



# SOCIETY OF AVIAN PALEONTOLOGY AND EVOLUTION

- Newsletter -

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## SOCIETY OF AVIAN PALEONTOLOGY AND EVOLUTION

### Executive Council

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WANG MIN (Institute of Vertebrate Paleontology and Paleoanthropology, China) – Member at large

### Dear Friends, Colleagues, and SAPE Members,

I'm sorry to be writing this letter as the world is struggling with the newest Covid variant and exhausted from the difficulties we have all faced during the last two years. I hope you and your families are well and healthy, and assured that we will get back on our feet!

The uncertainty of the pandemic has kept our intention to have an in-person meeting at bay. We have been in regular conversations with the Host Committee in Malaga and closely checking the developments of other scientific meetings. We are considering doing a virtual meeting but for the time being, we have decided to postpone the meeting until the second half of 2022. We feel that the type of interaction that happens in person cannot be replaced virtually, and we fear that if we meet virtually this coming year, we will be creating a decade-long gap between our last in-person meeting (2016)

and our next in-person meeting (to be scheduled in 2026, 4 years after a 2022 virtual meeting if we were to go that route). Please stay tuned and most importantly, remain hopeful!

On the upside, I want to acknowledge the individuals who went the extra mile and made donations to SAPE, and all of you who renewed your membership. Thank you very much for keeping our Society's finances in good shape! We will be updating our website to reflect our new active members. Finally, I want to wish you all a Happy Holidays. I hope you have the opportunity to reconnect with your family, your friends, and your loved ones, whether in-person or virtually, and I wish you the best for the New Year.

Luis M. Chiappe, SAPE President

## CALL FOR NOMINATIONS

We would like to remind you that the Executive Council has set up a Nominations Committee to seek candidates for Vice President of the Society and for five new Members at Large to serve during the next term. Members at Large cannot serve consecutive terms but are allowed to skip a term and be re-elected. Nominations should be sent to the Secretary, who will distribute them to the Committee. Self-nominations are accepted. As stated in our bylaws, only those members who have belonged to the Society continuously for five years or more are eligible for election to an office of the

Society or to the Executive Council as a Member-at-Large. The election of these future Executive Council members will take place at the next meeting.

We would also like to remind you that the Executive Council is seeking proposals from institutions and/or individuals interested in hosting the 11<sup>th</sup> Meeting of the Society (this will of course depend on when our next meeting takes place). A vote will take place at our next meeting. In the meantime, expressions of interest can be sent to the President Luis Chiappe.

## A MESSAGE FROM THE TREASURER – SAPE MEMBERSHIP RENEWAL

Dear SAPE members, membership dues paid at our last meeting in Diamante (or at any point before May 2020), were understood and intended to cover the time period until the planned meeting in Malaga, Spain in May 2020. As you are all aware, the COVID-19 pandemic has forced us to postpone our meeting indefinitely. While the executive council is hopeful that our tentatively rescheduled meeting will be held soon, technically all SAPE memberships ceased to be current this past May and need to be renewed as soon as possible to avoid negative financial impact to the society.

We are thankful to members who have recently renewed and encourage those who have not to follow the instructions on the SAPE website (<http://www.sapesociety.org>) and renew your membership immediately. This is especially important because the society is incurring monthly service fees on our bank account because the disbursement of The Cécile Mourer-Chauviré Travel Grant lowered our account balance below the pre-set limit to avoid these fees. Furthermore, because we were unable to hold our meeting as planned in May 2020, the society has not collected revenue from the auction.

The membership rate remains unchanged at \$20.00 USD for an approximately 4 year period until the next SAPE meeting. In this case, dues paid now will cover the period from now until the potential SAPE meeting in

2025. Assuming that we are able to hold our planned meeting in Malaga next year, members will vote to adopt or reject the proposed plan to move to a 3-year meeting cycle instead of a 4-year cycle, and members in attendance will also have the chance to discuss options and vote on any membership fee issues that potentially arise as a result of adopting a 3-year meeting schedule.

Note, if you are one of the select few who have paid membership dues after May, 2020, then your membership is current through 2024 and you need not pay again.

Membership renewal instructions can be found on the SAPE website (<http://www.sapesociety.org>). Please follow the links provided and make your payment online. Only payments via PayPal are accepted. Please choose the “friends and family option” as it avoids the “buyer insurance” fees charged by PayPal for other transactions.

The entire executive council would like to thank you in advance for renewing your membership and supporting SAPE and our mission. If you would like to make an additional gift to the society please reach out to Treasurer, Adam Smith ([paleobirdsmith@gmail.com](mailto:paleobirdsmith@gmail.com)) and/or SAPE President Luis Chiappe ([lchiappe@nhm.org](mailto:lchiappe@nhm.org)).

## NEWS FROM MEMBERS AND RECENT PUBLICATIONS

### ARGENTINA

JORGE IGNACIO NORIEGA, from the CICYTTP-Diamante (CONICET-UADER), and colleagues studied the first fossil remains of Teratornithidae from the Quaternary of South America, from four fossiliferous localities of Central Argentina that range in age from the late middle to the early late Pleistocene. He is now working on the description of a basal duck (Anatidae) from the Santa Cruz Formation (Early Middle Miocene) of Patagonia, and the synsacrum of a pelican (Pelecanidae) from the Paraná Formation (Late Miocene) of Mesopotamia, Argentina.

CAROLINA ACOSTA HOSPITALECHE, from the Museo de La Plata and CONICET continues working in Antarctic

and South American birds, including remains from the Cretaceous and Eocene of Seymour Island, Miocene of Argentina, Chile, and Peru, and Pleistocene of Uruguay. General research includes the integrative analysis of the marine vertebrates from the Chubut Province (with MARIANA VIGLINO, MÓNICA BUONO and other collaborators) and the review of Late Campanian-early Maastrichtian vertebrates from the James Ross Basin (with MARCELO REGUERO and an extensive list of specialists in different groups).

Carolina, together with Trevor Worthy, re-described the holotype of *Vegavis iaai* after its complete removal from the sedimentary matrix. New features were added to the data matrix to update the phylogenetic information

and three-dimensional models for each bone were provided.

Another important contribution (with ARIANA PAULINA CARABAJAL and ROBERTO YURY-YÁÑEZ) was the examination of *Spheniscus urbinai*, a penguin from the Miocene of South America, first recorded in Peru, and later in Chile and Argentina. As a part of this study, a re-description of the cranial osteology including individual variations, the brain morphology, and the cranial pneumatic systems were analyzed.

Also from Miocene levels, a new petrel from the Argentina Patagonia, was described with ALEJANDRA PIRO. A preliminary phylogeny, and a morpho-geometric comparison with other albatrosses, petrels and allies, was made.

Besides, CAROLINA studied bioerosive traces on a Pleistocene bird from Uruguay (with WASHINGTON JONES and ANDRÉS RINDERKNECHT), and the biodeterioration within Antarctic penguin bones from the Eocene caused by endolithic lichens (with RENATO GARCÍA and GONZALO MÁRQUEZ). In a complementary study, CAROLINA, RENATO GARCÍA and GONZALO MÁRQUEZ analyzed the richness of the Antarctic lichens growing on and within bones.

The following students are working with Carolina in their doctoral dissertations. Alejandra Piro in the anatomy and phylogeny of Procellariiformes, M. Alejandra Sosa in anatomy, and modularity of the spine in Antarctic fossil penguins, Luis Garat in osteohistology of modern and Eocene penguins from Antarctica, and Facundo Irazoqui (recently incorporated to the lab) in Cretaceous birds from the James Ross Basin.

Apart from that, Carolina continues teaching as a Professor at the Universidad Nacional de La Plata in two courses: Principles of Paleontology and Vertebrate Paleontology.

Research at the LACEV (Laboratorio de Anatomía Comparada y Evolución de los Vertebrados, at the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”) currently focuses on diverse topics on birds and early bird ancestors. Published works include detailed analyses on unenlagiid and alvarezsaurid theropods and their implications for the origin and early evolution of bird traits (Agnolin et al., 2021; Novas et al., 2021a,b). Further, a review and analysis of key anatomical features of the enigmatic flightless bird *Brontornis* were published, and its galloanserine affinities were sustained (Agnolin, 2021).

Currently, members of our lab are working on several topics of early bird evolution, including the description of modern birds from Cretaceous beds from Brazil and Argentina. In addition, work in progress include new avian assemblages from Miocene and Pleistocene beds. The PhD student G. Álvarez Herrera is currently working on several topics about *Vegavis iaai* anatomy, and its implications on the origin of modern birds. Currently he is working on a detailed analysis of the evolution of jaw anatomy on basal neornithine birds.

The Avian Biomorphodynamics Research Group (ABRG) is formed by CONICET (National Scientific and Technical Research Council, Argentina) researchers CLAUDIA TAMBUSI, FEDERICO “DINO” DEGRANGE and MARÍA MANUELA DEMMEL FERREIRA working at the CICTERRA (Research Center on Earth Sciences, National University of Córdoba) in Córdoba, and RICARDO DE MENDOZA, CLAUDIO G. BARBEITO and JULIETA CARRIL working at the LHYEDEC (Laboratory of Histology and Descriptive, Experimental and Comparative Embryology, Faculty of Veterinary Sciences, National University of La Plata) in

Buenos Aires. This group works on several topics on paleobiology and evolution of South American and Antarctic birds using different approaches and methodological tools in order to understand the development, morphology and evolution of extant and extinct birds. These approaches and methodological tools include biomechanical studies such as finite element analysis, developmental studies using several histological techniques and anatomical network analysis, reconstruction of soft structures and 3D modelling using CT scans, and macroevolutionary studies using phylomorphospaces, cladistics and reconstructions of ancestral character states. Works in progress include the analysis of biomechanical performance in different bird skulls such as those of Cariamiformes, Psittaciformes and Caprimulgiformes, the analysis of brain disparity in the heterogeneous “birds of prey” group, brain disparity in Tyrannides, the study of fossil birds collected during field works at Buenos Aires, Catamarca and Chubut, and the study of the architecture and morphogenesis of hindlimbs’ muscles and bones in aquatic and arboreal birds.

- ACOSTA HOSPITALECHE, C., & WORTHY, T. (2021): New data on the *Vegavis iaai* holotype from the Maastrichtian of Antarctica. – *Cretaceous Research*. DOI: 10.1016/j.cretres.2021.104818
- ACOSTA HOSPITALECHE, C., PAULINA CARABAJAL, A., & YURY-YÁÑEZ, R. (2021): The skull of the Miocene *Spheniscus urbinai* (Aves, Sphenisciformes): osteology, brain morphology, and the cranial pneumatic systems. – *Journal of Anatomy*. DOI: 10.1111/joa.13403
- ACOSTA HOSPITALECHE, C., JONES, W., & RINDERKNECHT, A. (2021): Bioerosive traces in a Pleistocene Anatid bone from Uruguay. – *Journal of South American Earth Sciences*, 107: 103120
- AGNOLIN, F.L. (2021): Reappraisal on the Phylogenetic Relationships of the Enigmatic Flightless Bird (*Brontornis burmeisteri*) Moreno and Mercerat, 1891. – *Diversity*, 13(2): 90.
- AGNOLIN, F.L., LU, J.C., KUNDRÁT, M., & XU, L. (2021): Alvarezsaurid osteology: new data on cranial anatomy. – *Historical Biology*, 1-10.
- CARRIL, J., BARBEITO, C.G., & TAMBUSI, C.P. (2021): Making a parrot zygodactyl foot: osteology and morphogenesis of the tarsometatarsus in the monk parakeet (*Myiopsitta monachus*). – *Zoology*, 144: 125877. DOI: 10.1016/j.zool.2020.125877
- CARRIL, J., TAMBUSI, C.P., & RASSKIN-GUTMAN, D. (2020): The network ontogeny of the parrot: altriciality, dynamic skeletal assemblages, and the avian body plan. – *Evolutionary Biology*, 48: 41–53. DOI: 10.1007/s11692-020-09522-w
- CENIZO, M., NORIEGA, J.I., VEZZOSI, R.I., TASSARA, D. & TOMASSINI, R., (2021): First Pleistocene South American Teratomithidae (Aves): new insights into the late evolutionary history of teratons. – *Journal of Vertebrate Paleontology*, 41(2): p.e1927064
- DEGRANGE, F.J. (2021): A revision of Phorusrhacidae (Aves, Cariamiformes) skull morphology. – *Journal of Vertebrate Paleontology*. DOI: 10.1080/02724634.2020.1848855
- DEGRANGE, F.J., POL, D., PUERTA, P., & WILF, P. (2021): Unexpected larger distribution of Paleogene stem-rollers (Aves, Coraciiformes): new evidence from the Eocene of Patagonia, Argentina. – *Scientific Reports*, 11:1363. DOI: 10.1038/s41598-020-80479-8
- DEGRANGE, F.J., TAMBUSI, C.P., TAGLIORETTI, M.L., & SCAGLIA, F.A. (2021): Phylogenetic affinities and

- morphology of the Pliocene cathartiform *Dryornis pampeanus* Moreno & Mercerat, 1891. – *Papers in Palaeontology*, 7: 1765–1780. DOI: 10.1002/spp2.1361
- DEGRANGE, F.J., TAMBUSSI, C.P., TAGLIORETTI, M.L. & SCAGLIA, F.A. (In press): A new buzzard from the late Pliocene of Argentina. – *Acta Palaeontologica Polonica*.
- DEMME FERREIRA, M.M., DEGRANGE, F.J., TIRAO, G.A., & TAMBUSSI, C.P. (2021): Endocranial morphology of the Piciformes (Aves, Coraciimorphae): Functional and ecological implications. – *Journal of Anatomy*. DOI: 10.1111/joa.13416
- GARCÍA, R., MÁRQUEZ, G., & ACOSTA HOSPITALECHE, C. (2020): Richness of lichens growing on Eocene fossil penguin remains from Antarctica. – *Polar Biology*. DOI 10.1007/s00300-020-02761-9
- GARCÍA, R., ACOSTA HOSPITALECHE, C., MÁRQUEZ, G. (2021 online): Biodeterioration of fossil remains caused by lichens. – *Polar Biology*. <https://doi.org/10.1007/s00300-021-02957-7>
- NOVAS, F.E., AGNOLÍN, F. L., MOTTA, M.J., & BRISSÓN EGLI, F. (2021). Osteology of *Unenlagia comahuensis* (Theropoda, Paraves, Unenlagiidae) from the Late Cretaceous of Patagonia. – *The Anatomical Record*.
- NOVAS, F.E., MOTTA, M.J., AGNOLÍN, F.L., ROZADILLA, S., LO COCO, G.E., & BRISSÓN EGLI, F. (2021). Comments on the Morphology of Basal Paravian Shoulder Girdle: New Data Based on *Unenlagiid* Theropods and Paleognath Birds. *Front. – Earth Sci*, 9: 662167.
- PIRO, A. & ACOSTA HOSPITALECHE, C. (2021 online): A new petrel (Aves: Procellariidae) from the early Miocene of Argentina. – *Historical Biology*. <https://doi.org/10.1080/08912963.2021.1903891>
- REGUERO, M., GASPARINI, Z., OLIVERO, E., CORIA, R., FERNÁNDEZ, M., O'GORMAN, J., GOUIRIC-CAVALLI, S., ACOSTA HOSPITALECHE, C., BONA, P., IGLESIAS, A., GELFO, J., RAFFI, M., MOLY, J., SANTILLANA, S., CÁRDENAS, M. (in press): Late Campanian-early Maastrichtian vertebrates from the James Ross Basin, West Antarctica: updated synthesis, biostratigraphy, and paleobiogeography. – *Anales de la Academia Brasileira de Ciencias*.
- TAMBUSSI, C.P., DEGRANGE, F.J., CICCIOLO, P.L., & PREVOSTI, F. (2021): Fossil birds in highly aggradational fluvial systems of the lower member of the Toro Negro Formation (Neogene), central Andes of Argentina. – *Journal of South American Earth Sciences*, 105: 102988. DOI: 10.1016/j.jsames.2020.102988
- TAMBUSSI, C.P. & DEGRANGE, F.J. (In press): CÓRDOBA y la paleoherpetología: historia y reflexiones. – *Publicación Electrónica de la Asociación Paleontológica Argentina PE-APA*.
- VIGLINO, M., BUONO, M., ACOSTA HOSPITALECHE, C., CIONE, A., CUITIÑO, J., GAETÁN, M., STERLI, J., PAOLUCCI, F. (2021): D.17. Vertebrados marinos del Cenozoico. *Relatorio XXI Congreso Geológico Argentino*. Puerto Madryn, 2021 – *Geología y Recursos Naturales de la Provincia del Chubut*, p. 335-358
- ACOSTA HOSPITALECHE, C. (2021): Giants from Antarctica: The Fossil Record of Penguins, Pelagornithids, and other birds. *Northeast Natural History Conference*, 16 de abril de 2021.
- GARCÍA, R., ACOSTA HOSPITALECHE, C., MÁRQUEZ, G. (2021): Deterioro de huesos fósiles de pingüinos antárticos causado por líquenes. *XXXVIII Jornadas Argentinas de Botánica*. *Boletín de la Sociedad Argentina de Botánica*, 56: 145-146.
- GELFO, J., ACOSTA HOSPITALECHE, C., BAUZÁ, N., STILES, E., STRÖMBERG, C. (2021): An association of *Carodnia feruglioi* (Mammalia: Xenungulata) specimens and the relocation of the *Carodnia* faunal Zone. *XII Congreso de la Asociación Paleontológica Argentina*.
- PIRO, A.; ACOSTA HOSPITALECHE, C. 2020. Comparative analyses of a new Miocene petrel (Aves: Procellariidae) from Patagonia, Argentina. *64th Palaeontological Association Annual Meeting 16–18 December 2020*. Abstracts of poster presentations, p. 124.
- PIRO, A.; ACOSTA HOSPITALECHE, C. (2021): Un nuevo resto del Eoceno de Antártida permite la reconstrucción de la ranfoteca de los Pelagornithidae de la Isla Marambio. 1° Reunión Virtual de Comunicaciones de la Asociación Paleontológica Argentina 2020. *PE-APA 21 (1R) – Libro de Resúmenes*, R43.
- TALEVI, M., ACOSTA HOSPITALECHE, C., ISON, J., GARAT, L. (2021): Preliminary results of the histological bone study of Maastrichtian bird remains from Marambio Island. 1° Reunión Virtual de Comunicaciones de la Asociación Paleontológica Argentina 2020. *PE-APA 21 (1R) – Libro de Resúmenes*, R50.
- 1ra. Reunión Virtual de Comunicaciones de la Asociación Paleontológica Argentina (RVCAPA). COPPA VIGLIOCCO, A.; ASTINI, R.A.; DEGRANGE, F.J. & GÓMEZ, F.J. (2021): Avian footprints from the Upper Cretaceous Lecho Formation, northwestern Argentina. *Publicación Electrónica de la Asociación Paleontológica Argentina 21(R1)*: R13.
- 1ra. Reunión Virtual de Comunicaciones de la Asociación Paleontológica Argentina (RVCAPA). DE MENDOZA, R.S.; CARRIL, J.; DEGRANGE, F.J. & TAMBUSSI, C.P. (2021): Análisis de redes anatómicas musculoesqueletarias del miembro posterior en aves buceadoras y no buceadoras. *Publicación Electrónica de la Asociación Paleontológica Argentina 21(R1)*: R15.
- 34.as Jornadas Argentinas de Paleontología de Vertebrados. DE MENDOZA, R.S.; CARRIL, J.; DEGRANGE, F.J. & TAMBUSSI, C.P. (2021): El efecto de la pérdida de información en redes anatómicas músculo-esqueletarias del miembro posterior de aves fósiles. *34.as Jornadas Argentinas de Paleontología de Vertebrados - Abstracts*: 36-37.
- 9th International Meeting on the Secondary Adaptation of Tetrapods to Life in Water. 9th (SECAD). DE MENDOZA, R.S.; CARRIL, J.; DEGRANGE, F.J. & TAMBUSSI, C.P. (2021): Network morphospace of the hindlimbs of diving birds. *Abstract Book*: 57.
- II Virtual Meeting of Systematics, Biogeography, and Evolution: The Research of Biodiversity and the Diversity of Researchers. DEMME FERREIRA, M.M.; DEGRANGE, F.J. & TIRAO, G.A. (2021): MicroCT, birds and brains: insights on the endocranial morphology of Tyrannides (Aves, Australaves). *Abstracts of The SBE meeting 2021*: 124-125.

#### CONFERENCE ABSTRACTS

- ACOSTA HOSPITALECHE, C.; PAULINA-CARBAJAL, A. (2020): Skull morphology of *Spheniscus urbinai* (Aves, Sphenisciformes) and the evolution of the cranial pneumatic system in penguins. 64th Palaeontological Association Annual Meeting 16–18 December 2020. Abstracts of poster presentations, p. 83

## AUSTRALIA

The 2020–21 year has again been a busy one for Avian Palaeontology at Flinders University, South Australia

We are excited to report that PhD candidate ELLEN MATHER has submitted her PhD Thesis “Taxonomy of fossil eagles and vultures (Aves, Accipitridae) from Australia”. Moreover, the first chapter describing the Late Oligocene accipitrid *Archaehierax sylvestris* is published in *Historical Biology*, still in early view though.

JACOB BLOKLAND is still beavering away at investigating the phylogenetic relationships of the fossil Oligocene and Miocene rails from Australia and New Zealand.

PHOEBE MCINERNEY has continued her PhD research on the Australian Dromornithidae, a group of large flightless birds. After what seemed like a slow process a paper finally was accepted for publication in *Papers in Palaeontology* describing pathologies indicative of the disease osteomyelitis in bones of *Genyornis newtoni* from Lake Callabonna. Work continues on descriptions of a complete skull and a couple rostra of the Pleistocene *Genyornis newtoni*.

BSc Honours student TIM NIEDERER is reinvestigating the Pleistocene flamingos of South Australia using a mix of qualitative, morphometric and phylogenetic approaches benefitted by some nice undescribed material.

Fieldwork has been limited this last year but we had a successful trip to the northwest corner of Lake Eyre where we documented a giant exposure (some 35,000 m<sup>3</sup>) of fossil prints of presumed dromornithids of late Oligocene age. This exposure and the prints thereon are the subject of a BSc Honours project by Nicia Burgess, supervised by A. Camens and THW.

TREVOR WORTHY made some contributions on dromornithids, with Warren Handley on their brains, and Anusuya Chinsamy on histology, for the big bird volume being edited for *Diversity* by Eric Buffetaut and Delphine Angst. The paper listed here by Thorn et al. is a key reference for interpreting the stratigraphy from which the Pinpa Local Fauna, a major source of fossil birds from the late Oligocene in South Australia, derives. I worked with Carolina Hospitaleche to redescribe the newly prepared holotype of *Vegavis iaai*. Resolution of the relationships of this important taxon awaits the discovery of cranial material. Research continues with colleagues on the St Bathans Fauna of New Zealand, with a paper in press in *Geobios* described a new fossil duck and its stratigraphical implications.

JACQUELINE NGUYEN is continuing her research on Australian fossil passerines. She splits her time between her ARC DECRA Fellowship at Flinders University (Adelaide) and her role at the Australian Museum (Sydney).

ACOSTA HOSPITALECHE, C. & T.H. WORTHY, (2021): New data on the *Vegavis iaai* holotype from the Maastrichtian of Antarctica. – *Cretaceous Research*, 124: 104818, 1-12. <https://doi.org/10.1016/j.cretres.2021.104818>.

CHINSAMY, A., T.H. WORTHY, (2021): Histovariability and palaeobiological implications of the bone histology

of the dromornithid, *Genyornis newtoni*. – *Diversity*, 13: 219, 18 pp. <https://doi.org/10.3390/d13050219>

DE PIETRI, V.L., WORTHY, T.H., SCOFIELD, R.P., COLE, T.L., WOOD, J.R., MITCHELL, K.J., CIBOIS, A., JANSEN, J.J.F.J., COOPER, A.J., FENG, S., CHEN, W., TENNYSON, A.J.D., & WRAGG, G.M. (2021): A new species of extinct Polynesian sandpiper (Charadriiformes: Scolopacidae: *Prosobonia*) from Henderson Island, Pitcairn Group, and the phylogenetic relationships of *Prosobonia*. – *Zoological Journal of the Linnean Society*. doi [10.1093/zoolinnean/zlaa115](https://doi.org/10.1093/zoolinnean/zlaa115).

DE PIETRI, V.L., SCOFIELD, R.P., ZELENKOV, N., BOLES, W.E., & WORTHY, T.H. (2020): Correction to ‘The unexpected survival of an ancient lineage ofanseriform birds into the Neogene of Australia: the youngest record of Presbyornithidae’. – *Royal Society Open Science*, 7: 201430. <http://dx.doi.org/10.1098/rsos.201430>

HANDLEY, W.D., T.H. WORTHY, (2021): Endocranial anatomy of the giant extinct Australian dromornithid mihirung birds (Aves, Dromornithidae). – *Diversity*, 13(3): 124; <https://doi.org/10.3390/d13030124>.

HUME, J. P., HUTTON, I., MIDDLETON, G., NGUYEN, J. & WYLIE, J. (2021): A terrestrial vertebrate palaeontological reconnaissance of Lord Howe Island, Australia. – *Pacific Science* 75(1): 1–31.

LAMBRIDES A.B.J., WEISLER M.I., CLARK J.T., QUINTUS S., WORTHY T.H. & BUCKLEY H., (in press 2021): Assessing foraging variability on small islands in Manu ‘a (American Samoa) during the first millennium BC. – *Archaeology in Oceania*.

MATHER, E.K., M.S.Y. LEE, A.B. CAMENS, T.H. WORTHY, (2021): An exceptional partial skeleton of a new basal raptor (Aves: Accipitridae) from the late Oligocene Namba Formation, South Australia. – *Historical Biology*, <https://doi.org/10.1080/08912963.2021.1966777> online 27 sept 2021.

MCINERNEY P.L., L.J. ARNOLD, C. BURKE, A.B. CAMENS, T.H. WORTHY, accepted 19 October (2021): Multiple occurrences of pathologies suggesting a common and severe bone infection in a population of the Australian Pleistocene giant, *Genyornis newtoni* (Aves, Dromornithidae). – *Papers in palaeontology*.

NGUYEN, J.M.T., & HO, S.Y.W. (2020): Calibrations from the fossil record. In (Ed. SYW Ho) *The Molecular Evolutionary Clock: Theory and Practice*. Springer: Cham (pp. 117–133).

THORN, K.M., M H. HUTCHINSON, M.S.Y. LEE, N. BROWN, A.B. CAMENS & T.H. WORTHY, (2021): A new species of *Proegernia* from the Namba Formation in South Australia and the early evolution and environment of Australian egeriine skinks. – *Royal Society Open Science*, 8: 201686. [doi.org/10.1098/rsos.201686](https://doi.org/10.1098/rsos.201686).

WORTHY, T.H., R.P. SCOFIELD, S.W. SALISBURY, S.J. HAND, V.L. DE PIETRI, J.C. BLOKLAND, M. ARCHER, (in press 2021): A new species of *Manuherikia* (Aves: Anatidae) provides evidence of faunal turnover in the St Bathans Fauna, New Zealand. – *Geobios*.

## AUSTRIA

In 2021, Ursula GÖHLICH was occupied with preparing the temporary exhibit "KinoSaurier" ("CineSauris"), recently opened at the Natural History Museum in Vienna. Beside that, she published on the fossil record of a tiger shark attack and submitted two papers on Neogene proboscideans.

FEICHTINGER I., FRITZ, I. & U.B. GÖHLICH (2021 online first): Tiger shark feeding on sirenian – first fossil evidence from the middle Miocene of the Styrian

Basin (Austria). – Historical Biology. <https://doi.org/10.1080/08912963.2021.1906665>

MAIR, A., GÖHLICH, U.B., HERCENBERGER, D., RICHTER, A. & KROH, A. (eds.) (2021): CineSauris – Fiction & Science. – 44 p., Wien (Verlag des Naturhistorisches Museums Wien). ISBN 978-3-903096-47-9

## BULGARIA

ZLATOZAR BOEV studied archaeozoological material of the Medieval settlement near Petarch village (Sofia Province, CW Bulgaria).

He is the scientific tutor of one PhD student, Ivaylo Angelov: "Number, age structure and food spectrum of the breeding population of the Golden Eagle (*Aquila chrysaetos* Linnaeus, 1758) in Bulgaria"

BOEV, Z. (2020): Fossil and subfossil records of Shrikes (Laniidae Swainson, 1824 – Passeriformes Linnaeus, 1758) in Bulgaria. – *Historia naturalis bulgarica*, 41: 77–81.

BOEV, Z. (2020): Late Pleistocene *Crocota crocuta spelaea* in Bulgaria: distribution and history of research (Carnivora: Hyaenidae). – *Lynx* (Prague), 51: 19–29.

BOEV, Z. (2020): Past distribution of *Ursus arctos* in Bulgaria: fossil and subfossil records (Carnivora: Ursidae). – *Lynx* (Prague), 51: 5-18.

BOEV, Z. (2021): An Early Pleistocene magpie (*Pica praepica* sp. n.) (Corvidae Leach, 1820) from Bulgaria. – *Bulletin of the Natural History Museum, Plovdiv*, 6: 51-59.

BOEV, Z. (2021): Animal remains of the medieval settlement near Petarch village (Sofia Province, CW Bulgaria). – *ZooNotes*. 184: 1-4.

BOEV, Z. POPGEORGIEV, G. (2021): Animal remains of the medieval settlement (9th-10th century A. D.) near Nedan village (Veliko Tarnovo Region, CN Bulgaria). – *ZooNotes*, 170: 1-4.

BOEV, Z., STALLIBRASS, S. (2020): Avian remains from the Thracian trade settlement Pistoros (5-2 c. BC) near Vetren, Pazardzhik Province, SC Bulgaria). – *Bulletin of the Natural History Museum – Plovdiv*, 5: 43-47.

POPULAR SCIENCE:

BOEV, Z. (2020): Late Pleistocene birds of the Nanin Kamak cave near Muselievo village. – *Priroda, BAS*, 3: 100-104.

BOEV, Z. (2020): Birds in the ancient art in the Bulgarian lands. – *BAS*, 4: 60-71.

BOEV, Z. (2021): Tropical birds in Siberia. – *Priroda, BAS*, 2: 98-101.

## CHINA

WANG MIN continues his research focusing on Mesozoic birds. In 2021, Wang and his colleagues explored the patterns and modes of morphological evolution across stem avian lineages using comparative phylogenetic approaches. Their study (Wang et al., 2021a) shows that the major Mesozoic avian groups are distinctive in discrete character space, but constrained in morphospace defined by limb size. The Enantiornithines, despite being the most speciose group of Mesozoic birds, are much less morphologically disparate than their sister clade, the Ornithuromorpha, showing decoupled disparity and diversity in early avian history. This relatively low disparity suggests that diversification of enantiornithines was characterized in exhausting fine morphologies, whereas ornithuromorphs continuously explored a broader array of morphologies and ecological opportunities. Then, Wang and his colleagues found a well-preserved Early Cretaceous enantiornithine, and reconstructed its skull in three dimensionally using CT scanning (Wang et al., 2021b). The result is quite surprising which demonstrate the detail morphology of several cranial elements of enantiornithines for the first time, including the palatal and temporal regions. This three-dimensional reconstruction of the entire enantiornithine skull demonstrates that this bird has an akinetic skull indicated by the unexpected retention of the plesiomorphic dinosaurian palate and diapsid

temporal configurations, capped with a derived avialan rostrum and cranial roof, highlighting the highly modular and mosaic evolution of the avialan skull. Later this year, Wang and his colleagues reported a new species of the enantiornithine family Pengornithidae (Wang et al., 2021c), which preserves a rectricial fan and a pair of elongated fully pennaceous rachis-dominant tail feathers, constituting a new tail morphotype previously unknown among Mesozoic birds and non-avian dinosaurs but resembling the pin tail of some living birds.

LI ZHIHENG and his colleagues continue to work on the Late Miocene avian fauna from Linxia area with respect to reveal both timing and diversification of crown clade birds in the region and relationship to other extant and extinct palearctic avian species. For scanning of fossil material, Alida Bailleul, Jing Lu, Zhiheng Li published a paper on iodine-based contrasting agents for computed tomography (CT) of a partial ankle joint from an extinct pheasant from the Late Miocene of Northwest China (Linxia Basin). The authors tested if I<sub>2</sub>E could also enhance the CT contrasts of two fossilized skeletal tissues: bone and calcified cartilage. This method not only effectively increased the contrasts of two different fossilized skeletal tissues, it was also non-destructive and reversible. These preliminary results indicate that iodine-ethanol has the potential to be used widely in vertebrate paleontology to improve CT imaging of

fossilized tissues. Li et al., had also report a new ostrich fossil from the Late Miocene Linxia Basin, Northwest China, with exceptional soft-tissue preservation. Bacterial alterations (bone bioerosion) were revealed by light microscopy and petrographic sections under SEM imaging. Soft-tissues (fossilized remnants of endogenous blood vessels and red blood cells) were preserved in one demineralized bone fragment and also observed in the in-situ ground-section. These are the first records of soft-tissue preservation in vertebrate remains from the Late Miocene Linxia Basin. A seasonal monsoon might have facilitated the microbial erosion penecontemporaneous with the burial of the specimen. This study encourages interdisciplinary research involving morphology, sedimentology, geochemistry, and histological soft-tissue analyses to better understand the Late Miocene faunal turnovers, climates, and fossil preservation in the Liusu Formation in northwestern China.

ALIDA BAILLEUL has been mostly working on fossilized cartilage in birds and a dinosaur of the Jehol biota. The main goal of her research is to further understand cellular and intracellular preservation in cartilage cells. She has found different types of cartilage cell morphologies in the birds *Confuciusornis* and *Yanornis* (Wu et al., 2021, Bailleul and Zhou, 2021) and exquisite nuclear preservation in the dinosaur *Caudipteryx* (Zheng et al., 2021). She applied a histochemical stain (Hematoxylin and Eosin) to the *Caudipteryx* cells and one cell showed a stained nucleus. She also wrote review papers on nuclei preservation in the fossil record (Bailleul, 2021) and proposed a new hypothesis about DNA preservation in Mesozoic fossils (Bailleul and Li, 2021). Together with colleague Li Zhiheng, they worked on fossil birds from the Miocene Linxia Basin of China to develop DiceCT in fossils (Bailleul et al., 2021) and to describe well-preserved blood vessels in a fossil ostrich (Li et al., 2021).

BAILLEUL, A. M., & ZHOU, Z.-H. (2021): SEM analyses of fossilized chondrocytes in the extinct birds *Yanornis* and *Confuciusornis*: insights on taphonomy and modes of preservation in the Jehol Biota. – *Frontiers in Earth Science*, 9(694).

BAILLEUL, A. M. (2021): Fossilized cell nuclei are not that rare: Review of the histological evidence in the Phanerozoic. – *Earth Science Reviews*, 216(2021): 103599.

BAILLEUL, A. M., & LI, Z.-H. (2021): DNA staining in fossil cells beyond the Quaternary: Reassessment of the evidence and prospects for an improved understanding of DNA preservation in deep time. 2021. – *Earth Science Reviews*, 216(2021):103600.

BAILLEUL, A. M., LU, J., & LI, Z.-H. (2021): DiceCT applied to fossilized hard tissues: a preliminary case study using a Miocene bird. – *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*. doi: 10.1002/jez.b.23037.

LI, Z.-H., BAILLEUL, A. M., STIDHAM, T. A., WANG, M., & DENG, T. (2021): Exceptional preservation of an extinct ostrich from the Late Miocene Linxia basin of China. – *Vertebrata Palasiatica*. doi:

Liu, S.-M., LI, Z.-H., BAILLEUL, A. M., WANG, M., & O'CONNOR, J. K. (2021): Investigating possible gastroliths in a referred specimen of *Bohaiornis guoi* (Ave Enantiornithes). – *Frontiers in Earth Science*, 9: 62.

WANG, M., LLOYD, G. T., ZHANG, C., & ZHOU, Z.-H. (2021a): The patterns and modes of the evolution of disparity in Mesozoic birds. – *Proceedings of the Royal Society B*, 288:20203105.

WANG, M., STIDHAM, T. A., LI, Z.-H., XU, X., & ZHOU, Z.-H. (2021b). Cretaceous bird with dinosaur skull sheds light on avian cranial evolution. – *Nature Communications*, 12:3890.

WANG, M., O'CONNOR, J. K., ZHAO, T., PAN, Y.-H., ZHENG, X.-T., WANG, X.-L. & ZHOU, Z.-H. (2021c): An Early Cretaceous enantiornithine bird with a pintail. – *Current Biology*. doi: 10.1016/j.cub.2021.08.044. 10.19615/j.cnki.1000-3118.210309.

Wu, Q., O'CONNOR, J. K., LI, Z.-H., & BAILLEUL, A. M. (2021): Cartilage on the furculae of living birds and the extinct bird *Confuciusornis*: a preliminary analysis and implications for flight style inferences in Mesozoic birds. – *Vertebrata Palasiatica*. doi: 10.19615/j.cnki.1000-3118.201222.

Wu, Q., BAILLEUL, A. M., LI, Z.-H., O'CONNOR, J. K., & Zhou, Z.-H. (2021): Osteohistology of the scapulocoracoid of *Confuciusornis* and preliminary analysis of the shoulder joint in Aves. – *Frontiers in Earth Science*. doi: 10.3389/feart.2021.617124.

ZHENG, X.-T., BAILLEUL, A. M., LI, Z.-H., WANG, X.-L., & ZHOU, Z.-H. (2021): Nuclear preservation in the cartilage of the Jehol dinosaur *Caudipteryx*. – *Communications Biology*, 4:1125.

## FRANCE

Amongst projects that are completed or underway in Lyon/Villeurbanne, SÉGOLENE RIAMON published, with ANTOINE LOUCHART and paleoanthropologist colleagues in Paris, evidence of an early Miocene hornbill, from Uganda, the fossil record of these birds being very scarce. More closely related to her PhD, now approaching accomplishment, she also participated with DANIEL FIELD, BHART-ANJAN BHULLAR and Antoine, to the publication of new data on *Omorhamphus*, a juvenile Gastornithid, pertaining to beak growth, in comparison with *Sylviornis neocaledoniae*, among others. Ségolène's PhD work on *Sylviornis* is leading to very interesting new insights into the evolution and ecology of this regretted bird. Her PhD presentation will take place during spring 2022. As a Master's internship, ANAÏS DUHAMEL worked last spring, with Antoine and colleagues in isotopic geochemistry, on a project also

involving a crucial paleohistological dimension, and dealing with the search for clues of seasonal migrations in the past, using fossil birds. She obtained very interesting results on both extant and fossil specimens, to be published soon. Anaïs also continued in parallel with fossils from the early Oligocene of Luberon in France, leading to a published work with Antoine on a representative of the Gruoidea. Currently, and before starting a PhD next year, Anaïs is working on several projects, from extinct island birds from different islands, to 3D morphological analysis. Anaïs and Ségolène also presented their recent works in various congresses and meetings. As part of a Master's internship, MARION GRIFFON studied the old fauna of Cos (Quercy, early Eocene), identifying important early representatives of several taxa, including Psophiidae, and nice elements of known taxa. This work will be published as soon as

possible. ANDRZEJ ELZANOWSKI and Antoine also eventually published a long-lasting study on the osteometry of authentic subspecific specimens of ostriches, including the extinct *S. camelus syriacus*, and the extinct *S. c. spatzi*. For the latter, evidence is provided, congruent with interpretations from eggshell, that *S. c. spatzi* (from NW Africa) is at least an authentic subspecies (if not a full species, pending other data), contrary to unsubstantiated recent claims to the contrary; and both extinct subspecies differentiate quite well osteologically. Subtle sexual dimorphism evidence is also provided. Several in Lyon are eager to possibly attend the next, long awaited SAPE meeting in Spain in May 2022 cross fingers. Antoine would also like to stress the next IOC meeting in Durban, South Africa in August 2022. Are some of us in paleontology planning to attend? Do you have infos about a symposium that could include fossil birds?

CÉCILE MOURER-CHAUVIRÉ and ESTELLE BOURDON described a new species of *Gastornis*, *G. laurenti*, from the early Eocene of La Borie (Saint-Papoul, Southwestern France). The *Gastornis* remains previously found in this locality had been attributed to *G. parisiensis*. The study of the cranial material (mandibula, maxilla, quadrate) made it possible to show that it belonged to a new species. The study of the post-cranial material, as well as that of three small taxa, is practically completed and will be published in the near future.

ERIC BUFFETAUT and DELPHINE ANGST are going on with their investigations on giant fossil birds. A revision of the type of the enigmatic *Macromis tanaupus* from the Upper Eocene of England has shown that, contrary to some previous interpretations, it is indeed an incomplete tibiotarsus of a very large, cassowary-sized bird, possibly a phorusrhacid. A large femur collected in the 1920s in the Lower Pleistocene Nihewan Formation of northern China and kept at the Paris Natural History Museum has been identified as belonging to the giant ostrich *Pachystruthio*, thus extending the geographical range of that bird much farther east than previously realized. That paper was published as part of a special issue of the journal *Diversity* on the evolution and palaeobiology of flightless birds, edited by Eric and Delphine; five papers have already been published and more are expected. For more details, see: [https://www.mdpi.com/journal/diversity/special\\_issues/flightless\\_birds](https://www.mdpi.com/journal/diversity/special_issues/flightless_birds)

Eric's other recent contributions include the description (with Gaël de Ploeg) of the scanty material of giant birds (*Remiornis* and *Gastornis*) from the terminal Paleocene Rivecourt fossil locality in northern France, a note on the first published photographs of *Aepyornis* eggs (at an exhibition about Madagascar at the Paris Natural History Museum in 1895), and a paper on the history of the discovery of the Pleistocene ostriches of China.

Field work at Upper Cretaceous localities in southern France was resumed in 2021, leading to the discovery of an incomplete large sternum lacking a keel, associated with the very large scapulae mentioned in the previous report. Some preliminary information about the latter was published in a general paper on the fossil-bearing localities.

The long-awaited description, as *Yuornis junchangi*, of what is currently the best-preserved specimen of a Late Cretaceous enantiornithine, from the Upper Cretaceous of Henan (central China), has finally appeared in the *Geological Magazine*.

- BUFFETAUT, E. (2020): A la poursuite de l'oiseau Roc. De Sinbad le marin à *Aepyornis*. - Editions du Cavalier bleu, Paris.
- BUFFETAUT, E. & DE PLOËG, G. (2020): GIANT BIRDS FROM THE UPPERMOST PALEOCENE OF Rivecourt (Oise, Northern France). – *Boletim do Centro Português de Geo-História e Pré-História*, 2 (1): 29–33.
- BUFFETAUT, E. (2021): The first published photograph of *Aepyornis* eggs? Alphonse Milne-Edwards, Alfred Grandidier and the Madagascar exhibition (1895). – *Colligo*, 4(1): 1–9.
- BUFFETAUT, E. (2021): Dragon's eggs from the 'Yellow Earth': the discovery of the fossil ostriches of China. – *Historical Natural*, 11 (1): 47–63.
- BUFFETAUT, E. & ANGST, D. (2021): *Macromis tanaupus* Seeley, 1866: an enigmatic giant bird from the upper Eocene of England. – *Geological Magazine*. <https://doi.org/10.1017/S0016756820001466>
- BUFFETAUT, E. & ANGST, D. (2021): A giant ostrich from the Lower Pleistocene Nihewan Formation of North China, with a review of the fossil ostriches of China. – *Diversity*, 13: 47. <https://doi.org/10.3390/d13020047>
- BUFFETAUT, E., ANGST, D., CLAUDE, J., TONG, H., AMOROS, A., BOSCHETTO, D., CHENET, J.P., CLAVEL, D., MAGGIA, B., ROQUES, T. & SÈBE, S. (2021): Les niveaux à vertébrés fossiles du Crétacé supérieur de Castigno et Combeville (Villespassans, Hérault) : historique et nouvelles découvertes. – *Carnets natures*, 8: 33–47.
- ELZANOWSKI, A., & LOUCHAR, A. (2021): Metric variation in the postcranial skeleton of ostriches, *Struthio* (Aves: Palaeognathae), with new data on extinct subspecies. – *Zoological Journal of the Linnean Society*, zlab049. DOI: 10.1093/zoolin/zlab049.
- LOUCHAR, A., BHULLAR, B. A., RIAMON, S., & FIELD, D. J. (2021): The true identity of putative tooth alveoli in a Cenozoic crown bird, the *Gastornithid Omorhamphus*. – *Frontiers in Earth Sciences*, 9: 333. DOI: [10.3389/feart.2021.661699](https://doi.org/10.3389/feart.2021.661699).
- LOUCHAR, A., & DUHAMEL, A. (2021): A new fossil from the early Oligocene of Provence (France) increases the diversity of early Gruoidea and adds constraint on the origin of cranes (Gruidae) and limpkin (Aramididae). – *Journal of Ornithology*, 162: 977–986. DOI: [10.1007/s10336-021-01891-z](https://doi.org/10.1007/s10336-021-01891-z).
- MOURER-CHAUVIRÉ, C. & BOURDON, E. (2020): Description of a new species of *Gastornis* (Aves, Gastornithiformes) from the early Eocene of La Borie, southwestern France. – *Geobios*, 63: 39–46.
- RIAMON, S., PICKFORD, M., SENUT, B., & LOUCHAR, A. (2021): Bucerotidae from the early Miocene of Napak, Uganda (East Africa): The earliest hornbill with a modern-type beak. – *The Ibis*, 163: 715–721. DOI: 10.1111/ibi.12907.
- XU, L., BUFFETAUT, E., O'CONNOR, J., ZHANG, X., JIA, S., ZHANG, J., CHANG, H. & TONG, H. (2021): A new, remarkably preserved, enantiornithine bird from the Upper Cretaceous Qiupa Formation of Henan (central China) and convergent evolution between enantiornithines and modern birds. – *Geological Magazine* <https://doi.org/10.1017/S0016756821000807>
- ZOUHRI, S., GINGERICH, P., KHALLOUFI, B., BOURDON, E., ADNET, S., JOUVE, S., ELBOUDALI, N., AMANE, A., RAGE, J.-C., TABUCE, R., & DE BROIN, F.L. (2021): Middle Eocene vertebrate fauna from the Aridal Formation, Sabkha of Guernan, southwestern Morocco. – *Geodiversitas*, 43(5): 121–150.

## GERMANY

GERALD MAYR spent much of the past in revising his book on Paleogene fossil birds, of which a second edition will be published soon. The new updated version will have a larger format, include many color figures, and be more affordable than the first edition.

MAYR, G. (2020): A remarkably complete skeleton from the London Clay provides insights into the morphology and diversity of early Eocene zygodactyl near-passerine birds. – *Journal of Systematic Palaeontology*, 18 (22): 1891-1906.

MAYR, G. (2021): The coracoscapular joint of neornithine birds – extensive homoplasy in a widely neglected articular surface of the pectoral girdle and its functional correlates. – *Zoomorphology*, 140: 217-228.

MAYR, G. (2021): On the occurrence of lateral openings and fossae (pleurocoels) in the thoracic vertebrae of neornithine birds and their functional significance. – *Vertebrate Zoology*, 71: 453-463.

MAYR, G. (2021): A partial skeleton of a new species of *Tynskyia* Mayr, 2000 (Aves, Messelasturidae) from the London Clay highlights the osteological distinctness of a poorly known early Eocene “owl/parrot mosaic”. – *Paläontologische Zeitschrift* 95 (2): 337-357.

MAYR, G. (2021): An early Eocene fossil from the British London Clay elucidates the evolutionary history of the enigmatic Archaeotrogonidae (Aves, Strisores). – *Papers in Palaeontology*, 7(4): 2049–2064.

MAYR, G. (2021): A partial skeleton of *Septencoracias* from the early Eocene London Clay reveals derived features of bee-eaters (Meropidae) in a putative stem group roller (Aves, Coracii). – *Palaeobiodiversity and Palaeoenvironments*; doi: 10.1007/s12549-021-00504-0

MAYR, G., DE PIETRI, V. L., LOVE, L., MANNERING, A. A. & SCOFIELD, R. P. (2021): Oldest, smallest, and phylogenetically most basal pelagornithid, from the early Paleocene of New Zealand, sheds light on the evolutionary history of the largest flying birds. – *Papers in Palaeontology*, 7 (1): 217-233.

MAYR, G., DE PIETRI, V.L. & SCOFIELD, R.P. (2021): New bird remains from the early Eocene Nanjemoy Formation of Virginia (USA), including the first

records of the Messelasturidae, Psittacopedidae, and Zygodactylidae from the Fisher/Sullivan site. – *Historical Biology*; doi: 10.1080/08912963.2021.

MAYR, G., GOEDERT, J.L., DE PIETRI, V. & SCOFIELD, R.P. (2021): Comparative osteology of the penguin-like mid-Cenozoic Plotopteridae and the earliest true fossil penguins, with comments on the origins of wing-propelled diving. – *Journal of Zoological Systematics and Evolutionary Research*, 59 (1): 264-276.

MAYR, G., GOEDERT, J.L., & RABENSTEIN, R. (2021): Cranium of an Eocene/Oligocene pheasant-sized galliform bird from western North America, with the description of a vascular autapomorphy of the Galliformes. – *Journal of Ornithology*; doi.org/10.1007/s10336-021-01935-4

MAYR, G. & HURUM, J. H. (2020): A tiny, long-legged raptor from the early Oligocene of Poland may be the earliest bird-eating diurnal bird of prey. – *Science of Nature*, 107: 48; <https://doi.org/10.1007/s00114-020-01703-z>

MAYR, G., PITTMANN, M., KAYE, T.G., SAITTA, E.T. & POTT, C. (2020): Reanalysis of putative ovarian follicles suggests that Early Cretaceous birds were feeding not breeding. – *Scientific Reports*, 10: 19035; <https://doi.org/10.1038/s41598-020-76078-2>

MAYR, G. & ZELENKOV, N. (2021): Extinct crane-like birds (Eogruidae and Ergilornithidae) from the Cenozoic of Central Asia are indeed ostrich precursors. – *Ornithology*; doi: 10.1093/ornithology/ukab048.

MAYR, G. & GOEDERT, J.L. (2021): New late Eocene and Oligocene plotopterid fossils from Washington State (USA), with a revision of “*Tonsala*” *buchanani* (Aves, Plotopteridae). – *Journal of Paleontology*; doi: 10.1017/jpa.2021.81

SANGSTER, G. & MAYR, G. (2021): A name for the clade formed by Pelecaniformes, Suliformes, Ciconiiformes, Procellariiformes and Sphenisciformes. – *Vertebrate Zoology*, 71: 49-53.

TSAI, C.-H. & MAYR, G. (2021): A phasianid bird from the Pleistocene of Tainan: the very first bird fossil from Taiwan. – *Journal of Ornithology*; doi: 10.1007/s10336-021-01886-

## HUNGARY

KESSLER, J. (E). (2020): Evolution of Songbirds (Passeriformes) and their Presence in the Neogene and the Quaternary in the Carpathian Basin. – *Ornis Hungarica*, 28(2): 158–203. DOI: 10.2478/orhu-2020-0024

KESSLER, J. (E). & HORVÁTH, I. (2021): The wing phalanges (phalanx proximalis digiti majoris) of

Gaviiformes, Podicipediformes, Pelecaniformes, Ardeiformes, Anseriformes, Gruiformes, Ralliformes, Charadriiformes and Galliformes. – *Ornis Hungarica*, 29(1): 149–169. DOI: 10.2478/orhu-2021-0012

## ITALY

In the last two years, MARCO PAVIA continued the study of birds from African sites with the publication of the

whole bird association from Kromdraai, and the finish of the study of the bird association from Cooper’s Cave

(both locality in the Cradle of Humankind, South Africa), the latter hopefully accepted soon in the Journal of Human Evolution. In the same time, he continues the activities on the locality of Langebaanweg (South Africa), leaded by the Iziko Museum of Cape Town, even if it was stopped for almost 2 years. Now all the material has been sorted and separated into taxonomical groups and the study on diurnal raptors is now almost finished. In the next few months, other groups will be analyzed in detail. Other projects on fossil birds from Italy are still going on.

He is also still busy in local projects on extant birds, including the collaboration with Gary Voelker (Texas A&M University), about the evolution of European bird species, their relationships with Africa, also inferred by the study of blood parasites.

- CARRERA, L., SCARPONI, D., MARTINI, F., SARTI, L., PAVIA, M. (2021): Mid-Late Pleistocene Neanderthal landscapes in southern Italy: Paleoecological contributions of the avian assemblage from Grotta del Cavallo, Apulia, southern Italy. – *Palaeogeography, Palaeoclimatology, Palaeoecology*, 567: 110256.
- FUCHS, J., BOWIE, R. C. K., MELO, M., BOANO, G., PAVIA, M., FJELDSA. (2021) Phylogeographical history of the Olive Woodpecker *Dendropicos griseocephalus*, a species widely distributed across Africa. – *Ibis*, 163: 417–428.
- ILHAIANE, L., BOANO, G., PAVIA, M., PELLEGRINO, I., GRUSSU, M., VOELKER, G., GALIMBERTI, A. (2020): Completing the genetic puzzle of the reed warbler complex: insights from Italy. – *Bird Study*, 67 (4): 440–447.
- PAVIA, M. (2020): Palaeoenvironmental reconstruction of the Cradle of Humankind during the Plio-

Pleistocene transition, inferred from the analysis of fossil birds from Member 2 of the hominin-bearing site of Kromdraai (Gauteng, South Africa). – *Quaternary Science Review*, 248: 106532.

- PAVIA, M., DROVETSKI, S.V., BOANO, G., CONWAY, K.W., PELLEGRINO, I., VOELKER, G. (2021): Elevation of two subspecies of Dunnock *Prunella modularis* to species rank. – *Bulletin of the British Ornithologists' Club*, 141(2): 199–210.
- PELLEGRINO, I., CUCCO, M., CALÀ, E., BOANO, G., PAVIA, M. (2020): Plumage coloration and morphometrics of the Little Owl *Athene noctua* in the Western Palearctic. – *Journal of Ornithology*, 161: 1071–1081.
- PELLEGRINO, I., ILAHIANE, L., BOANO, G., CUCCO, M., PAVIA, M., PRESTRIDGE, H. L., VOELKER, G. (2021): Avian Haemosporidian Diversity on Sardinia: A First General Assessment for the Insular Mediterranean. – *Diversity*, 13: 75.
- VILLA, A., CARNEVALE, G., PAVIA, M., ROOK, L., SAMI, M., SZYNDLAR, Z., DELFINO, M. (2021) An overview of the Late Miocene vertebrates from the fissure fillings of Monticino Quarry (Brisighella, Italy), with new data on non-mammalian taxa. – *Rivista Italiana di Paleontologia e Stratigrafia*, 127 (2): 297–354.
- ZUCCON, D., PONS, J.-M., BOANO, G., CHIOZZI, G., GAMAUF, A., MENGONI, C., NESPOLI, D., OLIOSSO, G., PAVIA, M., PELLEGRINO, I., RAKOVIC, M., RANDI, E., RGUIBI IDRISI, H., TOUIHRI, M., UNSOLD, M., VITULANO, S., BRAMBILLA, M. (2020): Type specimens matter: new insights on the systematics, taxonomy and nomenclature of the subalpine warbler (*Sylvia cantillans*) complex. – *Zoological Journal of the Linnean Society*, 190: 314–341.

## NEW ZEALAND

BRIAN GILL (Auckland Museum, retired) published, in collaboration with the archaeologists Louise Furey and Emma Ash, an inventory of the records of moa bones (Dinornithiformes) from both palaeontological and archaeological sites across the Auckland and Coromandel regions of northern New Zealand. It is a region with poor numbers of moa bones and the inventory showed that natural bones are mostly from the Clevedon swamp site near Auckland, and archaeological bones mostly from the chain of sites along the Coromandel Peninsula's east coast. Brian also published the final paper in his work on moa eggshell. This last study looked at 13 sites across the North Island, a region that had only four species of moas (one large, one small and two medium-sized). Other peoples' DNA identifications of limited samples of North Island eggshells showed much overlap in shell thickness between moa species but a good separation of median thicknesses. For each of Brian's sites he produced a histogram showing the spread of thicknesses for large samples of unidentified eggshell fragments. The relative abundance of thick, thin and medium-thickness shell at each site gives an indication of the occurrence and relative abundance in the fossil record of large, small and medium-sized eggs produced by the different-sized moas. A pdf of the paper can be downloaded via this link: <https://www.tandfonline.com/eprint/FDBGSZWG5KGV>

WHWGMIGN/full?target=10.1080/03014223.2021.1970585

In Christchurch, VANESA DE PIETRI and PAUL SCOFIELD, along with TREVOR WORTHY and other long-standing members of the team have continued their work on fossil birds from St Bathans, New Zealand, with manuscripts on more shorebirds and ducks, among other taxa, nearing completion.

Vanessa and Associate Investigators Paul Scofield, Gerald Mayr, Catherine Reid, and Erica Crouch, together with AL MANNERING and LEIGH LOVE, have been awarded a prestigious Marsden Grant by the Royal Society Te Aparangi of New Zealand (from Government funding) to continue their work on the Paleocene fauna of the Waipara Gorge in North Canterbury over the next three years. As a result, Vanessa is shifting to the University of Canterbury in Christchurch early next year.

- DE PIETRI, V.L., WORTHY, T.H., SCOFIELD, R.P., COLE, T.L., WOOD, J.R., MITCHELL, K.J., CIBOIS, A., JANSEN, J.J.F.J., COOPER, A.J., FENG, S., CHEN, W., TENNYSON, A.J.D., & WRAGG, G.M. (2021): A new species of extinct Polynesian sandpiper (Charadriiformes: Scolopacidae: *Prosobonia*) from Henderson Island, Pitcairn Group, and the phylogenetic relationships of *Prosobonia*. – *Zoological Journal of the Linnean Society*, 192(4): 1045–1070. doi [10.1093/zoolinlean/zlaa115](https://doi.org/10.1093/zoolinlean/zlaa115).

- DE PIETRI, V.L., MAYR, G., COSTEUR, L., & SCOFIELD, R.P. (in press, 2021): New records of buttonquails (Aves, Charadriiformes, Turnicidae) from the Oligocene and Miocene of Europe. – *Comptes Rendus Palevol*.
- GILL, B.J.; FUREY, L.; ASH, E. (2021): The moa fauna (Aves: Dinornithiformes) of the Auckland and Coromandel Regions, New Zealand. – *Records of the Auckland Museum* 55: 85-100.
- GILL, B.J. (2021): Thickness histograms of Holocene fossil eggshell fragments indicate diversity and relative abundance of moas (Aves: Dinornithiformes) at North Island sites. – *New Zealand Journal of Zoology* (published on-line).
- MAYR, G., DE PIETRI, V. L., LOVE, L., MANNERING, A. A. & SCOFIELD, R. P. (2021): Oldest, smallest, and phylogenetically most basal pelagornithid, from the early Paleocene of New Zealand, sheds light on the evolutionary history of the largest flying birds. – *Papers in Palaeontology*, 7(1): 217–233.
- MAYR, G., DE PIETRI, V.L. & SCOFIELD, R.P. (2021): New bird remains from the early Eocene Nanjemoy Formation of Virginia (USA), including the first records of the Messelasturidae, Psittacopedidae, and Zygodactylidae from the Fisher/Sullivan site. – *Historical Biology*; doi: 10.1080/08912963.2021.
- MAYR, G., GOEDERT, J.L., DE PIETRI, V. & SCOFIELD, R.P. (2021): Comparative osteology of the penguin-like mid-Cenozoic Plotopteridae and the earliest true fossil penguins, with comments on the origins of wing-propelled diving. – *Journal of Zoological Systematics and Evolutionary Research*, 59 (1): 264–276.
- SCOFIELD, R.P., WOOD, J.R., DE NASCIMENTO, L., ROBERTSON, H.A., COLBOURNE, R.M., DE PIETRI, V.L., INNES, J. AND WEIR, J.T., (2021): Identification of the type locality of the South Island Brown Kiwi *Apteryx australis*. – *Conservation Genetics*, 1–8.
- THOMAS, D.B., TENNYSON, A.J., SCOFIELD, R.P., HEATH, T.A., PETT, W. AND KSEPKA, D.T., (2020): Ancient crested penguin constrains timing of recruitment into seabird hotspot. – *Proceedings of the Royal Society B*, 287(1932): 20201497.
- WORTHY, T.H., R.P. SCOFIELD, S.W. SALISBURY, S.J. HAND, V.L. DE PIETRI, J.C. BLOKLAND, M. ARCHER, (in press 2021): A new species of *Manuherikia* (Aves: Anatidae) provides evidence of faunal turnover in the St Bathans Fauna, New Zealand. – *Geobios*.

## NORWAY

SAMUEL WALKER successfully defended his PhD thesis entitled “Archaeological bird remains from Norway as a means to identify long-term patterns in a Northern European avifauna” (supervised by HANNEKE MEIJER) at the University of Bergen, Norway on June 18, 2021. Sam’s PhD work has significantly expanded the knowledge of avifaunal history within Norway, but has also placed Norwegian data into a regional (Scandinavian) and continental (northern European) perspective. In addition, it has highlighted new questions and research directions. For example, his work showed that despite climatic fluctuations and the rise of urban centres during the Medieval period in Norway, the Medieval bird fauna did not differ from the modern one. However, species that are now ubiquitous in urban areas, such as pigeons, corvids and gulls are mostly absent from Medieval urban centres. In addition, the first occurrences of domestic chickens in Norway suggest that they might have been imported by the Vikings, but it is not until the Medieval period that chickens become more common. Furthermore, his research identified morphological change in Atlantic Puffins in the mid-Holocene linked to a northwards expansion during a period of climatic oscillations. His thesis can be downloaded here: <https://hdl.handle.net/11250/2759160>

On June 5-6<sup>th</sup> 2021, the 10<sup>th</sup> Meeting of the International Council for Archaeozoology Bird Working Group (BWG) was organised by Hanneke Meijer, Anne Karin Hufthammer, Liselotte Takken-Beijersbergen, Samuel Walker and Ramona Harrison. This was the first time in history that a Bird Working Group Meeting was hosted virtually. The last year was an unprecedented year of change and challenge for all of us, and we were delighted to have this opportunity to come together to support one another as scholars and friends. During the two conference days, 32 oral presentations and 11 poster presentations were given, representing the breadth of research into the special relation between birds and humans. More than 120 participants registered for this meeting, including many students who experienced the science and collegiality of our meeting for the first time. In addition, we had several conference participants from South America, South Africa, and Asia, for whom an in-person meeting in Bergen would have been challenging to attend due to financial reasons. From the organizing committee’s perspective, this conference was a great success. A special volume of the *International Journal of Osteoarchaeology* will be dedicated to 29 papers given during this conference and is set to be published in 2023.

## POLAND

- BOCHENSKI, Z.M., TOMEK, T., BUJOCZEK, M., & SALWA, G. (2021): A new passeriform (Aves: Passeriformes) from the early Oligocene of Poland sheds light on the beginnings of Suboscines. – *Journal of Ornithology*, 162(2): 593–604.
- BOCHENSKI, Z.M., & TOMEK, T. (2020): Whodunit? Clues on bird remains from Oblazowa Cave (southern Poland) reveal their origin. – *Quaternary International*, 543: 142–147.
- CAMPBELL, K. E., & BOCHENSKI, Z. M. (2021): A review of the woodpeckers (Aves: Piciformes) from the asphalt deposits of Rancho La Brea, California, with the description of three new species. – *Palaeobiodiversity and Palaeoenvironments*, 101: 1013-1026.
- ELZANOWSKI, A., & LOUCHART, A. (2021): Metric variation in the postcranial skeleton of ostriches, *Struthio* (Aves: Palaeognathae), with new data on extinct

subspecies. – *Zoological Journal of the Linnean Society*, zlab049. DOI: 10.1093/zoolinnean/zlab049.

HAPP, J., ELSLER, A., KRIWET, J., PFAFF, C., & BOCHENSKI, Z.M. (2021): Two passeriform birds (Aves: Passeriformes) from the Middle Miocene of Austria. – *Paläontologische Zeitschrift*, 1–9. <https://doi.org/10.1007/s12542-021-00579-2>

MAYR, G., BOCHENSKI, Z. M., TOMEK, T., WERTZ, K., BIENKOWSKA-WASILUK, M., & MANEGOLD, A. (2019): Skeletons from the early Oligocene of Poland fill a significant temporal gap in the fossil record of upupiform birds (hoopoes and allies). – *Historical Biology*, 32(9):1163–1175.

WERTZ, K., TORNBERG, R., & BOCHENSKI, Z.M. (2021): The taphonomy of medium-sized grouse in food remains of the northern goshawk *Accipiter gentilis*, compared with damage done by man and other predators. – *International Journal of Osteoarchaeology*, 31(2): 188–195

JADWISZCZAK, P., REGUERO, M. and MÖRS, T. (2021): A new small-sized penguin from the late Eocene of Seymour Island with additional material of *Mesetaornis polaris*. – *GFF*, 143(2-3): 283-291. DOI: 10.1080/11035897.2021.1900385

## RUSSIA

MAYR, G. & ZELENKOV, N.V. (2021): Extinct crane-like birds (Eogruidae and Ergilornithidae) from the Cenozoic of Central Asia are indeed ostrich precursors – *Ornithology*, 138: 1–15.

SHNAIDER, S.V., ZHILICH, S.V., FEDORCHENKO, A.YU., RENDU, W., PARKHOMCHUK, E.V., ALISHER KYZY, S., OLENCHENKO, V.V., TSIBIZOV, L.V., SERDYUK, N.V., ZELENKOV, N.V., CHARGYNOV, T. & KRIVOSHAPKIN A.I. (2021): Surungur – new Early Holocene archaeological site in Fergana Valley – *Stratum plus*, 2: 319–337.

ZELENKOV, N.V. (2020): The oldest diving anseriform bird from the late Eocene of Kazakhstan and the evolution of aquatic adaptations in the intertarsal joint of waterfowl – *Acta Palaeontologica Polonica*, 65(4): 733–742.

ZELENKOV, N.V. (2021): A revision of the Palaeocene–Eocene Mongolian Presbyornithidae – *Paleontological Journal*, 55(3): 323–330.

ZELENKOV, N.V. (2021): New bird taxa (Aves: Galliformes, Gruiformes) from the Early Eocene of Mongolia – *Paleontological Journal*, 55(4): 438–446.

ZELENKOV, N.V. & BOESKOROV, G.G. (2021): Dyuktai Goose (*Anser djuktaiensis*) and Hooded Crane (*Grus monacha*) from the Pleistocene of Central Yakutia – *Doklady Biological Sciences*, 499: 99–102.

ZELENKOV, N.V. & GONZALEZ, S.F. (in press, 2021): A new extinct species of *Margarobyas* (Strigiformes) and the evolutionary history of the endemic Cuban Bare-legged Owl (*M. lawrencii*) – *Journal of Vertebrate Paleontology*.

ZELENKOV, N.V., SAYFULLOEV, N. & SHNAIDER, S.V. (2021): Fossil birds from the Roof of the World: The first avian fauna from High Asia and its implications for late Quaternary environments in Eastern Pamir – *PLoS ONE*, 16(10): e0259151.

## SPAIN

FRANCISCO “KIKO” SERRANO continues as a Research Associate at Natural History Museum of Los Angeles County (CA, U.S.A) and was hired as Research fellow at the University of Malaga (Spain). KIKO SERRANO continues his research on the aerial properties of early Cretaceous birds, the morphological disparity among neornithines and the evolution of avian flight.

PITTMAN, M., HEERS, A., SERRANO, F.J., FIELD, D.J., HABIB, M., DECECCHIL, A., KAYE, T. & LARSSON, H. (2020): Methods of studying early Theropod Flight. In Special Issue “*Early Flight Study: Methods, Current Status and New Frontiers*”, M PITTMAN AND X XU (Eds.). – *Bulletin of the American Museum of Natural History*, 440: 277–294.

SERRANO, F.J., & CHIAPPE, L.M. (2021): Independent origins for powered flight in paravian dinosaurs? – *Current Biology* 31: R370–R372

SERRANO, F.J., PITTMAN, M., KAYE, T., WANG X., ZHENG, X., CHIAPPE, L.M., & XU, X. (2020): Laser-stimulated fluorescence (LSF) refines flight modelling of the Early Cretaceous bird *Sapeornis*. In Special Issue “*Early Flight Study: Methods, Current Status and New Frontiers*”, M PITTMAN AND X XU (Eds.). – *Bulletin of the American Museum of Natural History*, 440: 333–345.

SERRANO, F.J., COSTA-PÉREZ, M., NAVALÓN, G., & MARTÍN-SERRA, A. (2020): Morphological disparity of the humerus in modern birds. In “Origins of Modern Avian Biodiversity”, D.J. Field (Ed.). – *Diversity*, 12 (173): 1–17.

## SWEDEN

PER ERICSON continues to work on the systematics of birds using primarily molecular data. He is currently involved in a long-term investigation of the bowerbird family (Ptilonorhynchidae) using phylogenomics.

Together with several colleagues, he has published a book on the evolution of passerine birds: “*The Largest Avian Radiation. The Evolution of Perching Birds, or the Order Passeriformes*” (Lynx Edicions). The last 20

years of DNA-based phylogenetic studies have revolutionized our understanding of the evolution of passerine birds, how they diversified and dispersed across the world. In addition to describing the revised evolutionary history of passerine birds, the authors try to identify adaptational changes, including shifts in life history strategies that underlie major evolutionary expansions.

- ERICSON, P.G.P. & FJELDSA, J. (2020): The origin. *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 19–6.
- ERICSON, P.G.P. & IRESTEDT, M. (2020): Suborder Tyranni: the suboscine passerines. *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 66-71.
- ERICSON, P.G.P., IRESTEDT, M., SHE, H., & QU, Y.H. (2021): Genomic signatures of rapid adaptive divergence in a tropical montane species. – *Biology Letters*, 17: 20210089.
- FJELDSA, J. & ERICSON, P.G.P. (2020): The troubled route to an understanding of the relationships among passerine birds. *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 3–38.
- FJELDSA, J., CHRISTIDIS, L., ERICSON, P.G.P., STERVANDER, M., OHLSON, J.I., & ALSTRÖM, P. (2020): An updated classification of passerine birds. *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 45-63.
- FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (2020): Introduction. *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 11-13.
- FJELDSA, J., MARKI, P.Z., & ERICSON, P.G.P. (2020): What's special about passerines? *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 27-34.
- QU, Y.H., CHEN, C., CHEN, X., HAO, Y., SHE, H., WANG, M., ERICSON, P.G.P., LIN, H., CAI, T., SONG, G., MA, C., ZHANG, H., LI, J., LIANG, L., WU, T., ZHAO, J., GAO, Q., ZHANG, G., ZHAI, W., ZHANG, C., ZHANG, Y. & LEI, F. (2021): The evolution of ancestral and species-specific adaptations in snowfinches at the Qinghai-Tibet Plateau. – *Proceedings of the National Academy of Sciences, USA*, 118: e2012398118 doi:10.1073/pnas.2012398118
- SCHODDE, R., CHRISTIDIS, L., BATALHA-FILHO, H., ERICSON, P.G.P., & IRESTEDT, M. (2021): Why neotypification of *Lophorina superba* (Pennant, 1781) (Aves: Paradisaeidae) is justified - and necessary. – *Zootaxa*, 4951: 304-320.
- SHE, H., JIANG, Z., SONG, G., ERICSON, P.G.P., LUO, X., SHAO, S., LEI, F. & QU, Y.H. (2021): Quantifying adaptive divergence of the snowfinches in a common landscape. – *Diversity and Distributions*. doi.org/10.1111/ddi.13383
- STERVANDER, M., FJELDSA, J., CHRISTIDIS, L., ERICSON, P.G.P., OHLSON, J.I., & ALSTRÖM, P. (2020): An updated chronology of passerine birds. *In* "The Largest Avian Radiation". FJELDSA, J., CHRISTIDIS, L., & ERICSON, P.G.P. (Eds.). Barcelona: Lynx Edicions. pp. 387-396.

## UNITED KINGDOM

DANIEL FIELD'S lab in the Department of Earth Sciences at Cambridge remains primarily focused on the early evolution of crown birds and comparative bird anatomy. In 2021 Daniel took over new roles as the Strickland Curator of Ornithology at the University of Cambridge Museum of Zoology, and as co-director of the Cambridge Biotomography Centre CT scanning facility. His research group currently includes a number of postdocs (Dr Junya Watanabe, Dr Guillermo Navalón, Dr Neil Brocklehurst), postgraduate students (Juan Benito, Albert Chen, Lizzy Steell, Klara Widrig, Pei-Chen Kuo, Bassel Arnaout, Katrina van Grouw, Armin Schmitt, Oliver Demuth, Grace Burton, Abi Crane) and undergrad thesis researchers (Sophie Truempenny, Alex Davis, Emily Smith), who are exploring a range of topics in avian palaeontology and macroevolution

JUNYA WATANABE has started another 2-year fellowship to continue his research in Cambridge. While he is still working on the evolution of wing-propelled diving and flightless birds, most of his recent work has been focusing on morphometric methodology for analyzing phenotypic evolution in general.

For JULIAN PENDER HUME, the coronavirus pandemic has continued to be a major setback, with access to collections limited and fieldwork a distant memory. A light at the end of a very long, dark tunnel is a funded art-based and palaeontological trip to Aldabra Atoll this December, which is dependent on the current pandemic situation remaining stable. The same applies to a

funded palaeontological reconnaissance trip in March 2022 with Antoine Louchart to St Helena, South Atlantic.

- BROCKLEHURST, N. & FIELD, D.J. (2021): Macroevolutionary dynamics of dentition in Mesozoic birds reveal no long-term selection towards tooth loss. – *iScience*, 24: 102243. <https://doi.org/10.1016/j.isci.2021.102243>
- BURNEY, D.A., HUME, J. P., RANDALANA, R., ANDRIANAIVOARIVELO, R., GRIFFITHS, O., MIDDLETON, G., RASOLONDRAINY, T., HOERMAN, R., RAMILISONINA, R. & RADIMILAHY, C. (2020): Rock art from Andriamamelo Cave in the Beanka Protected Area of western Madagascar. – *Journal of Island & Coastal Archaeology*. <https://doi.org/10.1080/15564894.2020.1749735>
- CHEKE, A. S. & HUME, J. P. (in press): The diet, and pellet residue taphonomy, of Barn Owls *Tyto alba* on a Greek island reveals an exceptional diversity of avian prey. – *Acrocephalus*.
- DUCATEZ, S., FIELD, D.J. (2021): Disentangling the avian altricial-precocial spectrum: Quantitative assessment of developmental mode, phylogenetic signal, and dimensionality. – *Evolution*.
- ERICSON, P. G. P., IRESTEDT, M., LARSSON, P., TISON, J-L., EMSLIE, S. D., GÖTHERSTRÖM, A., WERDELIN, L., HUME, J. P., & QU, Y. A (in review): A 14,000-year-old avian genome sheds light on the punctuated evolution of a Pleistocene vulture. – *Science Advances*.

- HUGHES, J.J., BERV, J.S., CHESTER, S.J.B., SARGIS, E.J., FIELD, D.J. (2021): Ecological selectivity and the evolution of mammalian substrate preference across the K–Pg boundary. – *Ecology and Evolution* 00: 1–15. <https://doi.org/10.1002/ece3.8114>
- HUME, J. P. (in review): A new subfossil ground thrush (Aves: Turdidae: *Geokichla*) from Mauritius, Mascarene Islands. – *Bulletin of the British Ornithologists' Club*.
- HUME, J. P. (2021): Obituary. Storrs Lovejoy Olson (April 3, 1944 – January 20, 2021). *Bulletin of the British Ornithologists' Club*, 141(2): 117–118.
- HUME, J. P. & ROBERTSON, C. (2021): Eggs of extinct dwarf island emus retained large size. – *Biology Letters*, 17: 20210012.
- HUME, J. P., HUTTON, I., MIDDLETON, G., NGUYEN, J. & WYLIE, J. (2021): A terrestrial vertebrate palaeontological reconnaissance of Lord Howe Island, Australia. – *Pacific Science* 75(1): 1–31.
- HUME, J. P., GRIFFITHS, O., ANDRE, A. A., MEUNIER, A. & BOUR, R. (2021): Discovery of the first Mascarene giant tortoise nesting site on Rodrigues Island, Indian Ocean (Testudinidae: *Cylindraspis*). – *Herpetology Notes*, 14: 103–116.
- KLEIN, C.G., PISANI, D., FIELD, D.J., LAKIN, R., WILLS, M.A., LONGRICH, N.R. (2021) Evolution and dispersal of snakes across the Cretaceous–Paleogene mass extinction. – *Nature Communications*, 12: 5335. <http://doi.org/10.1038/s41467-021-25136-y>.
- LOUCHART, A., BHULLAR, B.A-S., RIAMON, S., FIELD, D.J. (2021): The true identity of putative tooth alveoli in a Cenozoic crown bird, the gastornithid *Omorhamphus*. – *Frontiers in Earth Science* 9:661699. doi: 10.3389/feart.2021.661699.
- MATTHEWS, T. J., WAYMAN, J., CARDOSO, P., SAYOL, F., HUME, J. P., ULRICH, W., TOBIAS, J. & TRIANTIS, K. (in review): Threatened and extinct island endemic birds: distribution, threats and ecological function. – *Biological Reviews*.
- O'CONNOR, J.K., FIELD, D.J., SULLIVAN, C. (2021): Early avian evolution. – *Frontiers in Earth Science*, 9:730214. doi: 10.3389/feart.2021.7302144.
- TRIANIS, K. A., RIGAL, F., WHITTAKER, R. J., HUME, J. P., SHEARD, C., POURSANIDIS, D., ROLLAND, J., SFENTHOURAKIS, S., MATTHEWS, T. J., THÉBAUD, C. & TOBIAS, J. A. (in review): Deterministic assembly and anthropogenic extinctions drive convergence of island bird communities. – *Global Ecology and Biogeography*.
- WATANABE, J. (2021): Statistics of eigenvalue dispersion indices: quantifying the magnitude of phenotypic integration. – *Evolution*. doi: [10.1111/evo.14382](https://doi.org/10.1111/evo.14382).
- WATANABE, J., FIELD, D.J., MATSUOKA, H. (2021): Wing musculature reconstruction in extinct flightless auks (*Pinguinus* and *Mancalla*) reveals incomplete convergence with penguins (Spheniscidae) due to differing ancestral states. – *Integrative Organismal Biology*, 3(1): obaa040. <https://doi.org/10.1093/iob/obaa040>.
- WATANABE, J., FIELD, D. J., & MATSUOKA, H. (2021): Wing musculature reconstruction in extinct flightless auks (*Pinguinus* and *Mancalla*) reveals incomplete convergence with penguins (Spheniscidae) due to differing ancestral states. – *Integrative Organismal Biology*, 3: obaa040. doi: [10.1093/iob/obaa040](https://doi.org/10.1093/iob/obaa040).

## California

LUIS CHIAPPE and his Natural History Museum of Los Angeles County (NHMLAC) research team continue focused on a number of projects involving fossils from the Jehol Biota as well as Upper Cretaceous sites in Brazil (William's Quarry in Sao Paulo State) and Argentina (the classic locality of El Brete in Salta Province). We are excited to report that USC/NHMLAC doctorate students NATHAN CARROLL AND BECKY WU defended their PhD Dissertations this past fall (congrats Nate and Becky!!). Nate's work on early feather evolution—based on inclusions in Mesozoic amber and coprolites—will be published in a series of future papers. Becky published part of her dissertation on avian dental replacement and its underlying molecular mechanisms early this year (Wu et al., 2021), and she will remain at NHMLAC for a year-long postdoctoral fellowship. Luis is working on a collaborative project focused on cranial anatomy of enantiornithines with DANIEL FIELD and GUILLERMO NAVALON (Cambridge University) and AGUSTIN MARTINELLI (CONICET, Buenos Aires)—the project is based on a series of three-dimensional skulls (preserving various regions) from the Upper Cretaceous William's Quarry of Brazil. Luis continues to collaborate with NHMLAC's ALYSSA BELL on hesperornithiform evolution—they are about to finish a comprehensive review of this remarkable avian group for ERIC BUFFETAUT/DELPHINE ANGST'S volume on flightless birds. Luis is also about to publish work on polymorphism in *Confuciusornis* with JESUS MARUGAN (Universidad Autonoma, Madrid). In addition, postdoctoral fellow KEEGAN MELSTROM led a novel study on dental complexity of Late Jurassic dinosaurs (co-

## USA

authored with Luis and NATE SMITH) and we hope to use the same approach for studying dental complexity in Mesozoic birds (but the methods require 3D rendering of teeth, which are hard to get). Finally, MAUREEN WALSH recently traveled to Switzerland to the Peretti Foundation Museum to prepare a new specimen of a Cretaceous bird.

- SERRANO, F.J. & L.M. CHIAPPE. (2021): Independent origins of powered flight in paravian dinosaurs? – *Current Biology*, 31: R370-372
- BELL, A. MARUGAN-LOBON, J., NAVALON, G., NEBREDA, S.M., & L.M. CHIAPPE. (2021): Quantitative analysis of morphometric data of pre-modern birds: phylogenetic versus ecologic signal. – *Front. Earth Sci.*, 9: 663342. doi: 10.3389/feart.2021.663342
- WU, Y., CHIAPPE, L.M., BOTTJER, D., NAVA, W., & A.G. MARTINELLI. (2021): Dental replacement in Mesozoic birds: evidence from newly discovered Brazilian enantiornithines. – *Scientific Reports*, 11:19349. DOI.org/10.1038/s41598-021-98335-8
- LIU D., CHIAPPE, L.M., WU, Y., MENG, Q., ZHANG, Y., QIU, R., XING, H., & Z. ZHENG. (2021): Cranial and dental morphology in a bohaiornithid enantiornithine with information on its tooth replacement pattern. – *Cretaceous Research*, 129: 105021 <https://doi.org/10.1016/j.cretres.2021.105021>
- MELSTROM, K., CHIAPPE, L.M., & N. SMITH. (2021): Exceptionally simple, rapidly replaced teeth in sauropod dinosaurs demonstrate a novel evolutionary strategy for herbivory in Late Jurassic

### Connecticut

DANIEL KSEPKA is continuing his research on penguins and temporal calibration of phylogenies and dabbling in nonavian projects related to vertebrate brain evolution and choristoderan reptiles. During the period of COVID ravel restrictions Dan has worked remotely on projects including a juvenile fossil penguin and Green River birds, and escaped for minor field work on decidedly non-avian early Jurassic fossils and geological specimens in Connecticut. He continues to serve as Associate Editor of Journal of Paleontology and encourages SAPE members to submit interesting fossil bird papers to the journal. Dan recently oversaw the opening of the new Bruce Museum permanent natural history galleries and is now organizing a Penguins exhibition for the grand opening of the museum's new wing in early 2023.

### Florida

DAVE STEADMAN retired in August 2021. He now lives happily in Arizona. The current plan at the Florida Museum of Natural History is to begin the search soon

### South Carolina

SMITH, N.A., KOELLER, K.L., CLARKE, J.A., KSEPKA, D.T., MITCHELL, J.S, NABAVIZADEH, A., RIDGLEY, R.C., & WITMER, L.M. (2021): Convergent evolution in dippers (Aves, Cinclidae): The Only Wing-propelled Diving Songbirds. – The Anatomical Record, 10.1002/ar.24820.

GIOVARDANI, S., KSEPKA, D.T., & THOMAS, D.B. (2021): A giant Oligocene fossil penguin from the North Island of New Zealand. – Journal of Vertebrate Paleontology: e1953047.

KSEPKA, D.T. (2020): Feathered Dinosaurs. – Current Biology 30: R1347-R1353.

KSEPKA, D.T. (2021): Bird Brain Evolution. – American Scientist, 109: 352–539.

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for Dave's replacement ("Curator of Ornithology"), with a goal of hiring someone to begin in August 2022.

BARON, J., D.S. DHILLON, N.A. SMITH, AND E. PATTERSON. (2021): Microstructure-based appearance rendering for feathers. – Computers & Graphics.

STIDHAM, T.A., N.A. SMITH, & Z. LI. (2021): A Pleistocene raven skull (Aves, Corvidae) from Jinyuan Cave, Liaoning Province, China. – Quaternary International.