous of New Zealand. This work is to be conducted jointly with Mrs J. Wirren of Hawkes Bay. New Zealand. who has discovered and prepared the material. While the material shows some avian features. it is not closely comparable to anything described in the literature. hence work is proceeding slowly. In addition the material itself is rather fragmentary.

The Pat Rich's work. over the past year has been the following :

1. To complete the work with Bob Baird (senior author of the paper) on the Australian Palaelodids. This paper is

submitted to the SAPE conference in Los Angeles. They range from the Miocene to the Pleistocene.

2. To complete the work on the fossil history of emus.

3. To complete the work on the Plio-Pleistocene record of flamingoes in Australia -a major reevaluation of the names used by De Vis (this together with G. F. Van Tets. A. R. Mc Evey, and T. H. Rich).

4. To see the completion of preparation of a partial dromornithid skulls from the Miocene of Bullock Creek. N. T.

5. A considerable part or her attention is now directed towards the high latitude dinosaur bearing sites in the Early Cretaceous rocks of Southern Victoria. Although a variety of different vertebrates have been round (including fish. labyrinthodonts. fresh water plesiosaurs. pterosaurs. lizards. plus at least 2 theropods. and 3-5 hypsilophodonts) no birds or mammals yet. 5 bird feathers are known from one site (Koonwarra) in this sequence. but no taxonomic assignment beyond AVES has been possible.

6. Pat is also working on the mummified head or *Megalapteryx didinus* (myology, palaeoimmunology. description of stapes, reconstruction). This work is nearing completion. The second edition of the Fossil Vertebrate Record of Australasia. now to be called "The Vertebrate Paleontology of Australasia" is due out in 1989. This time it will be published by Chapman and Hay (and Thomas Nelson in Australia). Two chapters will deal with the Australian avian record. another one. with the New Zealand record. and a fourth one with the Pacific Basin record.

Robert F. Baird has finished his thesis entitled "The Avian Portions of the Quaternary Cave Deposits of Southern Australia and their Biogeographical and Paleoenvironmental Interpretations." He is currently preparing parts of this thesis for publication and working with Pat Rich on the Palaelodids. He is also working on the fossil record of Cockatoos.

Shane Parter. from the South Australian Museum. has described. in 1984. the extinct dwarf emu from Kangaroo Island as *Dromaius baudinianus*. a species distinct from the King Island form. D. ater. He continues to study the nomenclature and taxonomy of these small emus. but at the moment. his further investigations await the publication of a paper on the same subject by his colleagues Drs. Christian Jouanin and Jean Christophe Balouet. from Paris.

**BRAZIL**

Herculane Alvarenga described one more bird from the Taubate Basin. It is a partial postcranial skeleton of a rail. with prints or feathers and a stomach content with several little stones. This bird is named *Taubacrex granivora* and is going to be published in the An. Acad. Brasil. Cienc., vol. 60 (3) 1988.
Two technicians from Argentina. Pablo Puerta and Raul Vacca, are in Taubate to do casts of the gigantic Phorusrhacid *Physornis brasiliensis*. H. Alvarenga is putting the final touches to the restoration of this bird and intend to make exchanges with the casts.
Castor Cartelli. from the Universidade Catolica of Belo Horizonte (Minas Gerais) collected a large number of gigantic mammals from caves in the Middle East of Brasil and. associated with giant sloths and ungulates. are about one thousand bones of birds. His student. Jose Enemir dos Santos took these bones to Taubate and intend to study them in collaboration with H. Alvarenga.

**BULGARIA**

Zlatozar N. Boev's interests are in the field of Quaternary birds and especially the formation and the development of the Holocene avifauna of the Balkan peninsula (paleornithological and ornithogeographical aspects). He is interested also in all the questions related to Paleornithology and bone morphology of birds. His post-graduate work was on the morphological comparison of the European Ardeid birds. in connection with their adaptation to the movement on the ground. flight and food-gathering. His papers are in press in the journal "Acta zoologica

bulgarica". All data on the paleontology of the family Ardeidae are especially interesting for him.
He has identified the bird remains coming from the archaeological deposits of the Inner and Outer Towns of Veliki Preslav (9-10th century). and of Tuida (Nr Sliven Town. 10-12th century).
A great deal of bird remains from the Roman Town of Nicopolis ad Istrum (Nr Town of Veliko Turnovo. 2-4th century) was also identified. The joint British-Bulgarian archaeological expedition will continue the excavations. and after identification of the newly discovered bird bones a publication will be done.
A distal humerus from the lower Pliocene of Rhodope Mountains was identified in the Paleontological institute of the Academy of Sciences of USSR. in Moscow. in collaboration with Dr. A. Karkhu. as a close relative of the capercaillie. It possibly belongs to a new genus. not very different from *Tetrao*. Another distal humerus from the same locality and age shows a great similarity with *Aix* and *Anas*. The study of these both findings is in process.
Zlatozar Boev is presently studying. in collaboration with Dr. N. Burchak-Abramovich. from Tbilisi, Georgian SSR. the skeleton of a Miocene bird from Bulgaria.
The Pleistocene bird remains collected till now will be determined during the next year .

**EAST GERMANY**

Karlheinz Fischer. from Berlin. has finished a manuscript honouring the 100th birthday of Erwin Stresemann: "Geschichte und Bedeutung der paläornithologischen Sammlung des Bereichs Paläontologie im Museum für Naturkunde zu Berlin", with an appendix: list of species and types of birds in the palaeontological collection. In the near future he will examine pelecaniform bones from the Middle Oligocene near Leipzig.

**FRANCE**

Cecile Mourer-Chauyire has engaged a long-term study of the Eocene and Oligocene birds of the "Phosphorites du Quercy". So far the following groups have been revised or described:
Archaeotrogonidae
Gruiformes : Cariamidae and Phorusrhacidae
Accipitriformes : Sagittariidae
Strigiformes
Coraciiformes : Todidae
Caprimulgiformes : Podargidae and Nyctibiidae
Apodiformes : Aegialornithidae.
Moreover. the avifauna of the Upper Eocene localities of Sainte Neboule and le Bretou has been described in the monographs devoted to these localities. The monograph of Le Bretou is going to be published in "Palaeontographica".
She has prepared. for the SAPE symposium in los Angeles. a revision of the Galliformes from the Quercy deposits. In this paper she describes two new families of primitive Galliformes. One of this new families includes small forms from the Eocene localities which are related to the recent Megapodiidae hut are more primitive. True Phasianidae appear only at the end of the lower Oligocene.
She intends to describe all the other groups. as quickly as possible. in the next few years.
Cecile Mourer-Chauvire is also extremely interested in extinct insular avifaunas. A revision of the Pleistocene avifaunas from the Mediterranean Islands has been prepared for the SAPE symposium in Los Angeles. in collaboration with Josep Antoni Alcover. Francisca Florit. and Peter Weesie. This revision concerns the islands of Sardinia, Corsica, Tavolara, Mallorca, Menorca, Eivissa, Malta, Crete, Karpathos, Armathia. and Tylos.
Another paper in collaboration with E. Marjorie Northcote. about the large extinct European crane, *Grus primigenia,* in Mallorca. has recently been published in "Geobios".
Together with Francois Moutou. she made a field trip in the Island of La Reunion. in the Mascarenes. with the hope of finding more remains of the endemic insular ibis of this island, *Borbonibis latipes*. But. unfortunately. they did not find any more material of that species. They found however some interesting bones of an extinct owl. an extinct falcon. an extinct parrot. And numerous remains of sea-birds. They also found some interesting new material of the extinct giant land tortoise. *Cvlindraspis borbonica*.
In some Pliocene and Lower Pleistocene French localities was described the large-sized junglefowl *Gallus*

*bravardi*. Actually this form does not correspond to a junglefowl but to a Peafowl. not very different morphologically nor dimensionally from the recent Green Peafowl. *Pavo cristatus*. The species *bravardi* must therefore be transferred to the recent genus *Pavo*. A paper about the Pliocene Peafowl from the locality of Serrat d'en Vacquer. at Perpignan. has been accepted for publication in "Palaeontology" .

**GREAT BRITAIN**

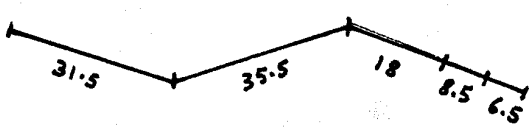
Cyril A. Walker has almost finished a paper on the Enantiornithes. which is going to be submitted. He is working on some Pliocene auks from Belgium. one as large as *Pinguinus*, but is not related to it. it appears very close to Aill. He is putting the finishing touches to a paper describing a new *Puffinus* shearwater from the Canaries. which has some bearing on the relationships of the various subspecies of the North Atlantic Manx Shearwater (*Puffinus p. puffinus*). At the same time he is slowly working through the material he has on loan from the Miocene of Kenya.

Marjorie Northcote. having written two papers with Cecile Mourer-Chauvire on the giant European crane *Grus primigenia* is completing the study to elucidate its structure. habits, relationships and distribution. Information is urgently required on the whereabouts of Mme E. Soergel's specimens of this crane. excavated from the Neolithic of Ehrenstein bei Ulm. Germany.

Michael Daniel has sent the following information about the fossil birds from the Lower Eocene of South East England :

The Naze promontory on the Essex coast, from which we obtain much avian material faces into the North Sea and has been affected by the prevalence of north to north east winds. Apart from bringing bad weather conditions to this area and discomfort to collectors. it tends also to cause the accumulation of sand. covering up the fossiliferous London Clay of the foreshore and cliff base. This has been largely the situation for some years now, thus counter to the supposed normality where. as many English children learn in their geography lessons, south-westerly winds should prevail and keep the weather reasonably mild even in winter. With this change therefore. one wonders if we here are experiencing just one further aspect of the most worrying climatic developments occurring world-wide. Despite this unfavourable state of affairs. it is clearly a measure of the brilliance of the Naze that even on days where conditions were decidedly unpromising, it has still been possible to make exceptional discoveries. During the period since I provided some insight about our collecting for the first S.A.P.E. newsletter, I have added about forty more specimens. Some of these are certainly of great scientific importance and in the following resume J attempt to briefly describe several that may be of particular interest to members.
Remains of birds having zygodactyl arrangement of the feet occur frequently and several more specimens were acquired. One leg and foot is apparently from an individual representative of an entirely new group, somewhat parrotlike. Another adds yet a further example to a range of birds that seem to have convincingly owllike characteristics. Several tarsi are so exquisitely preserved that nothing. except the curiosity of their form, is left to the imagination. One such. which came accompanied by part of the lower mandible. complete ulna and carpometacarpus, less so of leg bones. I provide illustration (Fig. 8. a-c). Compared to modern. and I know of nothing like it in the fossil record. I have a vague feeling for some connection with the primitive passerines. but that would be extremely speculative. I have several tars i in the collection similarly small and slender with varying degrees or zygodactylism, all enigmatic.
An interesting reoccurrence. albeit of cranial fragments and a vertebra. is worth mentioning. Previously I acquired more extensive remains and was at once intrigued by the form of several vertebrae. I drew others attention to this. but except for the view that the bird may have been immature. no other ideas were forthcoming. My illustrations (fig. 6. a-b). I trust will give some impression of the tiny "barbs" that are formed. primarily on the centra or the cervical vertebrae.
Additions were made to the waderlike material. This summer I obtained a specimen composed of pectoral and wing remains. I was only able to locate two fossils in the collection near to this bird in size and all three may indeed have some connection. admittedly tenuous. with the other Charadriiformes. The humerus of the latest. however. seems to have features reminiscent of another in the memory. which prove to be the Cjconi and more specifically the Threskiornithidae. Taking account of the initial leanings toward the Charadriiformes. I sought to

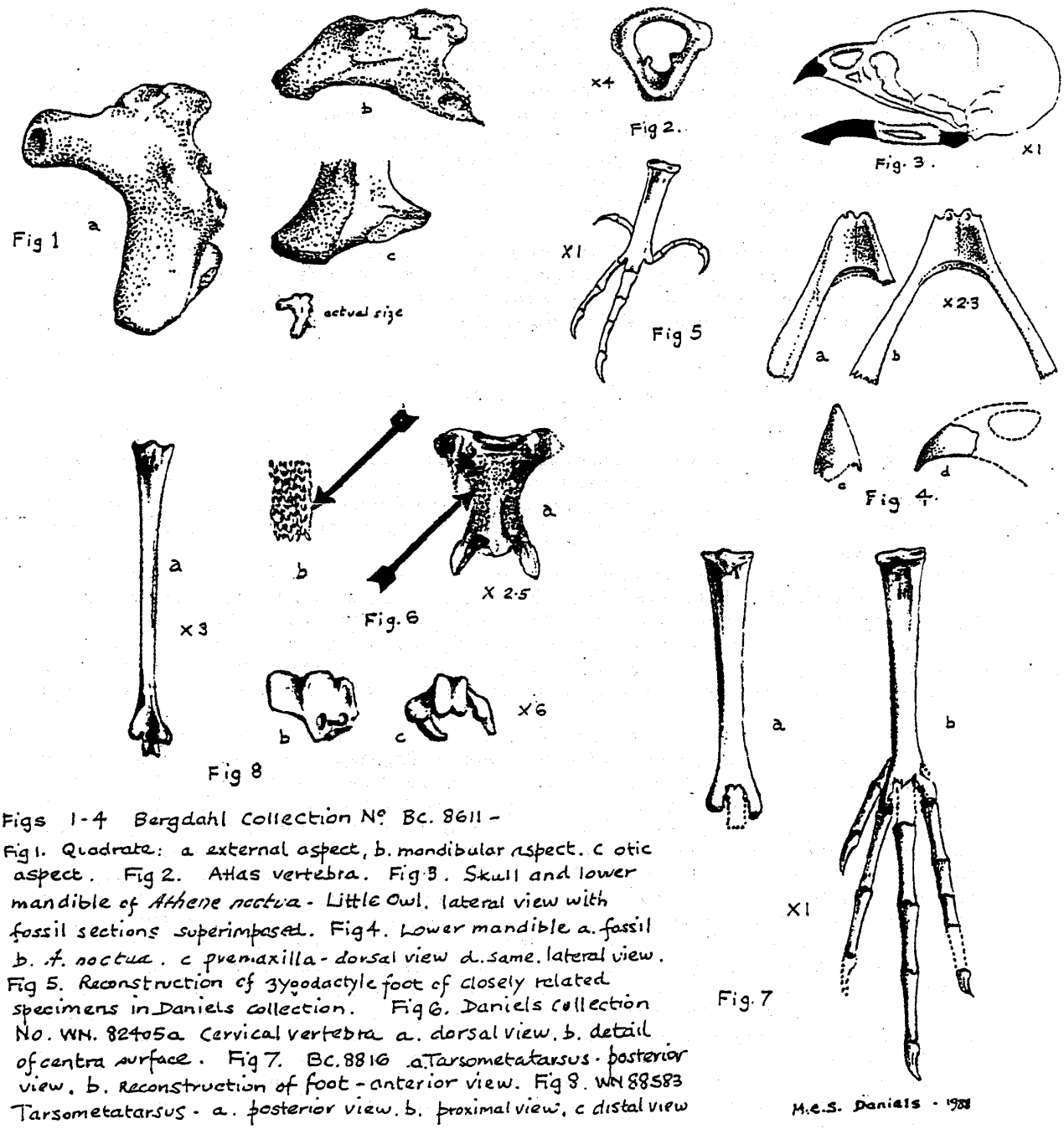
examine the most ibislike candidate of that group. *Numenius*. Bearing in mind that several authorities have remarked on shared similarities of these types. widely separated in the classification. I was rather excited to think that the fossil may turn out to yield crucial evidence about their ancient. possibly shared. origins.
Of the range of birds loosely Coraciiformes. which are of quite frequent occurrence at the Naze. I collected several more specimens. Along with one secured in May of this year I was able to tentatively associate others round previously and by virtue of this determine proportions of the wing including ratios of the elements. The wing is thus :




and I calculate overall span with feathers as being around 24 cm (9.5 inches). Checking ratioswith modern types the limb can be compared somewhat to that of owl, Striges, trogons, and less to Coraci. Another bird. extensively preserved and somewhat larger. collected several years ago, which included a near intact, undistorted skull. resembles the recent find and is quite kingfisher-like. A further addition to the appreciable rollerlike element of the Naze avifauna was a specimen collected early in the year .This, like others, possessed thin walled bones. but did not totally duplicate previous examples. Invariably these London Clay birds differ in type and it is more the exception than the rule finding complete duplication, such must have been the multiplicity of forms in this ancient environment. The skull of the fossil. though distorted, admirably provided detail of the palate which appeared to be schizognathous, thus not in keeping with living rollers.
My latest find. secured on a day memorable for poor clay exposures. was soon determined as one more item to be categorised under the heading *Primobucco olsoni*. This species was established based on information provided by much of the skeleton on a slab. but I understand poorly revealed at the time of the study. Since it was described. a number or identical or closely related types have been discovered; I have seven examples from the Naze, three of which are most extensively preserved including skull material. Collectively virtually every skeletal element is present even including sclerotic plates. There is no doubt in my mind that the bird should not have been assigned to the group implied by its name. From careful perusal or the material in my
possession I would think these birds are better as seen somehow connected with the Cuculiformes. Even then. given the availability of such excellent evidence. that view is still advanced with much caution. Indeed having regards to modern types. I have rioted on my Catalogue Sheet in addition to cuckoos. both an owl and mousebird as having good comparative aspects. Unfortunately this would appear to be one further instance where seemingly there has been over anxiousness to categorize material based on flimsy evidence. thence to compound the fault t by the choice of name having specific inference. From my layman's standpoint I wonder why science in this field cannot be content to work perhaps on some form of numerical identification until such times as total certainty concerning category is achieved... a rare state if the material in my possession is anything to go by!
Alongside with my own collection. I have had the benefit of examining the finds of my friend Mr, Paul Bergdahl. He has similarly been successful in locating some excellent avian relics. With his consent these can be mentioned here. The first of five worthy of particular attention is ostensibly kingfisherlike. The remains included much of the lower mandible plus many other bones. but most usefully. a near complete set of phalanges and talons of the foot. Through such I was able to reconstruct the pes or this individual. al so sort my own material. The result has been that whilst we can see similarities to modern alcids - the anisodactyl foot. the toes of the fossils from the Naze are much longer, including the hallux, than those of say the European kingfisher *Alcedo atthis,* compared to which the fossils are slightly larger. Mr. Bergdahl's next find added more detail about birds of which I had several specimens and provide much additional pectoral and wing data. also a complete quadrate. a complex and highly diagnostic bone. seemingly much understudied. By combining the information gleaned from this bird with that from my fossils.. a picture of a rollerlike form emerges. Comparing wing and leg ratios with living types. there is evidence for believing these birds relate better with ground rather than with the "true'. rollers. However the ratios are not dissimilar to those of the trogons of which I have detail and indeed some of the skeletal characters seem worthy of careful comparison. These British fossils would seem to have fairly close counterparts discovered in Early Tertiary rocks of North America. an observation which could apply equally to several groups now making their appearance. Another recent acquisition which included coracoid, scapula, carpometacarpus, the legs lacking toes, again adds

knowledge concerning a pan-Atlantic group. Described originally on the basis of a solitary tarsometatarsus and named *Eobucco brodkorbi,* much material has subsequently emerged so that data concerning the entire skeletal anatomy of this type of bird must now be available. Certainly its systematic placement must now be called into doubt and once again. because of the selection of name specifically tied to the Bucconidae, this creature has already to carry the burden of confused nomenclature. For under examination and with the benefit of having the toe bones of my birds, including the extremely squat phalanges of the third and fourth digits. it can be seen that these individuals possessed parrot or raptor like feet. The distal tarsus flares quite widely and this better resembles the psittids.

Perhaps the most revealing of Mr. Bergdahl's fossils also has relationships with the last. It proved particularly complementary to no less than eigth specimens in my possession. of which four are excellent post-cranially. Overlaps of his material and mine show close connection. probably at species level. The tarsus. of which J now have three exquisitely preserved examples, are to me, most convincingly owl-like. but examining the structure of the digits. these seem more akin to the parrots. What is undoubtedly the most significant feature is presented by the cranial remains of BC. 8816. see my accompanying illustrations. Maybe these will relieve me from further deliberation except for the quadrate; widely splayed. however not to the degree found in modern owls (Figs. 1-4).




Figs 1-4 Bergdahl Collection Nº Bc. 8611 -
Fig 1. Quadrate: a external aspect, b. mandibular aspect. c otic aspect. Fig 2. Atlas vertebra. Fig 3. Skull and lower mandible of *Athene noctua* - Little Owl. lateral view with fossil sections superimposed. Fig 4. Lower mandible a. fossil b. *A. noctua*. c premaxilla - dorsal view d. same. lateral view. Fig 5. Reconstruction of zygodactyle foot of closely related specimens in Daniels collection. Fig 6. Daniels collection No. WN. 82405a Cervical vertebra a. dorsal view. b. detail of centra surface. Fig 7. Bc. 8816 a. Tarsometatarsus - posterior view, b. Reconstruction of foot - anterior view. Fig 8. WN 88583 Tarsometatarsus - a. posterior view. b. proximal view, c distal view

The figure 7 gives impression of a foot referable to an important group of Waltonian birds. There is probably over twenty specimens in the Daniels collection representative of several distinct varieties. Some of my fossils and others from both North America and continental Europe, have been studied in depth with the result that their anatomy has been found to have resemblances to some ratites, more particularly the Tinami.

**HUNGARIA**

Denes Janossy is working on fossil and subfossil bird remains. The work of the last year resulted in that the late Tertiary locality complex of caves and fissures in the Upper Carboniferous quarry-system near the village of Polgardi (Western Hungary. Near Szekesfehervar). known for about seventy years as bone-bearing sites. has yielded in two localities no. 4I and no. 5). some hundreds of bird bones and fragments of them. The age of these localities is. according to micromammals. Late Miocene. or Upper Turolian. MN 13 zone. The preliminary list of determined birds is as follows :

*Palaeocryptonyx* sp., frequent
Galliform, small,. few
*Gallus aesculapi* Gaudry, few
*Otis* aff. *khosatzkii* Bochenski and Kurochkin. few
Porzana aff .estramosi janossy, few
*Porzana* sp., size of *P. parva,* frequent
Rallidae indet., size of *Crex*, few
*Tringa* sp.. size of *T. glareola*, few
*Tyto* sp., size of *T. alba*, frequent
Strigidae indet., few
aff. *Luscinia* sp., large
aff. *Acrocephalus* sp., small
aff .*Sylvia* sp., large
Fringillidae indet., small and large
Passeriformes indet., some bones.

From this locality-complex was also described *Anas albae* Janossy.

The composition of this rich fauna. rather richer in individuals than in species. is very special from the palaeoecological point of view (frequency of Rallidae) as well as from the stratigraphical and zoogeographical aspects (combination of Western and Eastern elements of our continent such as *Palaeocryptonyx* together with *Otis*. The detailed elaboration of this very important ornithofauna is pending.
D. Janossy was also charged by the Institut fur Quartärpaläontologie of Weimar (East Germany), to determine the very fragmentary bird material from the fluviatile sediments of Untermassfeld (near Meiningen). The age of the hitherto richest *Hippopotamus* locality in Europe is Lowest Middle Pleistocene (Lowest Biharian), "*Allophaiomys*-Zone". The list of determined species, chiefly on very scarce fragments, is:

*Cygnus* sp.*Anser* aff *subanser* Janossy
*Haliaetus* aff. *brevipes* janossy
*Francolinus capeki* Lambrecht
*Turdus* sp .
*Corvus* aff *janossyi* Mourer-Chauvire
*Garrulus* aff. *glandarius* Linne

Remarkable is the westernmost occurrence of *Francolinus* in Europe.

**ITALIA**

Mrs Carla Benci. from the University of Firenze. is engaged in studies about morphology and systematics of Italian Pleistocene and recent birds.She has defended a thesis consisting in the elaboration of a dichotomic key to determine the humerus of European birds. This dichotomic key has been introduced in a computer program. This program makes it possible to calculate. in the same time. the frequency of the species in a given locality and a thermic index for this locality. The method to calculate this thermic index has been elaborated by G. Demarcq and C. Mourer-Chauvire for the birds of the French Pleistocene localities.

JAPA**N**

Keichii Ono is now preparing the manuscript on the Japanese Neogene *Anhinga* from the Mizunami Basin of the E. Middle Miocene, and Kobiwako Formation of the Pliocene. These materials are under describing as a new species. He is al so working on a new species of *Diomedea* from the Mie Prefecture of the Middle Miocene.
An almost complete skeleton of *Sula* (*Microsula*) has been discovered from the Chichibu Basin of the Middle Miocene, Central Japan, and is under preparation.

The Japanese record of bony-toothed birds has expanded from the Lower Oligocene (Iwaki, Fukushima Pref.), the Middle Miocene (Chichibu Basin. Saitama Pref.. and Mizunami Basin. Gifu Pref.), to the Pliocene (Maesawa, Iwate Pref.. and Kakegawa, Shizuoka Pref.).
Mr. Yoshiki Kouda had excavated the Lower Oligocene Avifauna from the Iwaki Formation of Iwaki City, Fukushima Prefecture. This avifauna consists of marine species representing 5 orders and 6 families. There have been found abundant limb elements of the family Plotopteridae.
Keichii Ono has identified the following taxa :

Plotopteridae ssp.
Procellariidae ssp.
*Phalacrocorax* sp.
*Morus* sp.
*Sula* sp.
Falconiformes family indet.
Anatidae gen. and sp. indet.
Alcidae gen. and sp. indet.
Aves incertae sedis.

Keichii Ono is continuing on the study of the Japanese Pleistocene Avifauna. and on the comparative osteology of the family Gruidae. some species of Rallidae, *Scolopax*. and *Garrulus*.

**THE NETHERLANDS**

Peter Weesie is now Professor at the Institut des Sciences de la Nature. Universite d'Ouagadougou, Burkina Faso. He is still working on the Pleistocene avifaunas of the Mediterranean Islands.

**NEW ZEALAND**

The current projects on Avian Paleontology and Evolution carried out in the Geology Department of the University of Otago. Dunedin. are as follows :

R. E. Fordyce and C. M. Jones are working on the systematics of a possible proto-penguin from the Late Paleocene or Early Eocene of New Zealand. and of the late Eocene-Oligocene penguins from New Zealand, including cladistic analyses. The latter project is in its early stage.

A. K. Bearlin is working on the systematics of Miocene penguins from Australia.

R. E. Fordyce is working on the systematics of an Early Miocene waterfowI (?) from New Zealand.

R. E. Fordyce and C. M. Jones are working on the systematics of problematica (incomplete specimens) from PaIeogene of New Zealand.

Ron J. Scarlett. from the Canterbury Museum, is awaiting photographs to submit for publication a paper revising *Pachyanas chathamensis* Oliver. Dr. Oliver published a valid. But very brief description. Ron Scarlett has written a full description of this intriguing goose-duck, or duck-goose. of which the Canterbury Museum hold the holotype and most of the other known bones of it. He cannot give a date of pubIication as yet, but he hopes it will not be too long.
One of the Museums preparator is mounting a cast of skeleton of *Allosaurus*. which will be the first permanent Dinosaur display in New ZeaIand. although last November until January Auckland Museum had a temporary display of Dinosaurs, on loan from Australia. Ron Scarlett is one of those who believe birds are living dinosaurs. and is interested greatly in dinosaurs as weil as birds.

Recent avian paleontological studies of Joseph W .A. McKee have concentrated on the avian fossils of the Taranaki and Hawkes Bay regions of the North Island of New Zealand. The Hawera area of Taranaki has produced some further bones of the Pseudodontorn (Pelagornithidae). previously reported (McKee, J.W.A., New Zealand J. Zoology, 12, 181-184. 1985). This Pliocene Pseudodontorn is probably comparable in size to the Pseudodontorn from Peru that. Jacques Cheneval is studying. The latter is of Early Pliocene in age and about the same size as the *Pelagornis miocaenus* from the Middle Miocene of France.
The Hawera locality has recently produced material of the New Zealand Pliocene Penguin. *Tereingaornis moisleyi*, and represents the second record of this fossil penguin. The bones have tooth-marks, indicating the predation of this penguin. A paper describing this penguin material has recently been published (New Zealand J. Zoology, 14:557-561.1987).
Pliocene sediments in the Hawkes Bay region have produced further material of the *Tereingaornis moisleyi*, including the first tibiotarsus referable to this penguin. Bones of a small marine bird have also been recovered from these sediments and are awaiting preparation.
Other fossil bird material awaiting preparation are two isolated bones from Miocene strata from Dunedin (South Island. New Zealand),
In conjunction with the avian paleontological studies, a reference collection of modern bird skeletons is being assembled. Also a reference collection of fossil bird papers is being assembled and the co-operation of the members of the SAPE has made this possible and appreciated.

**POLAND**

Zygmunt Bochenski is still working on very interesting bird remains from Africa. in Bir Tarfawi, South Egyptian Sahara, ca 80 000 to t 20 000 years BP. In typical take deposits were found there the remains of mammals and birds. The majority of remnants has been determined and described by now. They represent among others such S. African species as *Phalacrocorax africanus, Fulica cristata, Oena capensis* and *Gyps africanus*. The manuscript must be finished till the end of 1988.

In Vienna he received for determination the bird bones (Upper Pleistocene and Holocene) from 5 Austrian caves. He has determined about half of this material by now. In co-operation with Teresa Tomek, he works also on the Holocene bird fauna from Duza Sowa Cave, the preliminary report on this locality was published in 1983.

Teresa Tomek finished the description of birds from the deposits of Nad Mosurem Starym Cave. the paper on animal remains from this locality is now in press. She finished her paper on small but interesting Holocene material from the Tatra mountains. The most interesting is finding there the remains of *Pvrrhocorax pyrrhocorax*. On the other hand she continues the targe work on comparative osteology of the recent European Corvidae. This work is expected to be finished in 1990.

Since October 87. Zygmunt's son Zbigniew has been a scientific assistant at the Institute of Systematic and Experimental Zoology of Krakow. The council of the Institute has decided that Zygmunt has to teach a young zoologist to work with fossil bird bones and prepare him to replace him in the future. Zbigniew is preparing now for publication his MA thesis on the diet of the Tawny Owl on the background of environmental resources. He received also. as a material for doctor thesis, the bird remains from the Upper Pleistocene deposits of the Oblazowa Cave (this is the locality near the Tatra Mountains. where has been found the boomerang described in "Nature", last year). He works also with Upper Quaternary birds from the Dziadowa Skata.

The members of the Institute continue to collect bird skeletons. They have now represented 705 species. The most recent list of the collection will be prepared in the nearest future and sent to the research workers interested in it.

**SOUTH AFRICA**

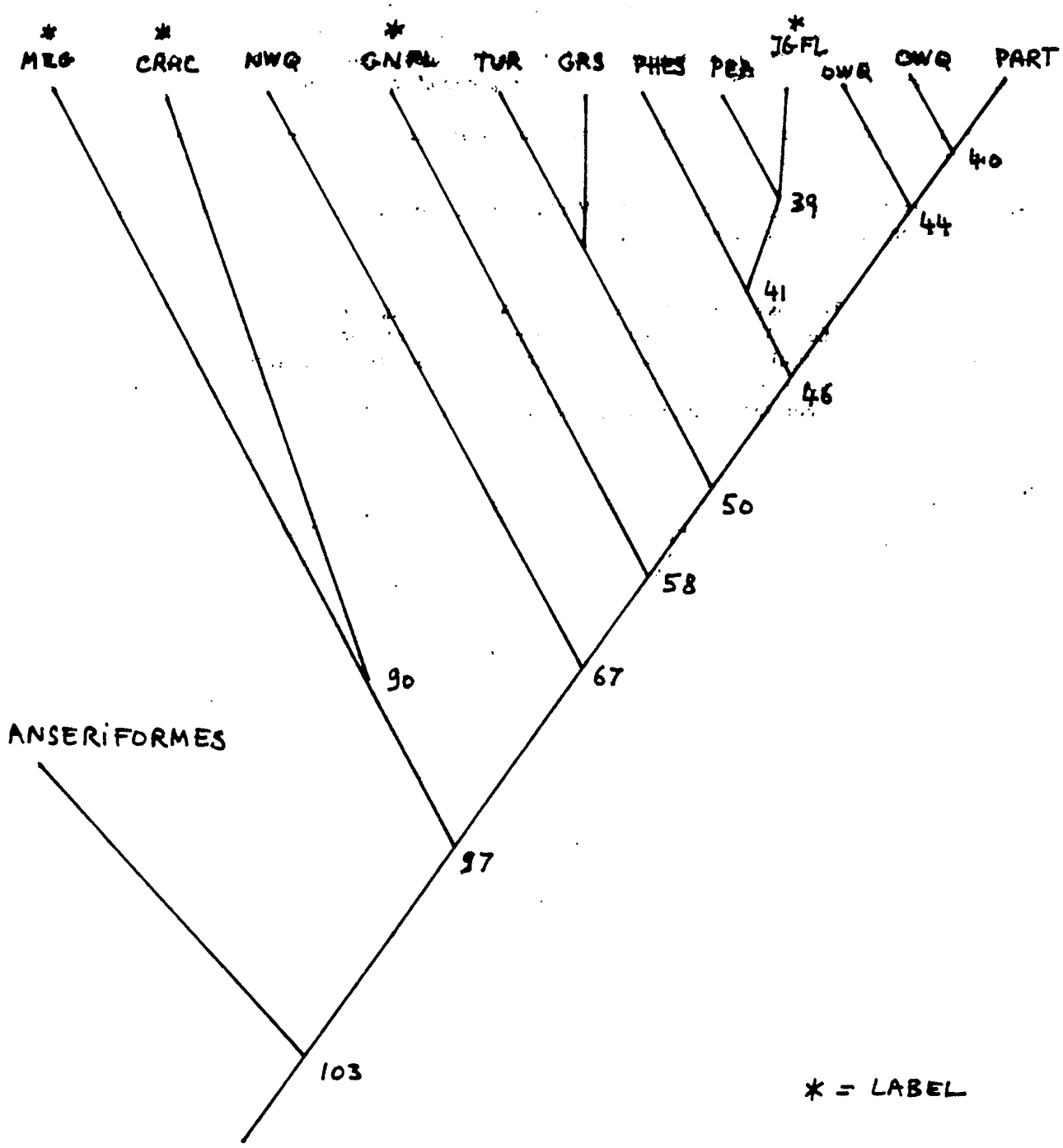
Anusuya C. Moodley. from the Wits University. has just completed her MSc. on the comparative histology of limb-bone ontogeny in the crocodile, a theropod dinosaur. and the secretary bird. The dinosaur that she has been

working on is *Syntarsus rhodesiensis,* which is an early Jurassic coelurosaurian. She compared this animal's bone histology with that found in typical ectotherms (represented by the crocodile) and that found in typical endotherms (represented by the secretary bird). The study showed that the bone histology of *Syntarsus* occupied an intermediate pattern between that found in the ectotherm and the endotherm. She has now decided. as part of his Ph. D. research. to examine the bone structure of the prosauropod. *Massospondylus*. and the Ostrich. It would be interesting to compare the bone tissue of these animals with that found in *Syntarsus* and the secretary bird.

Tim Crowe in collaboration with Eric H. Harley and Mariola Jakutowicz. has presented a paper on the phylogenetic and taxonomic implications of variation in mitochondrial DNA, morphology. behavior and ecology of extant and fossil Southern African francolins (Galliformes: Phasianidae). He also presented a paper on morphometric research on Miocene and Pliocene fossil Phasianidae from the West Coast of Southern Africa; some preliminary taxonomic and phylogenetic conclusions.
Tim also works in collaboration with J. Cracraft and Lester Short. on the phylogenetic relationships among the Galliformes:

Aim: To identify phylogenetic relationships among supra-generic taxa within the Galliformes.

Taxa: megapodes (MEG), guans and curassows (CRAC), guineafowl (GNFL), peacocks and peacock pheasants (PEA), turkeys (TUR), grouse (GRS), true pheasants (PHES), jungle fowl (JGFL), partridges (PART), Old World quails (OWQ), and New World quails (NWQ).




**Phylogeny of Sibley & Ahlquist, Int. Ornith. Congr., 1986**

Approach: numerical cladistics.

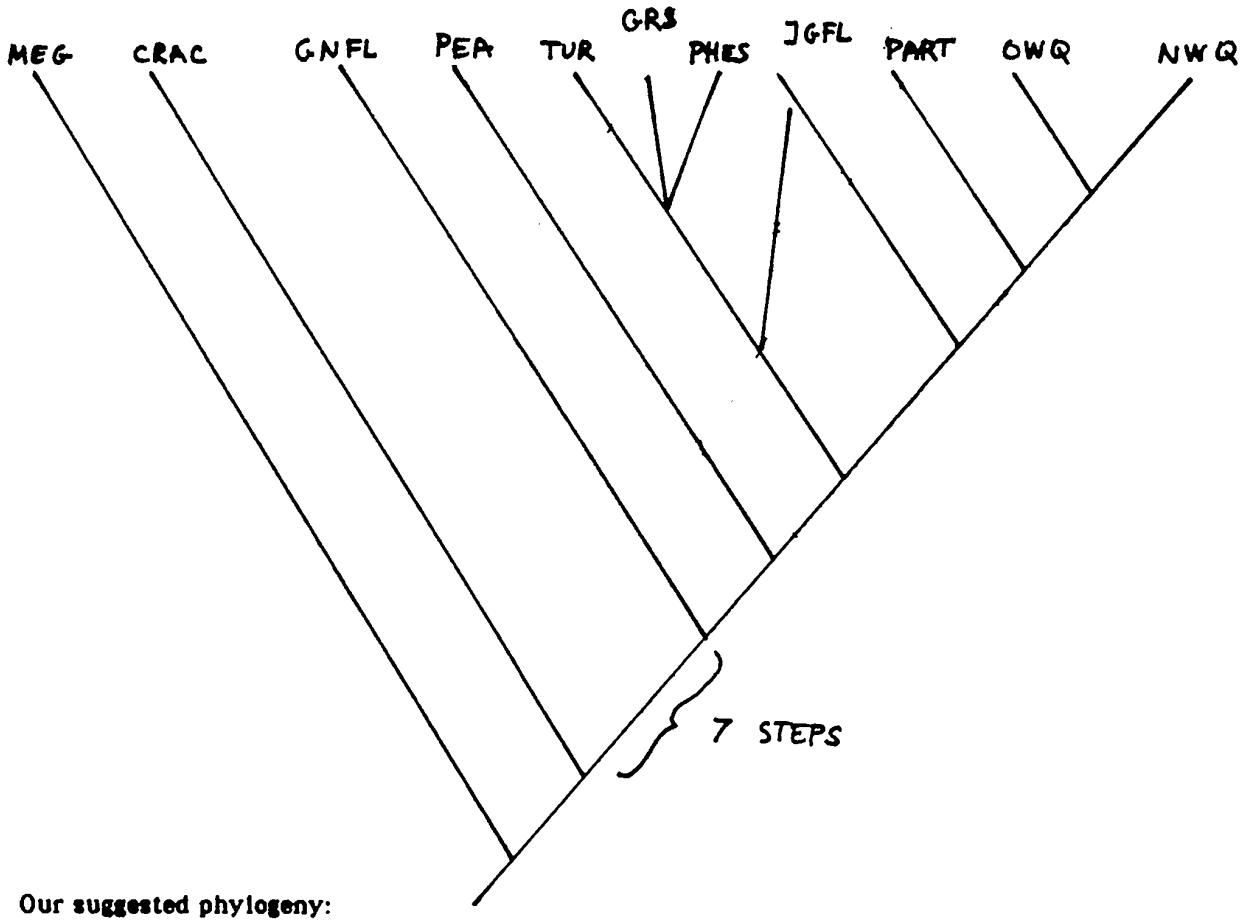
Key questions and their answers:

1. Are cracids (Sibley & Ahlquist 1985) or Asian phasianids (Olson 1985) the sister-group or the megapodes?
No. Similarities between cracids and megapodes are with regard to ancestral characters and Asian phasianids share a large suite or derived features with other Old World and New World phasianids. and not with megapodes. Megapodes share many ancestral characters with Anseriformes (the most likely sister-group or the Galliformes).

and a suite or derived characters with ALL other Galliforms. Thus. They are the sister-group or the remaining Galliformes.

2. Are the New World quails the sister-group of the Galliformes not including the megapodes and cracids (Sibley & Ahlquist 1985)?
No. They are the sister-group or the Old World quails. Guineafowl are the sister-group or the remaining non-megapode/cracid galliforms.

References
Olson. S. L. 1985. The fossil record or birds. In: Avian Biology (D.S. Farner, J. R. King & K. C. Parkes. Eds.) Vol. 8. p. 79-238. Academic Press. New York.
Sibley C. G. & J. E. Ahlquist. 1985. The relationships of some groups or African birds. based on comparisons of the genetic material. DNA. In: K. L. Schuchmann (Ed.). Proc. Int. Symp. Afr. Vertebrates. Bonn. Koenig Forschungsinst.. p. 115-161.




**Our suggested phylogeny:**

**SPAIN**

Antonio Lacasa i Ruiz, from the Institut d'Estudis Ilerdenes, at Lerida. Has studied a small specimen of fossil bird coming from the Lower Cretaceous (Neocomian) of the Sierra del Montsec (Province of Lerida). This specimen includes both humeri, ulnae, radii. a partially exposed furcula with an acute hypocleidium, and feather prints. A preliminary paper on this bird has been published in the journal "Ilerda", no XLVII (1986). Another Neocomian almost complete bird was discovered in the outcrop of Las Hoyas (Province of Cuenca). and a paper on these two discoveries has been published in "Nature" by J. L . Sanz, J. F. Bonaparte, and A. Lacasa. The Las Hoyas fossil

bird is nearly articulated but it lacks the skull and some cervical vertebrae, as well as the carpus and the manus. It presents a combination of derived (strut-like coracoid, pygostyle) and primitive (pelvic girdle, sacrum, hind limb) character states. These two specimens are very important for the history of the early diversification of birds.

Josep Antoni Alcover, from Mallorca, spent almost one year in Argentina. Working mainly on the small mammals of that country. However, his research in Avian paleontology includes the publication, in collaboration with Francisca Florit. of a new species of *Carduelis*, *C. triasi* from the Pleistocene and Holocene of La Palma. Canary Islands.
At present time he is preparing a paper on an Upper Pliocene avifauna from Eivissa. in the Balearics, with the description of a new species of *Puffinus*. This paper will be published in "Endins".
During the Congress of Nuoro, Sardinia, on the insular faunas, he will present a paper on three Upper Pleistocene aviraunas from Eivissa.

**UNITED STATES**

Baltimore

Larry Witmer (John Hopkins University school of Medicine) is involved in several projects relating to the evolutionary history or birds. He continues his research on the Cretaceous bird Hesperornis and presented new reconstructions of its braincase at the second SAPE meeting in Los Angeles. He also continues his studies of the evolution of the cranial air sac system of birds and other archosaurs. Despite the highly pneumatic nature or the avian skull, the avian pneumatic system is relatively simple in comparison to many fossil archosaurs. Birds clearly inherited pneumatic skulls from their nonavian ancestors, and hence. cranial pneumaticity did not originate as a flight adaptation.
New material or the Eocene bird *Diatryma* collected from the Wildwood Formation of the Big Horn Basin, Wyoming, is being described by Larry and Ken Rose. The material comprises remains of perhaps five individuals and includes a lower jaw and quadrates, vertebrae, and various limb elements.
A new skull of a Miocene flamingo was recently collected from Rusinga Island. Kenya, Africa, by the Allan Walker-Richard Leakey field party. The skull is extremely well-preserved and probably can be referred to the flamingo named *Leakeyornis* by Pat Rich and Cyril Walker . Larry will travel to Nairobi in the near future to study this skull and assess the status of Miocene African flamingos.

Berkeley

Allan C. Wilson has a paper in press in the Proceedings of the 19th International Ornithological Congress. on the time scale for bird evolution. Allan and Kathleen M. Helm-Bychowski have also a paper in press, in the same Proceedings, about the temporal calibration of Nuclear DNA evolution in Phasianoid birds; Evidence from restriction maps.
Kevin Padian gives the following information about the status or *Palaeopteryx* (Upper Jurassic?, Morrison Fm. Western Colorado): Some years ago. Jim Jensen recovered a collection of small bones from the matrix surrounding the enormous sauropod dinosaurs *Supersaurus* and *Ultrasaurus*, known from the Uncompahgre Fauna of the Morrison Formation of Western Colorado (probably Upper Jurassic). Among these small bones of various amphibians and reptiles were several that Jensen identified as avian or probably avian. One specimen. which he identified as a proximal tibia, was made the basis of a new genus and species of bird. *Palaeopteryx thomsoni*. It turns out that this bone is not a proximal tibia. but a distal radius. And although it could belong either to a bird or another kind of small theropod dinosaur. it seems more likely that it is not avian.
A second bone, a synsacrum with no remains of the pelvic girdle. was also identified as probably avian by Jensen. This synsacrum is not avian. however; it belongs to a pterodactyloid pterosaur. Jensen also noted two other small femora that are very similar to that of *Archaeopteryx,* the earliest known bird. Again. like the distal radius. one of these may be avian or from another small theropod. but it seems more probable that it is not avian. The second femur is pterodactyloid.
Of the remaining several dozen small bones in this collection. the great majority are pterosaurian. As far as Kevin

can determine. there is only one kind of pterosaur represented. And it is a pterodactyloid. Therefore they have been referred to *Mesadactylus*. The radiometric age of these deposits is approximate1y 135 million years. just about at the jurassic-Cretaceous boundary. The Solnhofen deposits from which *Archaeopteryx* comes are about ten millions years older. In the Solnhofen beds. both so-called "ramphorhynchoids" and pterodactyloids are found but this does not seem true for later deposits. such as Tendaguru and these beds in the Brushy Basin Member of the Morrison Formation. No diagnostic avian bones have been recovered from these beds. a1though birds are certainly evolved by this time.

Stephen D. Emslie completed his Ph.D. in December 1987, at the University of Florida. His dissertation. titled "The origin evolution, and extinction of condors in the New World" has been published in two recent papers. One on the phylogenetic relationships of living and fossil condors with the description of a new species of Gymnogyps, is in the june 1988 issue of the Journal of Vertebrate Paleontology. A second paper describing a new genus and species of condor-like vulture. and the earliest definite vulturid from North America. is in the ju1y 1988 issue of the Auk.
Since completing his dissertation. Steve has been working at Point Reyes Bird Observatory. 4990 Shore1ine Highway. Stinson Beach. CA 94970. He and several other biologists are conducting research at a field station on S. E. Farallon Island, 25 miles off the coast of San Francisco, where the largest seabird colony in the continental U. S. is located. He is working on several projects on living seabirds. especially gulls. cormorants and alcids. with other biologists. Steve is on the island, and difficult to reach, from December to August with 2-week breaks on the mainland every 4-6 weeks. If you need to reach him. write to PRBO or call (415) 868-1221 for hls schedule.
In addition to his work at PRBO. Steve is a research associate in the Department of Paleontology at the University of California. Berkeley. He maintains his work on fossil birds with the collections there and is currently completing description of a large and diverse wetland avifauna from the late Pliocene of Florida. He is continuing work on several other Plio-P1eistocene avifaunas from Florida as well. Current1y in press in the Florida State Museum Bulletin is his paper describing a large and diverse Irvingtonian avifauna from Leisey Shell Pit, Florida.

Gainesville

Diana Matthiesen has completed the cataloguing and preliminary identification (mostly to family and genus level) of the nearly 30,000 Ear1y Pleistocene bird fossils collected by Mary Leakey at Olduvai Gorge. Tanzania. An overview of the collection was presented at the SAPE meeting in Los Angeles. including a comparison with preliminary results of the Ethiopian Plio-Pleistocene bird fossi1s from Omo (9 specimens) and Hadar (49 specimens).
The Olduvai catalog has been computerized using an IBM PC and MDBS KnowledgeMan software. In addition to excellent data management capabilities. this software allows for direct input of measurements from digital callipers. Length and breadth measurements are being taken of all specimens for taphonomic analysis of the effects of screen size and other factors on faunal composition. The Olduvai collection will be compared with over 10.000 additional specimens from some 35 other archaeological and paleontological sites. which have already been identified, computerized. and measured.
Her paper on the bird remains from the coastal Peruvian archaeological site of Huaca Prieta (3-4500 yrs BP) has been published in the B.A.R. volume on the Economic Prehistory of the Central Andes (Wing & Wheeler, eds. 1988). Results indicate a major dependence for subsjstence on the endemic Humboldt Current marine bird fauna.

Los Angeles

J. Lee Kavanau gives the following information : The modus operandi of behavioural evolution appears to favour a retention of the potential for certain types of ancestral behaviour to be activated. In vertebrates. some of these relict behaviours normally are either fully expressible or inhibited at all times. others normally become expressible only during ontogeny, breeding. or adventitiously. Still others become fully expressible in hybrids or after pathological or experimental disinhibition. In some cases the behaviours are vestigial. Retention of the potential for activation of relict behaviours traces largely to the highly conservative evolution of the CNS and its enormous self-realizing potency in ontogeny. Behavioural responses are encoded in the CNS through the most complex and indirect of all

ontogenetic links, involving enormously varied patterns of causal sequence. and there is a steep and narrow buffering of the supragenetic mechanisms that establish the neural circuitry for behavioural responses. In addition. genes and selection can lead to behavioural alterations only indirectly, and generally with polygenic requirements. However. the consequences of the evolutionary inertia and self-realizing potency of the CNS extend beyond their influences on individual behavioural responses. Any sequential process under complex neural control becomes a possible candidate to retain relict features. Retention of such features apparently has occurred in egg care by small parrots and in germ cell development and follicular maturation in some species of birds and lizards. The most overtly recognisable and faithful ancestral recapitulation may occur during the latter processes. For example. follicular rnaturational stages appear to retrace both the evolutionary progressions of sizes and numbers of ripe follicles and the transition from en masse to one-at-a-time ovulation and oviposition. Accordingly. some ancestral physiological and behavioural reproductive features that previously were thought to border on being inaccessible may be amenable to study.

New York

The research in the last year or Francois Vuilleumier. from the American Museum, has been the ongoing study of speciation in the genera *Attagis, Phalcoboenus, Cinclodes, Geositta*, and *Phrygilus*, in southern Patagonia and Tierra del Fuego.

Washington. D.C.

Jonathan Becker has spent the last year as a Chapman Postdoctoral Fellow at the American Museum. His research focused primarily on small birds from Early Neogene of North America, especially on fossil Columbiformes, Passeriformes, Capitonidae, Cuculidae, Psittaciformes, Picidae, Apodidae, and Momotidae. As part or this research he visited the paleontological collections at the South Dakota School of Mines and Technology, the University of Nebraska State Museum, the Florida State Museum. and the National Museum or Natural History .Smithsonian Institution. He continues to work on the fossil birds collected on Aldabra in 1987 and on late Miocene birds from Florida. In early October 1988 he will be moving back to the Division of Birds, National History Museum or Natural History, Smithsonian Institution.

Andrzej Elzanowski completed a detailed study or the braincase of *Enaliornis* (to be submitted to J. Vert. Paleont.. in coauthorship with Peter Galton. Univ. or Bridgeport) and described a premaxillary from the Lance Formation (in coauthorship with Michael Brett-Surman. Smithsonian). At present, he is summarizing his observations on the palate. rostrum and braincase of Hesperornis. Due to denials of support for a more extensive study in U.S.A.. this project had to be drastically cut down. which is particularly regrettable in view of the lack or any decent description of the cranial materials of Hesperornithidae. He is also writing comments on the skull of *Odontopteryx*. and. with Richard Zusi, reviewing patterns or the braincase sutures.
Andrzej is moving to Munich. to work with the newly organised protein sequence database in the Max Planck Institut fuer Proteinsequenzen. D-8033 Martinsried bei Munchen.

Storrs Olson and Helen James were engaged in fossil collecting in Hawaii from January through June of 1988. They worked mainly in two types of lava tubes. those with bones lying exposed on the floor of the cave. and those with bones contained within stratified alluvial sediments. Two probable new species were found, as well as many superior specimens and new distributional records. Some examples worth mentioning were flightless individuals of the usually flighted *Branta*, woods-dwelling populations of *Gallinula* and *Anas* and the first specimens of *Drepanis* from Maui. So much new material was shipped back to the NMNH that they have not finished unpacking it. Radiocarbon expert Tom Stafford took part in the field effort, and they expect to learn more about the chronology of Hawaiian extinctions when he completes his radiocarbon studies later this year .
Many of you saw Olson at the SAPE meeting. James instead attended the conference in Sardinia on "Early Man in the Island Environment". They plan to spend more time in Washington next year, although Olson cannot resist a six week trip to Panama to collect recent birds. beginning in February .

Kenneth Warheit continues his work on the systematics. morphometrics. and fossil history of the Sulidae. This work wilt be completed by Summer 1989. He also continues his work on the systematics and functional morphology of the Pseudodontorns (Odontopterygia), with Storrs Olson. The work on the functional morphology of the tower mandible of the Pseudodontorns has been conducted with Richard Zusi.
Storrs and Kenneth. in conjunction with the Department of Exhibits at the National History Museum, Smithsonian Institution. are in the process of constructing a life-size model of the largest Pseudodontorn. to be displayed at the National History Museum, and in the Charleston museum, Charleston. South Carolina.

**USSR**

Leningrad

G. F. Baryshnikov and O. R. Potapova. have gathered diverse faunistic material from the Paleolithic sites of the Northern Caucasus and Transcaucasia. including Pleistocene bird remains. They hope to examine and publish it in the nearest future. They have prepared for the SAPE symposium in Los Angeles a report about new ornithological data from Paleolithic deposits in Crimea.

Lev Nessov discovered in 1987 a new Upper Eocene locality Dzheroy II, with bird bones, in Central Kizylkum Desert. Uzbekistan. This assemblage includes large Gruiform *Zhersia* and series of small birds. The regions in Kirghizia that were perspective for search of new eggshells localities. were not accessible for him in 1987. His field work in July to October 1988 was in Chukotka and Magadan regions, in Khabarovsk and Amur districts. In Chukotka (Kokanaut River Basin in Beringovsky area near Pekulney Lake), in a new locality of Campanian-?Early Maastrichtian (Late Cretaceous) age containing remains of lambeosaurine hadrosaurs and troodontid-like theropods. were found also bones with thin walls and very large hollows. but without features of pterosaurian remnants. These remains may be bones of middle-sized birds.
Bones of Coniacian (Late Cretaceous) small birds from Central Kizylkum Desert (Dzharakhuduk locality) are now under study. new enantiornithid and relatively advanced forms are important among them. For exact determination of the systematic position of some or these birds are necessary to use a genealogical ("vertical") system of taxa, as gradistical ("horizontal") one too.
The geologist Mrs. N. V. Shabanina from Muruntau. transferred him in October 1987. a slab of gray clay with two bones of relatively large birds of Middle or Late Eocene age from Tashkura locality in Central Kizylkum Desert. Uzbekistan.
Alexandr A. Jarkov, from the Volgograd Natural History Museum. found in 1988 two long and tiny parts of jaw of a cormorant-like bird with a down curved narrow symphysis. in Volgograd District. near Malaja Ivanovka, in Dubovsky region. Now this material (possibly of Paleocene or Early Eocene age) is under joint study.
O. R. Potapova and A. O. Averianov (former students of the Leningrad University. now members of the staff of the Zoological institute, Academy of Sciences of the USSR) found in summer 1988 bird bones in the Middle Eocene marine and estuarine locality of Andarak II (south western part of Ferghana Valley, Kirghizia), were bird remains were previously unknown. This material is now under study by O. R. Potapova.

Moscow

F. Ya. Dzerzhinsky, from the Moscow State University, is very interested in Avian evolution but he does not deal directly with fossil material. His field of research is the comparative, functional. and ecological morphology of recent birds. He tries to understand the morphology of recent species and taxa in terms of their adaptations. but. of course. not directly with regard of new. young adaptations which can only reflect divergence of different species and genera. He is rather at tempting to understand the relatively basal structure of skeleto-muscular system as a sandwich of numerous ancient adaptation traces. their legacy, and to restore the ancient history of the taxa in form of the hypothetical sequence of those adaptations.
Such a methodology gives him some interesting clues for discussion of Avian evolution, including discussing with Paleontologists the problems introduced by the fossil record. For instance. the functional and ecological morphology of gallinaceous birds and waterfowl will be useful in connection with the discussion of mutual

alliance of these groups. and of the phylogenetic position of Presbyornis (Olson and Feduccia. 1980). His paper on this subject appeared in the Zoological Journal (1982, v. 61, n° 7, p. 1030-1041, in Russian),
Since then he studied the adaptations of the feeding apparatus in Paleognaths (primarily Tinamous), ibises (Threskiornithidae), storks (Ciconiidae). and diverse passerines (*Alauda*. *Cinclus, Lanius*, some Corvidae, Turdidae, Sturnidae). Now he is attempting to make some more steps in restoring the adaptational sequence in anatid ancestry. Then he will summarize his results on the adaptations of avian feeding apparatus for 30 years. This manuscript will include consideration of its evolution in several relatively primitive orders, such as Paleognaths. loons, plovers. penguins, fulmars, gallinaceous birds. waterfowl. some Gruiformes. and Ciconiiformes, This latter order will be considered in more details. including the relationships of families and genera.

Konstantin E. Mikhailov has finished the investigations or modern and fossil (Cretaceous and Neogene) bird and dinosaur eggshell that he studied for his dissertation ; principal structures. classification of characters. typification and classification of fossil eggshells, description or Cretaceous eggs and eggshells remains from Mongolia. Zoogeography, stratigraphy, taphonomy and review of eggshell structure evolution with phylogenetic implications. By the end or 1988 he will prepare for publication two papers about sauropsid eggshells classification. They will be published in Paleontological Journal. Moscow.
By the summer of 1989. K. Mikhailov hopes to have completed the manuscript of his monograph entitled "Fossil and Recent Sauropsid's Eggshell (Comparative Morphology and Evolution). It will be pubtished in the Transactions of the Soviet-Mongolian Paleontological Expedition.
During next years, he is going to pay attention to the creation of a SEM catalogue of recent bird eggshells, which will be useful both for systematic needs and for identification of Neogene and Pleistocene eggshell remains.
He continues to be interested in ethologico-ecological problems of bird nesting.

A list or his recent publications on eggshells (1 to 7) and nesting of birds (9 to 11) fol1ows:

1. Mikhailov K. E. 1986. Ratite eggshells pore complexes and mechanism of pore canal formation.Paleont. Journ.. Moscow, n° 3. p. 84-93 (in Russian).
2. Mikhailov K. E. 1987. Some aspects of eggshell microstructure. Paleont. journ.. Moscow, n° 3. p. 60-66 ( in Russian).
3. Mikhailov K. E. 1987. New data on the structure or the emu (*Dromaius novaehollandiae*) eggshell. Zoolog. Journ.. Moscow. v. L XVI, n° 9. p. 1349-1353 (in Russian, English summary).
4. Mikhailov K. E. 1987. The principal structure of the avian eggshell: data of SEM studies, Acta 2001. Cracov. Krakov. v. 30. n. 5. p. 53-69 (in English).

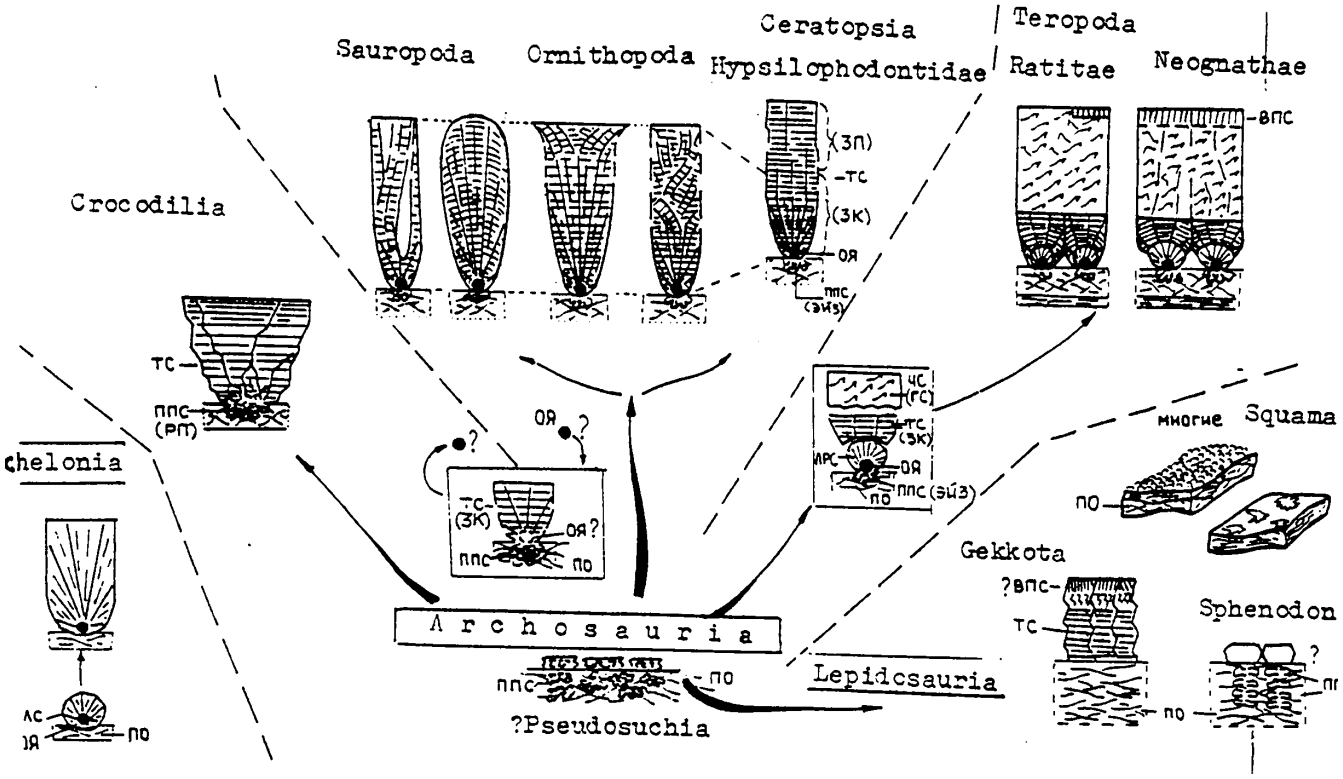
5-7 in: Transactions of the joint Soviet-Mongolian Paleontological Expedition. vol. 34, 1988, (Fossil Reptiles and Birds of Mongolia, in Russian, English summary).

5. Mikhailov K. E. The comparison of East European and Asian Ostriches Pliocene eggshelis. p. 65-72.
6. Mikhailov K. E. &. Kurochkin E. N. The eggshells of Struthioniformes from Palearctic and their position in the system of views on Ratite evolution. p. 43-65.
7. Kurzanov S. M. &. Mikhailov K. E. The finding of dinosaur eggshells in the Lower Cretaceous in Mongolia. p. 72-77, (An English version will be published in 1988 or early 1989 in "Dinosaur tracks and traces", Cambridge Univ. Press. N.Y.).
8. Mikhailov K. E. Microstructure of Avian and Dinosaurian Eggshells; Phylogenetical Implications. (short compilation of all the previous publications. in English. presented during the SAPE symposium).

9-11 in Ornithology, Moscow ( in Russian. English summary )

9. Mikhailov K. E. &. Filchagov A. V. 1984. Peculiarities of distribution and expansion of several bird species in Kola peninsula tundra. v. 19. p, 22-29.
10. Filchagov A. V, Bianki V. V. &. Mikhailov K. E. 1985, Bean-goose (*Anser fabalis*) in the Kola peninsula, v. 20. p. 26-32.

11. Mikhailov K.E. 1986. Ecological and ethological peculiarities of nesting in passerine birds in tundra. v. 21. p. 3-12.




**WEST GERMANY**

Angelica Hesse finished her thesis on the Messelrails. In a preprint (1988. journ. f. Ornith. 129: 83-95) she published the description of *Messelornis cristata* n. gen. n. sp.. the type of the new family Messelornithidae. The complete thesis is likely to be published in 1989.
D. S. Peters was concerned mainly with Eocene birds from Messel. He published a description of *Aenigmavis sapea* n. gen. n. sp. (Phorusrhacidae). in the Proceedings of the Table Ronde sur l'Evolution des Oiseaux d'apres le temoignage des fossiles. and of *Juncitarsus merkeli* n. sp. (Phoenicopteridae) in Courier Forschungsinstitut Senckenberg 97: 141-155 (1987). J. merkeli provided new evidence for the close relationship between Phoenicopteridae and Recurvirostridae.
A paper on a complete specimen of *Palaeotis weigelti* is in print. This new specimen of *P. weigelti* exhibits some characters unknown hitherto which do not corroborate the assumption that *Palaeotis* is belonging to the Struthionidae. Palaeotis should be classified in a separate family Palaeotididae.
A comprehensive presentation of our present knowledge of Messel-birds is given by D. S. Peters in: Schaal. S. and Ziegler. W. (ed.) : Messel -Ein Schaufenster in die Geschichte der Erde und des Lebens. Frankfurt a. M. (W. Kramer).

Further topics under study are :

D. S. Peters: The kinetics of the avian skull (a paper on constructional differences between palaeognathous and neognathous birds was already published in 1987. Natur u. Museum 117: 173-182).

D. S. Peters: A new Owl from Messel, which can be included in the genus *Palaeoglaux*. Because of its very peculiar set of characters *Palaeoglaux* deserves the status in a separate family Palaeoglaucidae.

D. S. Peters and E. Görgner : The significance of the claws of *Archaeootervx*.

A. Hesse and D. S. Peters: The fossil (Miocene) avifauna of Steinheim (W. Germany).

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