

**SOCIETY OF AVIAN  
PALEONTOLOGY AND EVOLUTION  
INFORMATION LETTER  
n° 5, November 1991**

Secretary : Cecile Mourer-Chauvire  
Departement des Sciences de la Terre  
27-43 Boul. du 11 Novembre 69622 Villeurbanne Cedex, FRANCE

**Open letter to members of the Society of Avian Paleontology and Evolution**

I would like to call the attention of the membership of SAPE to several items of interest and concern in the June 1991 issue of the Bulletin of Zoological Nomenclature (Volume 48:2). The first is the lead article by Peter K. L. Ng of the National University of Singapore entitled "How Conservative Should Nomenclature Be? Comments on the Principle of Priority". This is a superbly written essay in support of priority over "usage" that I think reflects almost perfectly the views of the majority of avian paleontologists. This position statement deserves a ringing endorsement. I will be glad to provide a copy to any interested member who does not have access to the Bulletin.

In the same issue are discussions of three petitions affecting the nomenclature of birds, including one fossil taxon (*Phorusrhacos*). To each of these are vigorous, at times nearly hysterical, responses by Walter Bock, chairman of the Standing Committee on Nomenclature (SCON) of the International Ornithological Congress, the always unanimous opinions of which are blindly anti-priority. It is time to recognize SCON for what it really is, a rubberstamp committee handpicked by the chairman to promote an agenda of "established usage" that, in the end, does not increase stability but instead panders to "the idiosyncrasies, conveniences and preferences of individual persons or groups" (Ng, 1991:88). The majority of members of SCON cannot be said to be systematists and the qualifications of some can only be their guarantee of acquiescence in anything the chairman may propose. SCON is not a representative body and is clearly not a forum for the "objective criticism and dissent" (Ng, 1991:89) that is essential for the science of taxonomy to progress. SCON should not, therefore, be the only organized voice in ornithological nomenclature.

For this reason, I would like to propose that the SAPE form its own Committee on Nomenclature (SAPECON) to evaluate proposals concerning avian nomenclature and to present the views of the Society to the International Commission on Zoological Nomenclature (ICZN). In order to insure the credibility of the committee (and to avoid the appearances of SCON) I would like to ask that prospective members have a published record of direct involvement with systematics and nomenclature, such as the description of new taxa or revisionary work entailing reference to the Rules of Zoological Nomenclature. Otherwise, I cannot see that there is any need to limit the size or membership of this committee. Any qualified member of SAPE who is willing to offer comments on matters of nomenclature and be a member of the committee is invited to contact me at the address below. I would also be interested in having the name of any member of the Society who would be willing to be a signatory to a brief, non-inflammatory letter to the ICZN endorsing Ng's essay in support of priority.

Storrs L. Olson

Curator, Division of Birds  
National Museum of Natural History  
Smithsonian Institution Washington, D.C. 20560, U.S.A.  
(president-elect American Society for Zoological Nomenclature  
President-elect Biological Society of Washington)

## News from the members

### ARGENTINA

Luis M. CHIAPPE is continuing his work on Cretaceous birds. Further material has been found during 1990-1991. Among these findings it is important to remark the first occurrence of Ornithurine birds in the Late Cretaceous continental deposits of Argentina. represented by a few - but diagnostic - fragmentary remains.

Recently, Luis organized a field trip to the Latest Cretaceous locality of El Brete (north-western Argentina), where the Enantiornithine type material was found. This trip -supported by the Frank M. Chapman Memorial Fund -was successful in that further enantiornithine material was recovered, including at least a humerus and a very robust femur (there are other remains that need to be prepared before confirming their avian identity).

Regarding Tertiary birds, during the last years joint expeditions of the State University of New York (Stony Brook) and the Museo Argentino de Ciencias Naturales (Buenos Aires) collected several - although fragmentary - avian remains in the Santacrucian (Early-Middle Miocene) beds of southern Argentina. Among these samples there are the first fossil birds recovered from the Ameghino's *Astrapothericulus* beds of the Pinturas Fm., where a preliminary study reveals the presence of Tinamidae, Anatidae, Falconidae, Strigidae, Cariamidae, and the oldest South American passerine. Eduardo TONNI, Jorge NORIEGA and Claudia TAMBUSI have just finished an analysis of the quantitative-qualitative faunal changes of Buenos Aires province birds during the late Cenozoic. Now they begin the study of an articulated and complete penguin skeleton of the Puerto Madryn Fn. (Mid Miocene) and a really big "condor" of the Chapadmalalan Fn. (late Pliocene).

Jorge NORIEGA is working in the "Mesopotamian" (Ituzaingo Fn., probably lower Pliocene) fossil birds of Entre Rios province (Argentina).

Claudia TAMBUSI is preparing partial publications of her doctoral thesis: The Upper Pliocene and Lower Pleistocene birds of Buenos Aires province (Argentina), which includes new forms of Rheiformes and Anseriformes, and the most recent record of *Psilopterus* (Chapadmalalan Fn., Mid Pliocene).

### AUSTRALIA

A few years ago a visiting palaeobotanist - Michael POLE, from New Zealand - discovered the impression of a foot in the Eocene deposits at Redbank Plains, a suburb of Brisbane, in south-eastern Queensland. This impression represents part of the foot of a bird, probably about the size of a modern bustard (*Ardeotis australis*). This is under joint study by R. E. MOLNAR and P. V. RICH, and seems, at least from a preliminary analysis, to show some similarity to the dromornithids. The description will hopefully be published in 1992.

Dr. Richard ROBINS, a curator of Anthropology at the Queensland Museum, has located a new Pleistocene fossil site on the Warburton River in central Australia, that has yielded well-preserved (but so far, isolated) bones of waterbirds and dromornithids. R. E. MOLNAR and Richard ROBINS hope to undertake further collecting from this locality .

Pat VICKERS-RICH is happy to inform the SAPE members that, after 8 years of work, she has just completed the book "Vertebrate Palaeontology of Australasia", edited in collaboration with I. M. MONAGHAN, R. F. BAIRD and T. R. RICE.

Bob BAIRD had to return to Australia but he found time to complete a number of items since the last SAPE newsletter (see Literature). He is concentrating on avian material from cave deposits, and hope to have a number of major works completed by the time the next newsletter is out.

## **BULGARIA**

Zlatozar N. BOEV studied the Upper Pleistocene bone material, from the Temnata Douпка Cave (West Balkan Mts.) dated 10,400 to 31,900 yr BP. it comprises 91 finds of 29 recent species, including *Aquila pomarina*, *A. chrysaetos*, *Aegypius monachus*, *Circus cyaneus*, *Bubo bubo*, *Strix aluco*, *Apus apus*, *Oenanthe oenanthe*, *Pyrrhula pyrrhula*, *Nucifraga caryocatactes*, *Pyrrhocorax graculus*, etc. The paper will be published in 1991 in France.

Zlatozar also studied the birds from the Eneolithic to Early Bronze Age sunken settlement at the Sozopol Black Sea bay. There are 196 bones of at least 10 species (*Gavia arctica*, *Podiceps cristatus*, *Phalacrocorax carbo*, *Aythya nyroca*, *Ardea cinerea*, several ducks and diving ducks, and *Fulica atra*, the most numerous as a game). The paper will be published in Bulgaria in English.

The earliest data on the Domestic Fowl (*Gallus gallus domesticus*) in Bulgaria (3 bones from the 7th century B.C., and a black figured kylix (wine bowl) from the third quarter of the 6th century B.C. with two pictures of cocks were discussed in a paper in press in Bulgaria (in English).

The Early Neolithic birds from the settlement at the town of Kazanluk were also studied. They include, among other species, *Grus grus*, *Otis tarda*, *A. chrysaetos*, *Tetrao urogallus*, *T. tetrix*, *B. bubo* etc... This paper is in press in Bulgaria.

The new excavations in the Upper Pliocene locality near the town of Varchets made it possible to collect about 100 new bird bones (at least 90 of them identifiable), and the total number of birds finds from this site reached up to 162. They belong to 20 species at least and most of them are identified only to family or genus level because of the lack of comparative skeletal material of exotic species. The Gallinaceous birds are best represented. Zlatozar finds that the Pliocene birds from Varchets are very interesting but cannot be studied and described without collaboration with colleagues from other countries, or at least work in foreign collections. So he would ask other SAPE members if they are interested. to join to this research.

In spite of various difficulties, he continues to collect bird skeletons and the Museum collection reached up to 1200 skeletons of 271 species.

## **CHINA**

Since there were some news about discoveries of the earliest birds and some objections about Archaeopteryx during the last years, the Chinese Bulletin of Biology asked Hsiang-k'uei YEH a paper about it, and a Chinese article named "Archaeopteryx in past and present times" appeared in 1989. Furthermore, a chapter named "A brief introduction to fossil birds" was recently completed by Hsiang-k'uei YEH for "Teaching References", a book compiled by the Society of Chinese Zoology, for zoological teachers who know indeed few about this subject.

## **FRANCE**

Between January and March 1991, Christine LEFEVRE took part in the archaeological survey in the Cape Horn archipelago, organised by the Mission préhistorique de Patagonie, conducted by D.

LEGOUPIL. Twenty nine middens were located, all of them presenting evidence of avifauna. Carbon datings will be known soon. The study of the bird remains is in progress. She can already tell the presence of *Phalacrocorax* sp. and *Tachyeres pteneres*, which are commonly found in such sites, associated with *Diomedea melanophris*, *Halobaena caerulea*, *Pelecanoides magellani*, *Puffinus griseus*, among others.

Christine's new program started this summer, with the first archaeological survey of Buldir Island (Aleutian Islands, Alaska), in collaboration with D. SIEGEL-CAUSEY (Museum of Natural History , Lawrence, Kansas), and D. CORBETT (US Fish and Wildlife Service). The 2 test pits excavated gave up thousands of bird remains, among marine mammals bones, lithic points and wood fragments. The study will be started soon.

At the Laboratoire d'Anatomie Comparee (M. N. H. N., Paris), she is still working on rearranging and computerising the bird comparative osteological collection.

Since the last SAPE newsletter, Cecile MOURER-CHAUVIRE has worked on a new family of Accipitriformes, from the Upper Eocene of La Bouffie, in the Phosphorites du Quercy, and on the Sandgrouse from the Paleogene of Quercy and from the Lower Miocene of Saint-Gerand-le-Puy and Paulhiac, in south-western France. It is the first time that fossil birds are reported from Paulhiac and all the remains belong to Sandgrouse. The Quercy deposits have yielded the remains of a very large, not previously described, Sandgrouse, the body mass of which must have been approximately three times larger than in the largest Recent forms.

Her research projects are: the Upper Pliocene birds of the Early Man site of Chilhac, in the Massif Central, the chapters on the French Paleogene and Pliocene Avian localities, for the book edited by J. MLIKOVSKY on the European Tertiary Avian Localities, and a paper for the next SAPE symposium, the topic of which has not yet been decided.

Jacques CHENEVAL is still very busy teaching in private secondary schools. Recently he also became Educational Director of a Training Centre for paramedical professions.

During his free time. Jacques is revising the avifauna from the Sansan locality (Middle Miocene of south-western France). This work will be part of a monograph devoted to this locality and which is to be published by the Museum National d'Histoire Naturelle de Paris.

As well as the revision of the Anatidae. presented during the first SAPE meeting. in Lyon. in 1985. this study will provide a lot of new data. thanks to the additional material from the new excavations. So the study of the Sansan Galliformes should help to clarify the particularly confused systematic situation of this group. Precisions on the systematic position of species such as *Necrornis palustris* and *Homalopus picoides* should also improve our knowledge about the groups of small non-passerine arboreal birds.

## GERMANY

D. S. PETERS presented a small raptor from Messel at the annual meeting of the "Deutsche Ornithologen-Gesellschaft" 1990, at Husum. So far, this new species is the earliest known member of the Accipitridae. A publication is being prepared.

Among the Messel birds under study two species are especially interesting. A member of the Cariamidae is represented by a nearly complete skeleton displaying several unexpected conditions. The most enigmatic feature is the surface of the cervicals that is densely covered by small tubercles. The other species is a small bird superficially similar to a today but with some characters reminding One of passerines.

At the IOC 1990 in Christchurch, D. S. PETERS gave a contribution on the zoogeographical relationships of the Eocene avifauna from Messel.

Bones from the wing of a white stork were recovered from a preboreal site near Bedburg-Königshoven (W - Germany). This is the earliest postglacial record of this species in Europe.

The preparations for the 3rd Symposium of the SAPE make progress. More than 50 contributions were announced. The second circular was sent to those members who responded to the 1st circular. The symposium will be held at Frankfurt am Main.

21 June - Arrival and registration.

22-25 June -Scientific program in the Senckenberg Museum and a half-day trip to Messel pit.

26 June - All-day trip to Taunus Mountains and Rhine valley.

Angelica HESSE has for two years a stipendium from the DFG (Deutsche Forschungsgemeinschaft) to study and describe the Middle Miocene Avifauna of Steinheim (MN 7), which started in July 1991. About 40 species lived in and at and nearby the Miocene lake of the Steinheimer basin, most of them belonging to waterbirds (Anseriformes, Gaviiformes, Podicipediformes, Palaelodidae, Phoenicopteridae, Sulidae, Pelecanidae, Ardeidae). The landbirds are represented by the Galliformes, Accipitriformes, Strigiformes, Gruiformes, and Psittaciformes. It is surprising that the avifauna of the nearby Nördlinger Ries which is only a little older (MN 6) than the Steinheimer basin has a strikingly different composition. This will be a point of special interest. The Messelrails (*Messelornis cristata*) of the Eocene oil shale of Messel are not forgotten. Angelica started to study an interspecific development based on about 400 specimens representing about 1 million years.

Finally, an osteological determination-key for gruiform birds is in press.

Harald PIEPER has worked on osteology and systematics of *Scolopax* and the Cardueline Finches.

## **GREAT BRITAIN**

David M. UNWIN communicates that the "Fossil Record of Aves", a compilation of the first, last and intermediate occurrences of all families of birds, and forming part of The Fossil Record 2, edited by M. J. BENTON and M. K. WHYTE, is now "in press". The book was to have been published this year, but the sheer scale of the work has slowed progress somewhat; all being well it will now come out sometime early next year. On the plus side, this has provided further opportunities for corrections and emendations, thus he would be very grateful if authors could send him any recently published information on fossil birds, particularly new occurrences which extend the temporal range of taxa. A number of correspondents have suggested that this compilation might be developed into a more comprehensive data base for the avian fossil record. D. UNWIN has considered this idea in terms of three basic questions: (1) what should the data base include? (2) what form should it take? (3) is it worth the effort? He will deal with each question in time.

For practical reasons the Fossil Record of Aves was compiled at the family level. A more comprehensive study ought to be set at the genus level and should, at the very least, include information on the content of the genus together with its geographic and temporal distribution. By focussing at the generic level much of the controversy over relationships could be avoided, though, obviously, some consideration of phylogeny would be necessary.

A computerised database is the most obvious way of conducting this project, but not necessarily the most practical. Widespread compatibility between computer systems has yet to be achieved and not everyone has access to a computer. For the present a printed version (stored on disc and thus easy to update) is probably the most practical method of producing and distributing a database.

A comprehensive compilation, in effect an updated and somewhat modified version of Brodkorb's catalogues, would be of great use to palaeornithology. Most importantly it would form a primary source of palaeornithological data, synthesising the deluge of information now being published on fossil birds and enabling us to produce a clear picture of the avian fossil record. There would also be many other potential uses. For example, at the SAPE meeting in Frankfurt. D. UNWIN hopes to show how his

current compilation can be used as a basis for investigating large scale patterns in the evolutionary history of birds.

Before he proceeds further however, he would like to invite any SAPE members who are interested in this project to send him their comments and suggestions, particularly with regard to the composition of the database and methods by which it could be prepared. Informal discussion of this project will, hopefully, be possible at the Frankfurt meeting.

Alick D. WALKER has at last published his monograph on *Sphenosuchus* (see Literature). Although this is a crocodylomorph, some workers may find it interesting as having a possible bearing on the question of the origin of birds. He would like to take this opportunity of stating that, in his opinion, the hypothesis of a derivation of birds from early crocodylomorphs is still valid. This is the view that he holds strongly after considering the question carefully over a number of years. His repudiation of this hypothesis in 1984 was a great mistake, the reasons of which would take too long to explain here.

He considers '*Archaeopteryx*' to be a glorified theropod dinosaur, unrelated to true birds. It is thus a remarkable example of convergence. The correct name to be applied to the six skeletal specimens is probably *Griphosaurus problematicus* Woodward, since the isolated feather is the holotype of *Archaeopteryx lithographica* von Meyer. The feather probably belongs to a true bird. *Griphosaurus* and *Protoavis* lack a prootic contact of the quadrate head, hence they are not birds.

He would also like to state that he has never embraced the theory of a theropod origin of birds, despite the fact that some authors have attributed this view to him.

## HUNGARY

D. JANOSSY is working on same materials from the Lower-Middle Pleistocene and Holocene. The former one (Beremend, Loc. 16-17, South Hungary) gives new proof for the generic range of the genus *Lambrechia* for *Francolinus capeki* (sternum fragment). New for the given territory and age are *Gallinula*, *Bombycilla* and *Porzana cf. parva*. Anatomically new objects are from *Otis (Tetrax) kalmani* phalanges.

In the Neolithic matter of Eastern Europe (viz. Eastern Hungary), Loc. Gyomaendrod, the second proof of *Otis tetrax* and the first proof of *Aquila cf. clanga* in the Holocene of Europe are present.

In the fauna of Verteszöllös (Western Hungary) the most important paleolithic station of the early man in Europe yielded the southernmost occurrence of the genus *Lagopus* in the Lower Pleistocene of the continent, together with the Great Older Pleistocene Vulture, *Gyps cf. melitensis* among ten "banal" bird species.

From zoogeographical point of view two new localities of birds are interesting. The first one originates from Turkey, from the shore of Sugla Gölü (32° 00' E" 37° 25' N.), is Holocene viz. Subrecent age, and the bane maner represents chiefly the Chukar (*Alectoris cf. graeca*), besides *Fulica atra* and some taxonomically uncertain remains of Passeriformes.

The other locality, in which the members of an expedition of the Hungarian Speleological Society collected some Upper Pleistocene viz. Holocene bone material, lies in Kirghizia (Syurpriz and Chon-Chunkur Caves, 72° 40' E., 40° 20' N.). The occurrence in one of the two localities of the Alpine Swift, *Apus melba*, and in the other one of the Eurasian Jay, *Garrulus glandarius*, indicates occurrences out of the boundaries of the breeding area of these species of today, Not unambiguously determinable remain of *Alectoris* is also present.

The newly determined remains of Rock Partridges affirm the fact that this "species group" never passed in Eastern Europe and Asia to the North of 45° N. latitude. In the Mediterranean-oriental territories however, they are (if present) always dominant in the fossil-subfossil bird faunas from the Lower Pleistocene (Greece-South-Ukraine) to the Upper Pleistocene-Holocene (Yugoslavia, Bulgaria, Turkey, Caucasus, Turkestan).

The detailed description of the Uppermost Miocene bird fauna from Western Hungary (Polgardi), preliminarily indicated in the SAPE 1988 Information Letter, is in print in the journal *Aquila*.

## NEW ZEALAND

Joseph McKEE has had a busy year with the collection of a number of fossil vertebrates from his Pliocene localities in the North Island. However, birds have proved to be elusive, with only bones of another pseudodontorn being collected. This specimen represents the fourth Pliocene pseudodontorn from New Zealand. It would appear that these birds were common in the New Zealand region during the Pliocene. The pseudodontorns would have had to compete with a variety of small cetaceans and seals, as well as the small penguin *Tereingaornis moisleyi*, for the squid and fish resources. With the apparent richness of the vertebrate life present in New Zealand during Pliocene times, it is only a matter of time before other marine birds are found.

Richard N. HOLDAWAY has completed his PhD thesis on the systematics and palaeobiology of the extinct New Zealand eagle *Harpagornis moorei* (Aves: Accipitridae). The thesis includes a revision of the Accipitridae based on a phylogenetic analysis of osteological characters, and an ecomorphological analysis of this very large (up to 13 kg) eagle in relation to other large raptors. Indirect and direct evidence support the hypothesis that the eagle killed medium-sized (80-100 kg) moas (Aves: Dinornithiformes) of a few preferred species and was not an obligate carrion eater. Contrary to popular ideas, the eagle's morphology suggests that the eagle could fly very well, and used a flapping fly pattern. There is evidence that the eagle's wing geometry changed over the past 20,000 years, with increasing density of vegetation, without change in body size or reduction in flying ability. Phylogenetically near *Aquila*, nevertheless it shared cranial features such as a slender skull and beak with accipitrid vultures, seemingly adaptations to dealing with large prey.

Richard N. HOLDAWAY has now joined Trevor WORTHY in a project to examine the Pleistocene and Holocene fossil bird faunas of the West Coast of the South Island of New Zealand. They hope to investigate the changes in composition of the fauna accompanying the vegetation changes at the Pleistocene-Holocene boundary, and compare these with changes in other areas, such as the drier eastern areas of the South Island. This will also involve analyses of the temporal changes in distribution and body size.

They are also working on a morphological phylogenetic analyses of the moas, and description of unique feature of the cranium, and their ontogeny.

Richard has several other minor projects in hand, including a paper verifying the generic position of the extinct harrier *Circus eylesi*. This bird, like the extinct Hawaiian form described by Olson & James (1991), had the wing proportions of an accipiter, but is definitely a harrier.

Phil MILLENER excavated in a small cave in Chatham Islands, and recovered much of a skeleton of *Pachyanas chathamica*, including the hitherto unknown sternum and complete bill - premaxilla and mandible were known only in part before - including a mandibular ramus which Phil found in a previous trip to Chatham. Phil is rewriting a paper of which Ron SCARLETT wrote a draft some years ago.

Beverley McCULLOCH has commenced a research project studying the nesting habits of moas (Dinornithiformes). Very little has been done in this field in the past although there are numerous reported nesting sites, with eggshell, which have been found under the protection of overhanging rock shelters. Most of these appear to have been used only by one individual bird at any one time.

However, there has been a recent discovery in the Marlborough region of a very large quantities of moa eggshell spread over a distinct geographical area; a headland of raised marine sediments. It has been estimated that the weight of the shell in this area may be measurable in tonnes. Beverley hopes to make an intensive survey of this area this summer but the present indications are that at least one moa species (yet to be determined) seems to have had a colonial nesting habit.

Over the last seven weeks, consultant palaeontologist, Trevor WORTHY, has been employed in the Department to work on the identification of material from Cheviot Moa Swamp (see Letters of information Nos. 1 and 3). Trevor's findings confirm the importance of this site -the material includes a high frequency of juvenile birds and more cranial elements than is usual in swamp collections. Indications are that we will also be able to identify definitely, for the first time, the gizzard contents of two further moa species, *Pachyornis elephantopus* and *Emeus crassus*, thus adding considerably to our knowledge of the diet and feeding habits of the various moa species.

Trevor WORTHY is continuing with studies of moas (Dinornithiformes). In 1987 excavations began in Honeycomb Hill Cave, Oparara, South Island, which enabled aspects of moa classification to be addressed and paleontological reconstructions to be made for this area for late Otira (last) Glacial (c. 20,000 yr BP) and late Holocene periods. The taxon *Megalapteryx benhami* was shown to be large individuals of *M. didinus* of glacial age. *Pachyornis australis*, previously known from only the holotype, was found to be abundant and shown to be specifically distinct from its congeners so was raised from synonymy with *P. elephantopus*. Various sites in the approximately 14 km of Honeycomb Hill Cave produced a total of 61 avian species: some species are restricted to the sites of Glacial age and others to Holocene sites.

Data from subalpine cave sites show that at least four moa species frequented the subalpine environment, and one, *M. didinus*, was probably a subalpine specialist. Marked sexual dimorphism in size has been demonstrated in two moa species *Euryapteryx curtus* and *Pachyornis mappini*. Most recently, data concerning distribution and relative frequency of moas from both natural and archaeological sites has been collated, enabling coarse habitat preferences to be suggested for each species (NZJ. Zoology). P. R. MILLENER, A. R. EDWARDS and T. WORTHY have also surveyed all the fossil moa bones older than about 75,000 yr BP, finding 40 records. None are older than 2.5 myr and all are referable to known species (J. Royal Soc. NZ.) These and other studies (see Literature) support the recognition of only 11 species of moa in two families. A key to the leg bones of these taxa has been published.

Current studies centre on the moas in the genera *Euryapteryx* and *Emeus*. A paper reviewing the classification and providing a redescription of species included within these genera is near completion. One of the spectacular finds of the last couple of years was the mummified remains of a moa *Megalapteryx didinus*. It is over 3000 years old and has provided well preserved DNA. The DNA from this and other mummified moa specimens are being studied by A. COOPER at Victoria University, Wellington.

## **POLAND**

Zygmunt BOCHENSKI works with Early Holocene remains of birds from Nemrik. in North Iraq, dated from about 8500 y. B.P. He also finishes the identification of the bird bones from 5 Austrian caves (Upper Pleistocene and Holocene).

Together with Zbigniew BOCHENSKI Jr., Zygmunt submitted to Belgian Journal of Zoology the paper "Correlation between the wing length of living birds and measurements of their bones" presented by Zbigniew in 1989 in Antwerp during the 3rd Intern. Congress of Vertebrate Morphology.

Zbigniew BOCHENSKI Jr. continues his studies on comparative osteology of grebes. He received DAAD grant for finishing the paper at the University of Kiel and will stay there till July 1992.

Teresa TOMEK works now mainly with completing of the paper on North Korean birds, this paper should be ready next year. So, her works on osteology of Corvidae, as well as on fossil birds. are temporarily pressed to the second plan.

The comparative collection of recent bird skeletons. according to the most actual list (Sept 1991) contains 2440 complete skeletons. representing 797 species of 110 bird families. The other 25 species

are represented by partial skeletons only. The exchange of specimens is highly appreciated.

## **ROMANIA**

E. KESSLER is going on checking the fossil bird faunas from Romania. and he is preparing his work for the SAPE conference in Frankfurt about the fossil fauna of Betfia.

## **SPAIN**

Adolfo AGUILAR and Francisco HERNANDEZ are going to organize the first meeting of a Bird Remains working group, under the patronage of the International Council for Archaeozoology (ICAZ). This meeting will be held in Madrid, from 7 to 10 October 1992. For information, please contact : Laboratorio de Arqueozoologia, Departamento de Biología, Facultad de Ciencias C-XV, Universidad Autonoma de Madrid, Cantoblanco, 28049 Madrid, ESPANA

## **SWEDEN**

Most of the Tommy TYRBERG's time during the past year has been devoted to modern birds. However the monograph on Swedish fossil and subfossil birds that he is writing together with Per ERICSON is at long last almost finished. He is continuing his study of Palearctic Pleistocene avifaunas and their relevance to modern avian distribution patterns. This work has at last resulted in a couple of papers (see Literature). At the moment he is working on a paper on the paleobiogeography of the *Lagopus* grouse and collating data on the fossil record of Sylviidae for a friend who is doing his PhD thesis on warbler phylogeny.

Per ERICSON returned to Sweden after having spent eighteen month at the National Museum of Natural History. Washington DC. studying recent and fossil birds. His work on the evolution and systematics of the Paleogene family Presbyornithidae is almost completed and the results will be presented at the 1992 SAPE meeting. Beginning in October 1991. he was hired as curator of birds at the Swedish Museum of Natural History. an event he was very much looking forward to.

## **UGANDA**

Dr. Thomas SCHLUTER is now Professor in the Department of Geology of the Makerere University at Kampala.

## **UNITED STATES**

Ken CAMPBELL reports that the volume from the II International SAPE symposium is in the proof stage, and all authors should now have received (and returned!) their proofs to him. Expected date of publication is about 3 months after all proofs have been returned. There will be a second proof stage ut authors will see these only in exceptional instances.

Steve EMSLIE is now teaching part-time as a Lecturer in the Environmental Studies Department, University of California, Santa Cruz. Between teaching duties, he has maintained his research on fossil and living birds and has just published, together with Sharon MESSENGER, a note about pellet and bone accumulation at a colony of Western Gulls (see Literature). This paper documents the large amount of bone that has accumulated on Southeast Farallon Island, 42 km west of San Francisco, as a result of foraging activities by gulls. Some of the bones represent prey taken from distant environments and have important taphonomic implications. He also published, together with P. HENDERSON and D. G.

AINLEY, a paper on the primary moult in Cassin's Auklet

Steve has just received a grant from the National Science Foundation (SGER Program) to complete excavations at a late Pliocene fossil deposit in Florida. The site is at the Richardson Road Shell Pit near Sarasota and contains hundreds of bones (including articulated skeletons) of a single species of cormorant. The remains include well-preserved and complete skulls, limb bones and other elements that will provide considerable information on the fossil history and systematics of this group. Work on this site will be completed in September and early October 1991.

Before returning to Santa Cruz to resume teaching in January 1992, Steve is planning to spend two months in the Antarctic assisting a fellow researcher with a long-term study on penguins and skuas. Any correspondence to Steve should be sent to his address in Santa Cruz.

Jim HAYWARD, from Andrews University in Michigan, continues to study the fossilization of amniote eggs. He is currently completing a series of experiments on eggshell taphonomy which he plans to summarize at the SAPE symposium in June 1992. He has recently published two papers on eggshell taphonomy (see literature).

Fritz HERTEL continues work on his dissertation studying the functional similarities and differences among extant vulture communities with a high diversity of species: East Africa, the Indian subcontinent, and Amazonas. These will be compared with the Pleistocene Rancho La Brea avifauna to determine the similarities of these convergent communities through time. Functional differences between vultures and raptors are also being studied to understand better the adaptations of large flesh eating birds.

Helen JAMES continues her research on Hawaiian fossils. Last summer she made a field trip to Madagascar, where she hopes to begin fossil bird studies.

Storrs OLSON continues work on fossils from Hawaii and the Bahamas. In addition he and Pamela RASMUSSEN are in the process of a major rewriting of a long dormant manuscript on the abundant Mio-Pliocene marine avifauna from the Lee Creek phosphate mine in North Carolina. The first draft of this manuscript was finished in September 1973 and it saw several subsequent revisions. Instead of a preliminary paper, as first intended, it is hoped that the final version will be a complete analysis of the avifauna, with emphasis on the numerically dominant early Pliocene avifauna of the Yorktown Formation. Following this, Storrs and Pam hope to continue the collaboration and extend their studies to the avifauna of the Miocene Chesapeake Group, which would include more detailed analysis of the contemporaneous avifauna of the Pungo River Formation of North Carolina.

In March 1991 Kenneth WARHEIT began a postdoctoral fellowship in the Division of Birds, Smithsonian Institution. Ken will be working with Richard Zusi on the evolution of the shoulder and wing in wing-propelled diving seabirds. Ken has also completed his summary on the fossil history of seabirds in the North Pacific, and has submitted a manuscript on this subject to the journal *Paleobiology*. One main point of this paper is that changes in seabird diversity in the North Pacific during the Tertiary appear to be closely related to stages of thermal isolation and refrigeration of Antarctica, and the development of an eastern boundary current in California (California Current upwelling system). Ken is currently completing a manuscript on some theoretical aspects in the taxonomy of fossils. The manuscripts should be completed during the first weeks of October 1991.

## URSS

Moscow

E. KUROCHKIN and A. KARKHU communicate that their expedition in Mongolia was fully successful. In four Upper Cretaceous localities in the South of Gobi Desert, they found new and good fossil birds, but nothing new in two Lower Cretaceous localities.

Konstantin MIKHAILOV is engaged in SEM-investigation of Recent avian eggshells in phylogenetic

purposes, continues the description of eggshells from the Cretaceous of Mongolia. and exerts same activity in socio-ethological problems of avian specification and ecology .For the third SAPE symposium he intends to prepare a report about the ultra-microstructure peculiarities of egg shell of Falconiformes and Ciconiiformes as applied to the question of Sibley's "Suborder Ciconii". In connection with his work, BE HAS A STRONG REQUEST TO HIS COLLEAGUES. He still cannot manage to get eggshells of *Sagittarius*, *Scops*, *Balaeniceps*, *Cochlearius*. Even very small pieces of eggshell (about 3 x 3 mm), both incubated and not incubated, including old connection material, are quite enough. Any pieces of eggshells of *Apteryx*, Pelecanoididae, Anhimidae, *Anseranas*, Mesitornites, *Turnix*, *Pedionomus*, Psophidae, Heliornithidae, Rhinocetidae, Jacanidae, Podargidae, Aegothelidae, Hemiprocidae, Coliidae, Trogonidae, Todidae, Momotidae, Brachipteraciidae, Leptosomatidae, Phoeniculidae, and same Cucules (Couinae, Centropodinae, *Phoenicophaeus*) also should be greatly appreciated.

Leningrad

Lev A. NESSOV was in Oslo, Stockholm, and Uppsala in October 1990. In the Swedish Museum of Natural History in Stockholm (with the help of Prof. I. Bergström, Dr. L. Werdelin and other colleagues), and in the Palaeontological Museum of the University of Uppsala (with the help of Dr. S. Stuenes and Dr. I. Schobel) he had the opportunity to observe the collection of Early Campanian (Late Cretaceous) vertebrates, from Scania, southern Sweden, mainly from Ivö Klack locality. In boxes with most broken and usually undetermined fragments of bones of plesiosaurs, mosasaurs, protostegid and other sea turtles, large pycnodontiform and teleost actinopterygians, pieces of tooth plates of holocephalian fishes and shark teeth, were found several important bones of Campanian birds. These are a part of tarsometatarsus of an advanced hesperornithiform, which is larger than the North American *Hesperornis regalis* Marsh (finding of G. Holm in 1915), a part of tibiotarsus of a relatively small and primitive diving bird, possibly of the order Hesperornithiformes, which is more primitive than *Baptornis advenus* Marsh and approximately of the same size as *Lonchodytes estesi* Brodkorb or a little larger, but more advanced than this species (finding of R. Hägg in 1918), and the remains of a relatively large bird, with long tibiotarsus and relatively large hollows in bones (finding of G. Holm in 1914 and C. Wiman in 1919). These birds lived in the sea with rocky coastal cliffs, with biogenic carbonate beach sands and gravels. Waters had a relatively high biological productivity, caused by near shore upwelling. In these assemblages of fossils, several bones of dinosaurs (theropods and possibly armatosaurs and sauropods) were also determined.

Observation of ornithological, geological and hydrological literature and new hesperornithiform material from Sweden and South-Western Kazakhstan showed that large flightless Cretaceous Gaviomorphae lived in areas of oceanic and estuarine upwellings, as also in meridional straits of Northern Hemisphere, connected warm seas and relatively cold Northern Polar ocean. These straits had strong peculiar meridional currents, some areas of these straits had stratification of waters of different temperature, but in other parts of straits deep and surface water masses mixed, with the result of increasing of the bioproductivity, as it is usual in upwelling zones. Extinctions of different small and large oceanic hesperornithiforms (as also pteranodontid pterosaurs, some genera of mosasaurs and pliosaurs and possibly protostegid sea turtles, some teleost predators) near the boundary between Campanian and Maastrichtian (in latest Campanian-Middle Maastrichtian interval) were possibly related to the changes of the vertical circulation in the ocean, mostly to the rebuilding of upwelling systems of all planet. On the basis of these ideas were predicted the presence of hesperornithiform bird remains in the Lower Campanian of Volgograd District (in area of the southern part of the Turgay Strait of the Cretaceous time). After the instruction and explanation to A. A. Jarkov, Volgograd Regional Museum of Natural History, he found in his collection two fragments of bones which were similar to tibiotarsi of Hesperornithes, just from the Lower Campanian level. These bones come from the right bank of the Don River, 5 km south from the Lugovskaya settlement. The comparison of photographs and drawings of

these bones with North American original and cast of hesperornithiform material in the American Museum of Natural History , New York. the Royal Tyrrell Museum, Drumheller, the Royal Ontario Museum, Toronto, the University of Alberta, Edmonton. the University of California Museum of Paleontology, Berkeley, the Vertebrate Paleontology Laboratory of the University of Texas, Austin, and the Museum of Paleontology of the University of Kansas, Lawrence, in May and June 1991 , showed that these bones from the Don River belong without any doubt to the Hesperornithes, possibly to a new form. It is the first finding of the remains of this group on the territory of the Russian Republic, and it is the fourth hesperornithiform locality area in the Old World (after Scania. Southern Mongolia. and north-western Kazakstan). In the Museum of Natural History of the University of Kansas, Lev A. NESSOV received the hospitality of Dr. Larry D. MARTIN. He was overwhelmed by the diversity and the importance of the fossil bird collection of this Museum, and the time of visit was too short to see all. In the collection of the University of California Museum of Paleontology, Lev A. NESSOV found birds among the collection of mainly fossil turtles and mammals, with the help of Dr. J. H. Hutchison. These birds are a distal part of tibiotarsus of middle-sized bird without supratendinal bridge (Bug Creek Anthills D locality , McCone County of Montana, Hell Creek Formation, Puercan), a distal part of tarsometatarsus of a presbyornithid-like charadriiform (Bug Creek West locality, same area and age as the above specimen), a distal part of humerus of a relatively large alexornithid-like Enantiornithes (Long Tooth 1 locality in Garfield County of Montana, Hell Creek Formation, Maastrichtian), a part of a short tarsometatarsus of a relatively large water bird, with a series of extremely deep grooves for toe tendons on the wide anterior surface of the bone (On Top of Old Ironstone locality, Garfield County of Montana, Hell Creek Formation, Maastrichtian).

Bird and presumably birds bones were also determined among unsorted material in the American Museum of Natural History , the Royal Ontario Museum, the Royal Tyrrell Museum, and the San Diego State University .These short observations, especially the relatively large abundance of bird bones in channel material, showed that North American Late Senonian and Early Paleogene channel deposits are very perspective for future study of evolution of birds, through the important Campanian-Maastrichtian and Maastrichtian-Paleocene boundaries. Many of these channels were not usual river channels, but peculiar deep channels between shallow brackish water reservoirs, which had far weak connection with the ocean.

The appearance of the difference in the atmospheric pressure between two reservoirs caused current in the channel. After the stopping of the wind, the current will be reversed. Two directional currents blocked the lateral shift of this type of channels. After the tectonic subsidence of the area, several stores of channel deposits formed one above one another. Unoxygenated water was formed in the depth of these channels, in the periods of time without strong winds and wind currents. In the time with strong winds and strong currents, unoxygenated cold waters from the depth of the channel came from shallow parts of adjacent reservoirs, and many fishes and amphibians died there. Carrion on the surface of water and alongside the banks attracted many water and terrestrial birds (as also fish- eating pterosaurs, insects, lizards, and mammals), therefore, near the mentioned channels, the burial of bird bones were also not unusual.

Concentration and migration of phosphate ions in unoxygenated deep water of channels and in water between the particles of the sediment protected thin bird bones from dissolution by organic and unorganic acids. Phosphatization of soft tissues of animals (e.g. gills, mantles and siphons of bivalves, groups of eggs of insects, honey-combs, parts of bodies of different insects or crayfishes) was very common for this type of channels (see for example the vertebrate localities of the Santana Formation in Brazil), but this phosphatization was impossible in the fresh water of rivers. It is interesting that in the unsorted screen material from Bug Creek (Latest Maastrichtian- Paleocene) housed in the Royal Ontario Museum, among bird and other vertebrate material, Lev A. NESSOV found phosphatized three-dimensional insect of the same group as in brackish water channel deposits of the Dzhyrakuduk locality

of Uzbekistan. Bug Creek system of channels, with bird bones, was not the river channel system. For the study of taphonomy of Cretaceous bird bones, Lev A. NESSOV is going to visit the Central Kizylkum Desert, especially the Coniacian channels in the Dzhyrakuduk locality.

In September 1991, Lev A. NESSOV and A. V. PANTELEEV found 15 bird bones in the Coniacian of Dzhyrakuduk. They include coracoids of Enantiornithes, the size of which is intermediate between *Asiotus* and *Otus scops*. During the last days of the field season, Lev A. NESSOV, together with A. A. YARKOV and A. V. PANTELEEV, worked in the Don River basin, district of Volgograd, and found new Early Campanian Hesperornithid material.

The recent work of Olga POTAPOVA was in Kirgizia, south-west of Fergana Valley, in a foothills of Turkestan Mountains. It is the situation of the famous Lower Eocene locality of Andarak 3 (in literature it was erroneously mentioned as Andarak 2) with rich remains represented by sharks, chimeras, rays, pisces, crocodiles, mixodonts, ctenodactyloid rodents, hares and others (with many new taxa of vertebrates, now under description by Alexander A. A. VERIANOV). Here, in Spring 1988, 10 bird remains were found for the first time in this site by O. POTAPOV A, A. AVERIANOV and A. S. GALIEV A. Three of them belong to unidentifiable upper part of humerus and distal end of carpometacarpus (both of Willow Grouse size), diaphysis of ulna (large predator accipitrid size). The others are represented only by 7 phalanxes. Preliminary identifications are: two belong to Presbyornithidae family (showing similarities with Anseriformes), a large phalanx 2 of digit II reminds one a buzzard, carrying some primitive features. Other bones are fragmented, and apparently belong to Passeriform-like birds. All these bones, together with previously found material, are under description by O. POTAPOV A, and she intends to show them in an oral presentation at the third Symposium of the SAPE in 1992.

G. BARYSHNIKOV and O. POTAPOVA began to study the Pleistocene collection from Acheulean layer of Treugolnaya Cave in northern Caucasus. It is the first Acheulean site in northern Caucasus, it is situated at the altitude of 1650 m above the sea level. The preliminary age of this site is Cromerian.

## Tbilissi

The main results of the paleornithological activities of N. I. BURCHAK-ABRAMOVICH during the last years are as follows:

- 1) Birds from the locality of Binagady, Middle Pleistocene, vicinity of the city of Bakou, Azerbaidjan. This is a very important accumulation of remains of birds and mammals which perished in an old aquatic asphalted basin. It is one of the richest accumulation of fossil birds in the world. At the present time, the orders Gaviiformes, Anseriformes, Falconiformes, Galliformes and Passeriformes are under study by N. I. BURCHAK-ABRAMOVICH, together with other collaborators. Zlatozar BOEV, from Bulgaria, is also participating in the study of Ciconiiformes and Gruiformes. A large monograph, which will recapitulate all the works on fossil birds from Binagady, is going to be published in Baku.
- 2) N. I. BURCHAK-ABRAMOVICH is continuing, in collaboration with S. M. ASLANOVA, the study of the skull of the Oligocene pseudodontom *Caspiodontornis kobystanicus*. They are considering the possibility of placing this taxon in its own fossil family.
- 3) The morphological study of the skeleton of the Caucasian Blackcock, *Lyrurus mlokosiewiczzi* Tacz. is continuing. Significant differences in the structure of the skeleton between the two species *Lyrurus tetrrix* and *L. mlokosiewiczzi* have been noticed.
- 4) The bony remains of the Pleistocene *Gallus* from the Caucasus territory, coming mainly from paleolithic caves, are studied. The description of a new species, *Gallus karabachensis*, from the Acheulean site of the Azykh Cave, in the Upper Karabakh, was published in 1989, in collaboration with S. ALIEV. Another new species of *Gallus*, from the Kudaro Cave, in South Ossetia, is going to be published in collaboration with O. POTAPOV A.

- 5) Description of the Upper Paleolithic bird remains from Soungir, in the Moscow area, in the valley of the river Kliaz'ma. Among these are the remains of a *Gallus* sp., the presence of which is an enigma.
- 6) The description of the femur of a giant Ostrich, *Struthio dmanisensis* nov. sp., from Dmanisi in eastern Georgia, has been published in collaboration with A. VEKUA. The age of this locality is Preacheulean Paleolithic, it is the oldest paleolithic station in the USSR.

## LITERATURE

- BAIRD R. F. 1990. The fossil assemblage from Weekes Cave (N-15), Nullarbor PLain, South Australia: collections, additions and reinterpretation. *S. Austr. Om.*, 31: 29-35.
- BAIRD R. F. 1991. Holocene avian assemblage from Skull Cave (AU-8), south-western Western Australia. *Rec. West. Austr. Mus.*, 15: 267-286.
- BAIRD R. F. 1991. The dingo as a possible factor in the disappearance of *Gallinula mortierii* from the Australian mainland. *Emu*, 91.
- BARYSHNIKOV G. F. & CHEREPANOV G. O. 1985. The birds of the Great Caucasus in Paleolithic and Mesolithic. *Omitologya*, 20: 139-160 (in Russian).
- BARYSHNIKOV G. F. & POTAPOV A O. R. 1988. The birds of the Middle Paleolithic of Crimea. *Proceedings of the Zoological Institute, USSR Acad. Sci.*, 182: 30-63 (in Russian).
- BEAUCHAMP A. & WORTHY T. H. 1988. The takahe's decline in distribution - a re-examination. *Journ. Roy. Soc. New Zealand*. 18: 103-112.
- BOEV Z. & RIBAROV G. 1990. Ornithofaunata na potunaloto selishte pri Urdoviza (dn. Kyten) ot rannobronzovata epoha [The avifauna of the sunken Early Bronze Age settlement at Urdoviza (present Kyten)]. *Archeologia, Bulg. Acad. Sci.*, 2: 53-57.
- CHIAPPE L. M. 1990. A nightless bird from the Late Cretaceous of Patagonia (Argentina). *Archosaurian Articulations*, 1 (10): 73- 77.
- CHIAPPE L.M. & SORIA M.F. 1990. Phororhacos Ameghino 1889 (Aves: Groiformes) proposed conservation. *Bulletin of zoological Nomenclature*, 47 (3): 198-201.
- CHIAPPE L.M. 1991. Cretaceous birds of Latin America. *Cretaceous Research*, 12: 55-63.
- CHIAPPE L.M. 1991. Fossil birds from the Miocene Pinturas Formation of Southern Patagonia. 51th Annual Meeting of the Soc. Vert. Paleont., October 1991, San Diego, Abstract, *Journ. Vert. Paleont.*, 11 (3 suppl.): 21A-22A.
- ELORZA M. 1989. Avifauna de la cueva sepulcral de Urtao II (Onati, Guipuzcoa). *Munibe (Antropologia- Arkeologia)*, 41: 79-80.
- ELORZA M. 1990. Restos de aves en los yacimientos prehistoricos vascos. *Estudios realizados. Munibe (Antropologia-Arkeologia)*, 42: 263-267.
- ELZANOWSKI A. 1991. New observations on the skull of *Hesperornis* with reconstructions of the Bony Palate and the Otic Region. *Postilla*, 207: 1-20.
- ELZANOWSKI A. & GALTON P. M. 1991. Braincase of *Enaliornis*, an Early Cretaceous bird from England. *Jour. Vert. Paleont*, 11 (1): 90-107.
- EMSLIE S. D. & MESSENGER S. 1991. Pellet and bone accumulation at a colony of Western Gulls (*Larus occidentalis*). *Journ. Vert. Paleont*, 11: 133-136.
- EMSLIE S. D., HENDERSON P. & AINLEY D.G. 1990. Annual variation of primary molt with age and sex in Cassin's Auklet (*Ptychoramphus aleuticus*). *Auk*, 107: 689-695.
- FLORIT X., MOURER-CHAUVIRE C. & ALCOVER J.A. 1989. Els Ocells pleistocenes d'Es Pouas, Eivissa. *Nota preliminar. Bull. Inst. Catal. Rist natur.*, Barcelona. 56 (Sec. Geol. 5): 35-46.
- HAYWARD J. L., AMLANER C. J. & YOUNG K. A. 1989. Turning eggs to fossils: a natural experiment in taphonomy. *Jour. Vert. Paleont*, 9 (2): 196-200.
- HAYWARD J. L., HIRSCH K. F. & ROBERTSON T. C. 1991. Rapid dissolution of avian eggshells

- buried by Mount St Helens Ash. PaJaios, 6 (2): 174-178.
- HESSE A. 1988 a. Die +Messelornithidae -eine neue Familie der Kranichartigen (Aves: Gruiformes: Rhynocheti) aus dem Tertiär Europas und Nordamerikas. J. Orn., 129: 83-95.
- HESSE A. 1988 b. Taxonomie der Ordnung Gruiformes nach osteologischen morphologischen Kriterien, unter besonderer Berücksichtigung der +Messelornithidae HESSE 1988. Courier Forschungsinstitut Senckenberg, 107: 235-247.
- HESSE A. 1989. Die Messelrallen - Rekonstruktion eines Lebensbildes. Natur und Museum, 119 (3):110-112.
- HESSE A. 1990. Die Beschreibung der Messelornithidae (Aves: Groiformes: Rhynocheti) aus dem AlttertiärEuropas und Nordamerikas. Courler Forschungsinstitut Senckenberg, 128: 1-176.
- HOLDAWAY R. N. 1990. *Harpagornis assimilis* Haast, 1874, a synonym of *Harpagornis moorei* Haast, 1872 (Aves: Accipitridae). New Zealand natural Sciences, 17: 39-47.
- HOLDAWAY R. N. 1990. Changes in the diversity of New Zealand forest birds. New Zealand Journal of Zoology, 17: 309-321.
- JAMES H. F. & OLSON S. L. 1991. Description of Thirty-two New Species of Birds from the Hawaiian Islands: Part II. Passeriformes. Ornithological Monographs, 46: 1-88.
- JANOSSY D. 1990. Vertebrate Fauna of site II. in: Vertesszölös; Site, man and culture. Akademiai Kiado, Budapest: 187-229.
- JANOSSY D. & TOPAL G. 1990. Vertebrate faunistical data from two cave fillings in Kirghizia. Karszt-es Barlang, 1990, 1:50-52.
- KOCK D. und PETERS D. S. 1990. Senckenbergische Forschungen über die afrikanische Landfauna seit 1966. Natur und Museum, 120: 58-67.
- McNAMARA G. C. & BAIRD R. F. 1991. A Late Pleistocene geographical range extension for *Gallinula mortierii* (Aves, Gruiformes, Rallidae ): Wyandotte Formation, northern Queensland. Alcheringa, 15: 176.
- MILLENER P. R. & WORTHY T. H. 1991. Contribution to New Zealand's late Quaternary avifauna. II: *Dendroscansor decurvirostris*, a new genus and species of wren (Aves: Acanthisittidae). Journ. Roy. Soc. New Zealand, 21 (2): 179-200.
- MOURER-CHAUVIRE C. & ANTUNES M. T. 1991. Presence du grand pingouin, *Pinguinus impennis* (Aves, Charadriiformes) dans le Pleistocene du Portugal. Geobios, Lyon, 24 (2): 201-205.
- OLSON S. L. 1990. Further Palaeontological Potential of St Helena. In : P. PEARCE-KELL Y & Q.C.B. CRONK (Eds.) St. Helena Natural Treasury, Zool. Soc. London: 11-12.
- OLSON S. L. 1991. The Prehistoric Impact of Man on Biogeographical Patterns of Insular Birds. In : International Symposium on Biogeographical Aspects of Insularity (Rome, 18-22 may 1987). Accad. naz. Lincei, Atti Conv. Lincei, 85: 45-51.
- OLSON S.L. & DEN HARTOG J.C. 1990. Former breeding of *Sula dactylatra* in the Cape Verde Islands. Bull. Brit Ornith. Club, 110 (1) : 10-12.
- OLSON S. L. & JAMES H. F. 1991. Description of Thirty-two New Species of Birds from the Hawaiian Islands: Part I. Non-Passeriformes. Ornithological Monographs, 45: 1-88.
- OLSON SL., PREGILL G.K. & HILGARTNER W .B. 1990. Studies on Fossil and Extant Vertebrates from San Salvador (Watling's) Island, Bahamas. Smiths. Contr. Zool., 508: 1-15.
- PETERS D. S. 1987. Mechanische Unterschiede paläognather und neognather Vogelschädel. Natur und Museum, 117 (6): 173-182.
- PETERS D. S. 1987. Ein "Phorusrhacide" aus dem Mittel-Eozan von Messel (Aves: Groiformes: Cariamae). Docum. Lao. Geol. Lyon, 99: 71-87.
- PETERS D. S. 1987. *Juncitarsus merkei* n. sp. stützt die Ableitung der Flamingos von Regenpfeifervogeln (Aves: Charadriiformes: Phoenicopteridae). Courier Forschungsinstitut Senckenberg, 97: 141-155.

- PETERS D. S. 1988. Ein vollständiges Exemplar von *Palaeotis weigelti* (Aves: Palaeognathae). Courier Forschungsinstitut Senckenberg, 107: 223-233.
- PETERS D. S. 1988. Paläornithologen-Tagung in Los Angeles. Natur und Museum, 119 (5): 173-174.
- PETERS D. S. 1989. Naturkundemuseum und Wissenschaft. Museumkunde 54 (3): 155-161.
- PETERS D. S. 1989. Fossil Birds from the Oil Shale of Messel (Lower Middle Eocene, Lutetian). Acta XIX Congressus Internationalis Ornithologici, 2: 2056-2064.
- PETERS D. S. 1989. Warum die Läufer unter den Sperlingsvögeln ihre Hinterzehen behalten. Natur und Museum, 119 (6): 177-183.
- PETERS D. S. 1991. Behavior plus "Pathology" - the Origin of Adaptation ?, in SCHMIDT-KIITLER, N. & VOGEL K (Eds.) : Constructional Morphology and Evolution. Springer Verlag, Berlin, Heidelberg: 141-150.
- POTAPOVA O. R. 1985. Game birds (genus *Lagopus*) in the Pleistocene of northern Urals. Proceedings of the Zoological Institute, USSR Acad. Sci., 20: 139-160 (in Russian).
- POTAPOVA O. R. 1990. Bird remains from the Pleistocene deposits of Medvezhya Cave in the northern Urals. Proceedings Zoological Institute, USSR Acad. Sci., 212: 135-153 (in Russian).
- POTAPOVA O. R. 1991. Bird remains from Palaeolithic layers in Bolsboi Glukhoi Grotta at Middle Urals. VI Coordinative Meeting for study of mammoth and mammoth's faunas. Leningrad, 14-16th May 1991, Abstracts, p. 41-43 (in Russian).
- SCHLUTER T. 1991. Systematik, Palökologie und Biostratonomie von *Phalacrocorax kuehneanus* nov. spec., einem fossilen Kormoran (Aves: Phalacrocoracidae) aus muunasslich oberpliozilen Phosphonten N- Tanzanias. Berliner geowiss. Abh., (A), 134: 279-309.
- STREET M. & PETERS D. S. 1991. Ein früher nacheiszeitlicher Nachweis des Weißstorches (*Ciconia ciconia*) aus dem Erfttal. J. Orn. 132:102-103.
- TYRBERG T. 1990. Sveriges fågelfauna före år 1700 - en kort historik. SOF Sveriges Fåglar , Second Edition: 265-268.
- TYRBERG T. 1991. Arctic, Montane and Steppe birds as Glacial relicts in the West Palearctic. Om. Verb., 25: 29- 49.
- TYRBERG T. 1991. Crossbill (Genus *Loxia*) evolution in the West Palearctic - a look at the fossil evidence. Omis Svecica, 1:3-10.
- TYRBERG T. & ERICSON P.G.P. 1991. Upplands fågelliv från stenålder till medeltid [The subfossil avian record in Uppland]. Fåglar i Uppland, 18: 27-38.
- VIGNE I. D., LEFEVRE C., THIBAUT I. C. & GUYOT I. 1991. Contribution archeozoologique a l'histoire recente des oiseaux marins de l'île Lavezzi (Corse, XIVo-XXo siecles). Alauda, 59 (1): 11-21.
- WALKER A. D. 1990. A revision of *Sphenosuchus acutus* Haughton, a crocodylomorph reptile from the Elliot Formation (late Triassic or early Jurassic of South Africa). Phil. Trans. R. Soc. London, B 330: 1-120.
- WARHEIT K. 1.1991. Book review: Recent Advances in the Study of Neogene Fossil Birds. Auk 108:447-449.
- WORTHY T. H. 1987. Sexual dimorphism and temporal variation in the North Island moa species *Euryapteryx curtus* (Owen) and *Pachyornis mappini* Archey. Nat Mus. New Zealand Rec., 3 (6): 59-70.
- WORTHY T. H. 1988. A re-examination of the moa genus *Megalapteryx*. Notornis, 35: 99-108.
- WORTHY T. H. 1988. An illustrated key to the main leg bones of moas (Aves: Dinornithiformes). Nat. Mus. New Zealand Misc. Publ. Series, 17: 1-37.
- WORTHY T. H. 1988. Loss of flight ability of the extinct New Zealand duck *Euryanas finschii*. Journ. Zool. London, 215: 619-628.
- WORTHY T. H. 1989. Validation of *Pachyornis australis* Oliver (Aves: Dinornithiformes), a medium sized moa from the South Island, New Zealand. New Zeal. Journ. Geol. Geoph., 32: 255-266.

- WORTHY T. H. 1989. Mummified moa remains from Mt Owen, northwest Nelson. *Notornis*, 36: 36-38.
- WORTHY T. H. 1989. Number of presacral vertebrae in *Dinornis*. *Notornis*, 36: 170.
- WORTHY T. H. 1989. Moas of the subalpine zone. *Notornis*, 36: 191-196.
- WORTHY T. H. 1989. The glossohyal and thyroid bone of *Aptornis otidiformis*. *Notornis*, 36: 248.
- WORTHY T. H. 1989. Aspects of the biology of two moa species (Aves: Dinornithiformes). *New Zeal. Journ. Archaeol.*, 11: 77-86.
- WORTHY T. H. 1989. An analysis of moa bones (Aves: Dinornithiformes) from three lowland North Island swamp sites: Makirikiri, Riverlands, and Takapau Road. *Journ. Roy. Soc. New Zeal.*, 19: 419-432.
- WORTHY T. H. & MILDENHALL D.C. 1989. A late Otiran-Holocene paleoenvironment reconstruction based on cave excavations in northwest Nelson, New Zealand. *New Zeal. Journ. Geol. Geoph.*, 32: 243-253.
- WORTHY T. H. 1990. An analysis of the distribution and relative abundance of moa species (Aves: Dinornithiformes). *New Zeal. Journ. Zool.*, 17: 213-241.
- WORTHY T. H., EDWARDS A. R. & MILLENER P. R. 1991. The fossil record of moas (Aves: Dinornithiformes) older than the Otira (last) Glaciation. *Journ. Roy. Soc. New Zealand*, 21 (2): 101-118.

### **Changes of address**

- Dr. Robert BAIRD, Department of Ornithology, Museum of Victoria, 71 Victoria Crescent, Abbotsford, Victoria 3067, AUSTRALIA.
- Dr. Robert M. CHANDLER, Florida Museum of Natural History, Gainesville FL 32611, U.S.A.
- Dr. Steven D. EMSLIE, Environmental Studies Dept, University of California, Santa Cruz, CA 95064, U.S.A.
- Dr. Per ERICSON, Department of Vertebrate Zoology, Swedish Museum of Natural History, Box 50007, S-104 05 Stockholm, SUEDE
- James L. GOEDERT, 15207 84th Avenue C1 N.W., Gig Harbor, Washington 98329-8765, U.S.A.
- Dr. Eugen KESSLER, Str. Izvorului 18/B, 3700 Oradea, ROMANIA
- Dr. Thomas SCHLUTER, Department of Geology, Makerere University, P. O. Box 7062, Kampala. UGANDA
- Dr. Alick D. WALKER, 17 Kingsley Avenue, Melton Park, Newcastle-upon-Tyne NE3 5QN, GRANDE BRETAGNE.