

PalNews

Biannual newsletter for the Palaeontological Society of Southern Africa



In Celebration of the 100 year anniversary of the discovery of the Taung Child.
Image adapted from Chip Clarke, Smithsonian Institution

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PALNEWS APRIL 2024

From the Editor

As we embark on another exciting year, I find myself reflecting on the journey we've shared in 2023. The articles you've submitted, each a testament to your passion and dedication to palaeosciences, have truly enriched our newsletter and sparked curiosity among our readership. I want to extend my gratitude to each and every one of you for your contributions.

Editing the newsletter has been a great personal pleasure for me, as it has allowed me to witness firsthand the groundbreaking work being done in our community, not only in the advancement of your individual fields, but in the heartfelt work that you have invested in community engagement and science communication. Your commitment to excellence and your unwavering enthusiasm for palaeosciences continue to inspire me and others.

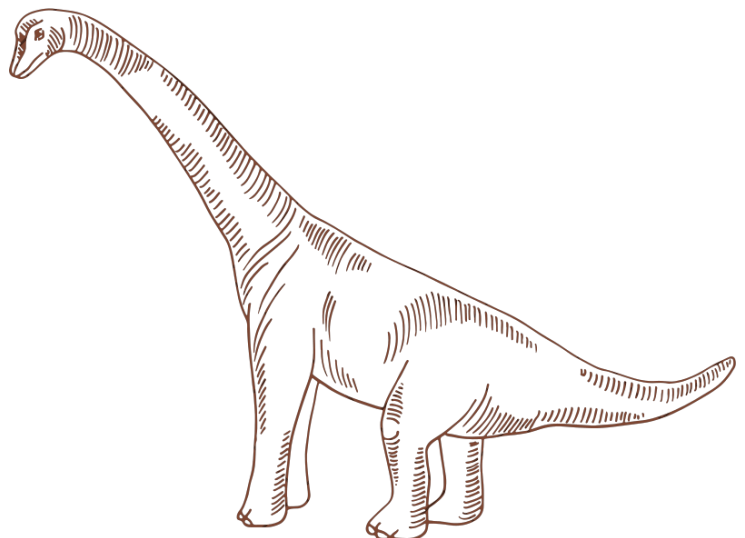
I am confident that 2024 will be a year filled with even more remarkable achievements, and I eagerly anticipate the articles and insights that you will share with us in the coming months.

Thank you once again for your contributions to our newsletter and for being an integral part of our vibrant palaeosciences community. Here's to a year filled with discovery, collaboration, and continued success.

Sincerely

Caitlin Rabe

PhD Candidate at the University of Cape Town
PalNews Editor





IN MEMORIAM

Martin G. Lockley

1950 – 2023

Written by Charles Helm, African Centre for Coastal Palaeosciences

When Martin Lockley passed on last November, the ichnology community in the Western Cape and Eastern Cape lost a wonderful mentor, an outstanding colleague, and a dear friend.

After an initial visit to Africa to attend the 2017 International Conference of Continental Ichnology (organized by Emese Bordy and her students) Martin visited the Cape south coast of South Africa on two occasions to assist our research team there. As a result, he led three papers describing the ichnological findings in Cape coastal Pleistocene deposits, and was co-author on another fourteen. A special moment was when he identified a hominin footprint which turned out to be 153,000 years old and the oldest *Homo sapien* track thus far identified. He also visited Lesotho on two occasions with Emese Bordy and her team, and visited the dinosaur tracksites initially documented by one of his heroes, Paul Ellenberger. Martin and Emese together were part of six peer-reviewed publications.

We will miss many things about Martin. One of which was his astonishing memory. All told, he produced more than 1,000 publications and more than 600 peer-reviewed scientific articles on vertebrate fossil footprints.

Yet if one called him for advice on something that seemed rather arcane, within a few minutes there would be an email with an attachment of precisely the reference one needed – way better than any search engine.

In his last year, in addition to spending time with his family and beloved grandchildren, Martin tried to tidy up as many projects as possible. He succeeded in some cases, and didn't have time to complete others, and Martin's name will posthumously appear on several papers we are currently working on. He also worked on a new book, *The Tracker Priests*, got it almost publication-ready, and asked a few of us to ensure that it does indeed get published. As late as August 2023 he was still doing something he loved best – conducting research in the field.

Martin was born in Jersey. His father was a noted naturalist, Oscar winner, and writer, so a love of Nature and of writing was instilled in him from an early age. Family friends included Julian Huxley and Sir David Attenborough. He grew up in what is now a nature preserve in Wales. He earned a BSc in Geology at Queen's University, Belfast, followed by a PhD (Ordovician paleontology in Wales) at the University of Birmingham,



Left: Martin Lockley looking for tracks in aeolianites in South Africa. Right: Martin Lockley and Charles Helm on the South African coast after Martin had discovered what turned out to be the oldest *Homo sapiens* track thus far identified.

and then a post-doctoral fellowship at Glasgow University under the direction of his mentor, Sir Alwyn Williams.

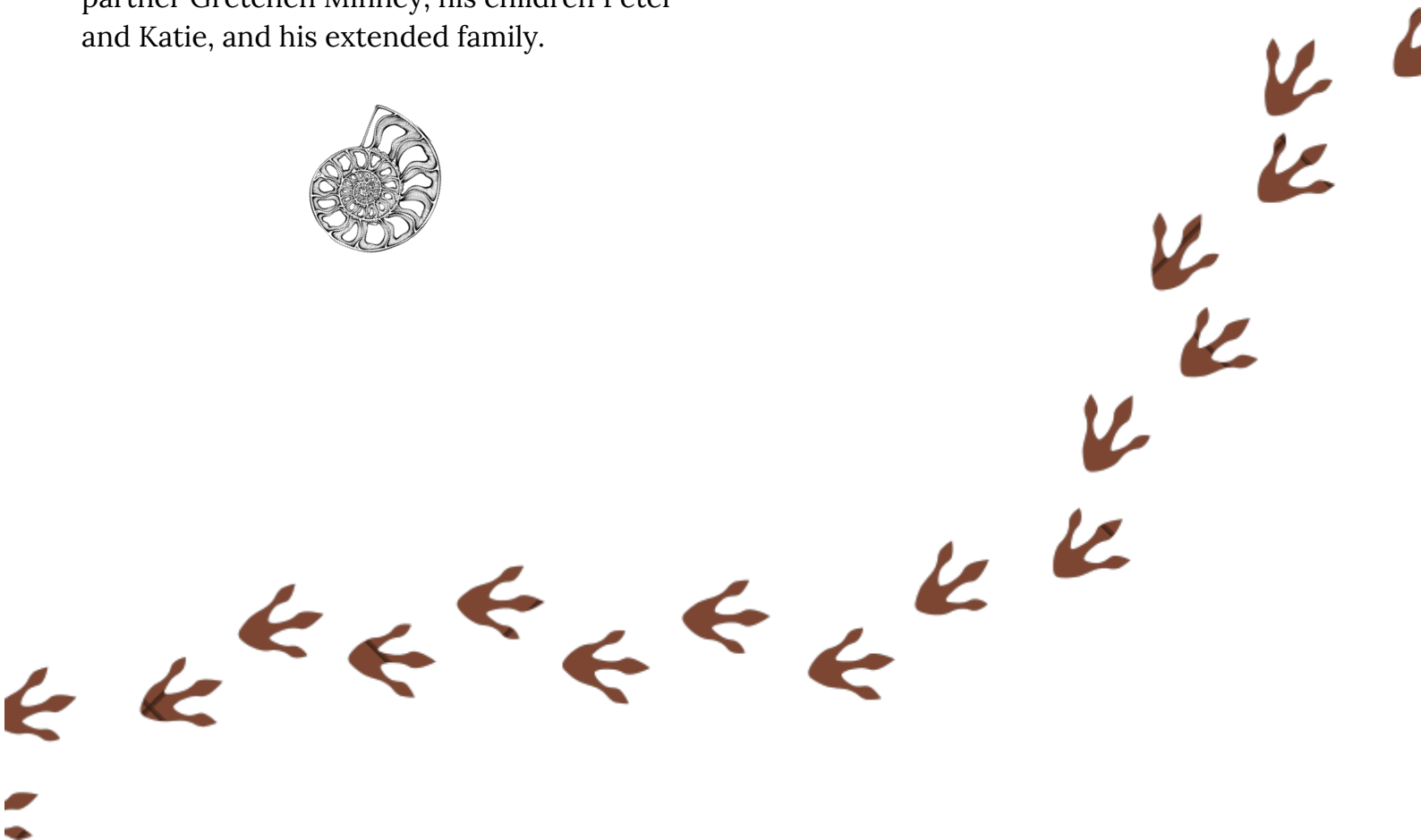
In the 1980s Martin took a position at the University of Colorado at Denver, where his focus shifted from geology to dinosaur tracks. He created the Dinosaur Tracks Museum, where he amassed an immense collection of tracks, including several replicas from the Peace Region. In many ways Martin instigated the formal discipline of ichnology, and was involved in outreach, the protection of important tracksites and the establishment of 'Dinosaur Ridge' in Colorado. He received numerous awards from institutions such as the Society of Petroleum Geologists and the Rocky Mountain Association of Geologists, and his

love of teaching was recognized through the University of Colorado Student Generated Award for Teaching. In 2018, the ichnogenus *Lockleypus* was named in his honour. In 2020, he became the first non-Korean to receive the Korean Presidential Medal for Distinguished Achievements (this was in recognition of all the work he had done on dinosaur tracksites in South Korea).

Martin's expertise and talents extended to rugby and athletics – he twice won the All-England Schools championship in shot put, and in later life competed as a Masters Athlete in decathlon. In 2007 he broadened his interests, earning a BA in Spanish with a minor in Religious Studies. The resulting insights led to a book on the evolution of consciousness. He was a collector of rare

books and was a voracious reader. His tastes were eclectic and ranged from Monty Python and Trevor Noah to Carl Jung and Masterpiece Theatre.

Martin's colleagues are creating a festschrift for him. Sadly, he will not see it, but he knew that it was being produced, and the many chapters will bear testimony to the high regard in which he was held. While the loss of our mentor seems irreplaceable, we will cherish his memory every time we inevitably cite another of his articles, and we will all do our utmost to keep his legacy alive. Our condolences go to his long-time partner Gretchen Minney, his children Peter and Katie, and his extended family.



UPDATES

from people and places

GENERAL ANNOUNCEMENTS

7th International Palaeontological Congress: First Circular

You are warmly invited to attend the 7th International Palaeontological Congress (IPC7) in South Africa in 2026. This is the first time that this meeting will be held in Africa, and we are delighted to be hosting the meeting in Cape Town during our pleasant early summer season from the **30 November to 3 December 2026**.

The venue for IPC7 will be the top-rated sustainably designed Century City Conference Centre (CCCC) (ccconferencecentre.co.za), which has cutting-edge technological facilities and the capacity to host hundreds of delegates. The CCCC is situated in Century City, which is just 10 mins from Cape Town's CBD, and hosts several hotels, and numerous restaurants to suit all pockets. CCCC is meticulously maintained, a short walk to the award-winning wetlands and bird sanctuary, Intaka Island (<https://intaka.co.za/>), and the beautifully landscaped Ratanga Park. We are also organising a series of fieldtrips to give delegates a feel for the richly fossiliferous rocks in southern Africa that span significant periods of geological time.

Among the fieldtrips planned are a mid-conference day trip to West Coast Fossil Park, as well as a visit to the local Iziko SA Museum



of Cape Town. In addition, several pre- and post-conference trips are being planned to the:

- Karoo Basin
- Evolution of Early-Middle Palaeozoic environments and ecosystems of South Africa
- Devonian Ecosystems
- Lower Jurassic of Southern Africa
- Maropeng Cradle of Humankind

More details about the different fieldtrips are available on our website:

[The 7th International Palaeontological Congress \(ipc7.site\)](http://ipc7.site)

Museum collection visits to various museums (see below) in South Africa can be arranged post- or pre- conference:

- Iziko Museums of Cape Town
- Ditsong Museums (Pretoria)
- Albany Museums (Makhanda)
- Bloemfontein National Museum
- Evolutionary Studies Institute (Johannesburg)

The conference is open to any aspect of palaeontology, and we invite you to propose a symposium or themed session on any of the following topics, or on any other topic for which you think you would be able to attract speakers: Early Life: origin, and diversification; Palaeozoic seas; Evolution of trees and forests; Early animals; Tetrapod diversification; Therapsid diversification; Diversification of angiosperms; Rise of Archosauromorpha; The rise and diversification of nonavian dinosaurs; Evolution of birds; Palaeoneurology; Devonian stratigraphy, environments, and palaeontology; Cenozoic vertebrates; Extinctions; Ichnology; Continental Palaeoecology; Indigenous Knowledge; Indigenous palaeontology; Evolution of the brain and nervous system; Palaeohistology of mineralised tissues; Hominin diversification; Palaeosciences to the wider public; Synchrotron imaging and 3D imaging; 3D Morphometrics; General palaeontology.

Preliminary registration for the conference:
[The 7th International Palaeontological Congress \(ipc7.site\)](http://ipc7.site)



Future circulars will provide more details regarding abstract submission format and deadline, accommodation, etc. If you have any questions, you are welcome to contact us by email 2026ipc7capetown@gmail.com or on our social media channels.

Organising Committee:

Prof. Anusuya Chinsamy-Turan, (Chair), Prof. Emese M. Bordy, Dr. Miengah Abrahams, Dr. Maria-Eugenia Pereyra, and Ms Caitlin Rabe (postgrad student) from the University of Cape Town; Prof. Marion Bamford, Prof. Jonah Choiniere, Prof. Julien Benoit, and Dr Cameron Penn-Clarke from the University of the Witwatersrand; Dr. Romala Govender, Iziko Museums of Cape Town; Dr. Mirriam Tawane, Ditsong Museum; Dr. Rob Gess, Albany Museum; Jonatan Dechamps, Website manager.



@IPC7



@ipc7_2026



IPC7

PSSA Code of Conduct

Members of the PSSA Executive Committee, and associates are currently finalising a draft Code of Conduct, which will be circulated to the community shortly. We encourage everyone to comment and provide suggestions when the draft is circulated.

The team working on the Code of Conduct includes Anusuya Chinsamy-Turan, Pia Viglietti, Ryan Nel, Wade Harris and Fay-Yaad Toefy.

Centenary of the discovery of the type specimen of *Australopithecus africanus*: How old is the Taung Child?

Francis Thackeray

This year we are celebrating the 100th anniversary of the discovery of the Taung Child in 1924. Raymond Dart described it in *Nature* in the following year as *Australopithecus africanus*.

The skull was blasted out of breccia by miners using dynamite to mine for limestone, so context was lost and we don't know exactly how old the fossil is. But last year (with the late Sue Dykes) I published a paper on how we might adopt a biochronological approach, using ratios from dental measurements to date australopithecine fossils from South African limestone caves, including *A. africanus* from Sterkfontein Member 4, *A. prometheus* from Makapansgat as well as *A. africanus* from Taung.

We have used measurements of lower first molars of the Taung Child to obtain a date of **2.58 million years (Ma)**. The **average date** which we have estimated for *Australopithecus* from Sterkfontein is **2.76 million years** (not surprising, but with a wide range). *Australopithecus* from Makapansgat is estimated (again not surprisingly) to be **3 Ma**.

The dating of *Australopithecus* in South Africa is currently a matter of a Great Debate in the pages of the Proceedings of the National Academy of Sciences (USA), PNAS. One camp (Frost et al, 2022, 2023)



Cast of the Taung Child - Francis Thackeray.

claims that dates for australopithecines at Sterkfontein (Member 4) range between 2 and 2.6 Ma. But another camp (Granger et al, 2022, 2023) is claiming ages ranging between 3.4 and 3.7 Ma. What a discrepancy ! But Thackeray and Dykes (2023) claim that dates for *Australopithecus* at Sterkfontein (Member 4) range between about 2 and at least 3.5 Ma, essentially satisfying both camps.

The ages were published in two papers:

Thackeray J.F. 2023. A tribute to Yves Coppens: age estimation of Australopithecines in South Africa. *Bulletin of the Monaco Museum of Anthropology and Prehistory*, Hors-série 10:23-27.

Thackeray, F. and Dykes, S. 2023. Biochronological ages for South African Australopithecus and a Plio-Pleistocene African hominin lineage (1,5 - 3,5 Ma)? *The Digging Stick* 40 (1):11-12.

The cupule *Kannaskopia* from the Upper Triassic, Molteno Flora, Gondwana: Exploring the whole plant and habitat

Heidi Holmes

I was recently invited to give a Zoom lecture on my research and our latest book on the Molteno Flora from southern Africa. It is about half an hour long followed by a discussion.

The lecture gave some historical background to my palaeobotanical studies over the decades with John Anderson – leading to the publication date of 8 monographs.

Our latest book on the Molteno Flora from southern Africa deals with the cupulate strobilus *Kannaskoppia vincularis* which has been found attached to a stem with leaves. In addition to this unique occurrence in the Gondwana Triassic, stems with male organs and leaves attached were also found. We have been able to reconstruct the whole-plant and place the various species in their Molteno Habitats – all rendered in full colour.

As in our previous studies on the Molteno flora the Palaeodeme approach was followed in the circumscription of species. A Gondwana-wide review of the affiliated leaves known as *Rochipteris* has resulted in 24 accepted species; with 12 known from the Molteno (of which 7 are endemic). The anastomosing venation characteristic of these leaves was extensively illustrated with line drawings and photographs.



An excerpt from the recorded lecture – Heidi Holmes.

The current study of *Kannaskoppia* and affiliates supports previous phylogenetic, anatomical and ecological studies, that amongst the gymnosperms the order Petriellales constitutes a likely sister group of the angiosperms. I included photos of the visit (2022) by Peter Crane, an expert on early angiosperms, who came to South Africa to study some of the other interesting Molteno cupules: which will be the subject of a forthcoming paper.

Many thanks to palaeobotanists Natalia Zavialova and Eugene Kararsev for organising this Zoom.

It is available at:

https://www.youtube.com/watch?v=N7cPmY2_aeU&t=1s



News from Graaf-Reinet & PSSA Conference Updates

Bruce Rubidge

We have had a bumper response to the third PSSA circular with more than 120 people wishing to do presentations, which is an indication of the vibrant palaeontological research climate in South Africa. This meeting has attracted delegates from 14 countries, apart from South Africa, with many contributions under each of the conference sessions: Bob Brain Symposium on the Hominin Record; Karoo Palaeontology; Ordovician – Devonian Palaeontology; Technical session and General. To accommodate this large number of presentations, the duration of the conference has been extended by a day. Registration on Sunday evening 8 September; Conference proceedings Monday 9 – Thursday 12 September; and Field trip on Friday 13 Sept.

The conference will take place at the [SA Co for Tourism](#), which is on top of the hill overlooking the town on the northern side. This is a wonderful venue with great views and is the only facility in the town able to accommodate this number of people for a conference. At the last PSSA meeting in 2022, I spoke about my dream to establish a Karoo Palaeontological Research and Exhibition Centre in Graaff-Reinet using the Rubidge Collection as a nucleus. This dream is becoming a reality. A company “Karoo Origins – the Fossil Centre”, has been registered and currently has four staff members, Marc Van Den Brandt, Justin Arnols, Marina, and Bruce Rubidge. A building contractor is working feverishly to complete the building by the time of the conference, while our creative and –



Photograph of part of the Rubidge Collection in its current location on the farm Wellwood.

dedicated exhibition team (Fancy Horse), is burning midnight oil in Cape Town to build the exhibits. The exhibition cases are currently being constructed and we intend moving the Rubidge Collection, from the Wellwood farm to Karoo Origins by the time of the conference. There will be an opportunity to view the fossils in their new display cases during the conference but should delegates wish to study specimens in the collection, they should arrange this with me in advance so that this can be facilitated. In April 2024 the team will be heading to the field in the vicinity of Prince Albert Road for two weeks, to explore the exciting palaeontological fields of the lowermost Beaufort Group. In 2023 we had a very productive time collecting fossils from the stratigraphic interval in the upper horizons of the *Eodicynodon* Assemblage Zone where we found other dicynodonts in association with *Eodicynodon*. This year, we will continue our pursuit to understand middle Permian biodiversity change and work stratigraphically upward to determine where *Eodicynodon* disappears, and which dicynodont replaces it.

We are not only setting up Karoo Origins and its displays, but our team is also actively engaged in research and over the past year the following papers have been published:

Papers published in 2022:

BISHOP, P.J., NORTON, L.A., JIRAH, S., DAY, M.O., RUBIDGE, B.S. & PIERCE, S.E. 2023. Enigmatic humerus from the mid-Permian of South Africa bridges the anatomical gap between “pelycosaurs” and therapsids. *Journal of Vertebrate Paleontology* 42 (3), doi.org/10.1080/02724634.2023.2170805

BORDY, E.M., CHOINIÈRE, J.M., SMITH, R.M.H., & RUBIDGE, B.S. 2023. Selected Karoo geoheritage sites of South Africa and Lesotho. *Geological Society of London*. [doi: 10.1144/SP543-2022-202](https://doi.org/10.1144/SP543-2022-202)

DUHAMEL BENOIT, J., WYND, B., WRIGHT, A. & RUBIDGE, B.S. Redescription of three basal anomodonts: a phylogenetic reassessment of the holotype of *Eodicynodon oelofseni* (NMQR 2913). *Front in Earth Science*. 14 February 2024, Volume 11, [doi: 10.3389/feart.2023.1220341](https://doi.org/10.3389/feart.2023.1220341)

GROENEWALD, D.P., KRÜGER, A., DAY, M.O., PENN-CLARKE, C.R., HANCOX, P.J., RUBIDGE, B.S. 2023. Unique trackway on Permian Karoo shoreline provides evidence of temnospondyl locomotory behaviour. *PlosOne*. doi.org/10.1371/journal.pone.0282354

GROENEWALD, D.R., DAY, M.O., PENN-CLARKE, C. & RUBIDGE, B.S. 2023. Stepping out across the Karoo retroforeland basin: improved constraints on the Ecca-Beaufort shoreline in the distal sector. *Journal of African Earth Sciences* 104389. 21pp. <https://doi.org/10.1016/j.jafrearsci.2021.104389>

HANCOX, P.J. & RUBIDGE, B.S. 2023. The Beaufort-Stormberg Group contact – Implications for Karoo basin development in the Triassic. *Journal of African Earth Sciences*. <https://doi.org/10.1016/j.jafrearsci.2022.104767>

RUBIDGE, B.S. 2023. Charles Kimberlin (Bob) Brain (1931-2023): Naturalist, scientific leader, and family man. *South African Journal of Science*, 2023;119(9/10), Art. #16660. <https://doi.org/10.17159/sajs.2023/16660>

RUBIDGE, B.S., BENOIT, J., & DAY, M.O. 2023. First record of the rare dicynodont *Colobodectes* from the southern Karoo Basin of South Africa has implications for middle Permian continental biostratigraphy. *Journal of African Earth Sciences* 208, <https://doi.org/10.1016/j.jafrearsci.2023.105097>

SZCZYGIELSKI, T., VAN DEN BRANDT, MJ., GAETANO, L., DRÓZDŹ, D. 2024. *Saurodesmus robertsoni* Seeley 1891 – the oldest Scottish cynodont. *Plos ONE*. (in press).

VAN DEN BRANDT, MJ., DAY, MO., MANUCCI, F., VIGLIETTI, PA., ANGIELCZYK, K., ROMANO, M. 2023. First volumetric body mass estimate and a new in vivo 3D reconstruction of the oldest Karoo pareiasaur *Bradysaurus baini*, and body size evolution in Pareiasauria. *Historical Biology* 36(3), 587-601, <https://doi.org/10.1080/08912963.2023.2175211>

VAN DEN BRANDT, MJ., CISNEROS, JC., ABDALA, F., BOYARINOVA, EI., GOLUBEV, VK., NORTON, LA., RADERMACHER, V., RUBIDGE, BS. 2024. Cranial osteology and a new diagnosis of the late Permian pareiasaur *Nanoparia luckhoffi* (Broom, 1936) from the Karoo Basin of South Africa, and a consolidated Pareiasaurian phylogeny. *Revista Brasileira de Paleontologia* 26(4), 288-314. <https://doi.org/10.4072/rbp.2023.4.04>

News from Iziko - Karoo Palaeontology Unit

Claire Browning & Zaituna Skosan

Hello PalNews readers, it's been a while! Here are some notable highlights from the Karoo Palaeontology Unit at Iziko over the past year (or so...).

Research

We are excited to announce three new research associates in Karoo Palaeontology at Iziko: Dr Wendy Taylor, Dr Derik Wolvaardt and Dr Pia Viglietti. They join our existing associates, Prof Roger Smith and Dr Thalassa Mathews, who continue to provide invaluable support for research and education outputs at the museum.

The Karoo Palaeontology Unit is involved in several active research projects and collaborations this year.

The AOP-funded “Post-extinction ecosystems in the Early Triassic Karoo Basin” project, led by Roger, has been one of the main focusses of our unit. As a collaborator and curator, Claire is involved in the research component of this project and her Iziko Karoo Palaeontology team continues to provide logistical support during field trips as well as fossil preparation outputs.

The National Science Foundation (NSF) has recently funded a project led by Pia Viglietti and Ken Angielczyk (both based at the Field Museum) that aims to test various models for faunal recovery following the PT mass extinction. Iziko is proud to be involved in both the research and outreach components of this exciting new project.



Research continued on the AOP-funded “post-extinction ecosystems in the Early Triassic Karoo Basin” project. Throwback to 2022 when the Iziko team (Shandre' Collins, Sibusiso Mtungata, Claire Browning, Nyaniso Nofingxana, Roger Smith and Derik Wolvaardt) was joined by Alison Park (Namibian intern), Juan Cisneros (Universidade Federal do Piauí, Brazil) and Caitlin Rabe (PhD student at UCT).



Brandon Peecook and Claire Browning carefully mount the block containing four specimens of *Heleosaurus scholtzi* (SAMPK-K8305) into the plastic tube that secures and stabilizes it for the beamline, where Xavier Jenkins ensures that the specimens are properly orientated. Four Iziko specimens were imaged during this research visit including *Heleosaurus scholtzi* SAMPK-K8305; *Sauropareion anoplus* SAM-PK-11192; *Australothyris smithi* SAM-PK-K8302; and the "Youngina" block SAMPK-K7710.

After a successful trip to the European Synchrotron Radiation Facility (ESRF) last year, Claire is working with PhD student Xavier Jenkins and collaborators/supervisors (Brandon Peecook, Johah Choiniere, Roger Benson, David Ford, Kathleen Dollman, and Vincent Fernandez) to publish results from the ISAM specimen scans. The high-resolution scans obtained of these specimens (*Heleosaurus scholtzi* SAMPK-K8305; *Sauropareion anoplus* SAM-PK-11192; *Australothyris smithi* SAM-PK-K8302; and the "Youngina" block SAMPK-K7710) will enable Iziko to reduce the handling of type specimens in the future and will contribute to the improved understanding of neuroanatomy and sensory capabilities of early amniotes.

Claire submitted her part-time PhD thesis in February entitled: "Dust-bearing marine mudstones in the Cedarberg Formation (Late Ordovician–Early Silurian, South Africa) record deglacial palaeoclimate and a cryptic meiofaunal ecosystem" and is currently converting thesis chapters into publications. She plans to expand this post-glacial research into the Karoo Basin and has submitted a funding proposal to study fossils and marine snow in the mudrocks of the Dwyka and lowermost Ecca Groups.

In the Lab

The indispensable fossil preparation team (Shandre' Collins, Nyaniso Nofingxana, and Olivia Martin) continue "scribing away" at the rocks under the watchful eye of lab manager Nolusindiso Mtalana and experienced preparator Sibusiso Mtungata. We are lucky to have such a dynamic team of fossil preparators in the lab and are hoping (fingers crossed for funding!) that everyone in the lab will be able to attend and present at the PSSA this year.

The Collection

Zaituna Skosan and Marchelle Van Der Westhuizen have been very busy reorganizing the collection and maintaining the Specify Database throughout the year. Most of the specimens in the collection are now re-packaged and no longer have the dreaded "white box tie" that marked the Courtyard Project move. Zaituna and Marchelle have also welcomed a few volunteers, including grade 10 learner Albert Van Zyl, who was eager to help out in the collection.

We are grateful to the National Science Collection Facility (NSCF) for funding two



Sibusiso Mtungata, upholding the exacting fossil preparation standards in the Iziko KP lab with his recently prepared *Micropholis* specimen. On his desk lies his next challenge: the “Tygerberg Mystery” specimen (watch this space...).

new contract positions at Iziko. Both of these positions were motivated by the need to accession and prepare specimens from donated collections.

It was a bustling year in the collection as we welcomed a number of local and international visitors including Caroline Abbot, Nadia Teixeira, Paul Byrne, Fonda Ricardo, Julien Benoit, Valentine Buffa, Thabile Seerane, Jack Lovegrove, Mark Howson, Caitlin Rabe, Mark Van den Brandt, Atashni Moopen, Brandon Stuart, Bailey Weiss, and Megan Whitney. Most recently we hosted a team of Brazilian researchers (Felipe Pineheiro, Arielli Machado and Voltaire Paes Neto) who also did the first “live stream” in the Iziko Exhibitions.

Outreach

The Karoo Palaeo Team at Iziko has continued to support various museum-based outreach programs this year. One of our highlights was the GIFT Workshop



Zaituna showing our new NSCF-funded contract staff (Aidan Wilton and Olivia Martin) the ropes!

(sponsored by the European Geosciences Union), where Claire was invited to give a talk to high school science teachers about the rise of life in Earth’s oceans. Puppet Planet events were also a hit this year, with several events hosted at Iziko. Puppet Planet is a children's educational program that uses science storytelling with puppetry to celebrate South Africa's natural heritage and we are grateful for this continued outreach collaboration with



Felipe Pineheiro, Voltaire Paes Neto, and Arielli Machado excited to be working in the Iziko KP Collection.

Wendy Taylor (Puppet Planet founder and CEO). Following a successful trip to the Field Museum last year, the Iziko team (and collaborators Pia Viglietti, Ken Angielczyk, Robyn Symons, and Wendy Taylor) are developing content for PalaeoLink; an online school dedicated to sharing fossil preparation skills and techniques. Thanks to the Bill Stanley African Scholar Program and Iziko for funding this initiative!

The subject of past extinction events continues to be a hot topic and we have had several requests for interviews, mostly from documentary film makers. In April, Roger and Claire were interviewed by Thomas Cirotteau who is directing a documentary on the evolution of mammals and the PT extinction. Last year, Claire and Wendy were interviewed by Gordon Greaves for a documentary on the sixth mass extinction

<p><i>ARO jack</i></p>	<p><i>Oudenodon</i></p>	<p><i>Micro-jack 2 & 3</i></p>
<p>Used to prepare small - medium sized fossils</p>	<p>Artist: Jeffrey0409</p>	<p>Used to prepare small or delicate fossil bones and teeth</p>

Some examples of the content we are currently developing for our collaborative PalaeoLink project that aims to empower palaeoscience technicians through online professional development.



Thomas Cirotteau briefing Shandre, Claire, and Roger for the documentary film on the evolution of mammals and the PT extinction.

and the role that science communication plays in education about the human impact on climate and ecosystems. Iziko curators, Wendy Black and Claire Browning also appeared in the newly released film !Aitsa, directed by Dane Dodds, which explores human experience and understanding of the Karoo region.



Puppet Planet outreach programs are a hit at the museum!

News from the National Earth Science Museum

Helke Mocke



Buntfeldschuh Site in the Tsau Khaeb National Park.

The last few months have been eventful at the museum with various short field surveys to fossil sites in Namibia, outreach events, the nomination of one additional IUGS (International Union of Geological Sciences) geological heritage site for the “Second 100 Geological Heritage Sites” and attendance of the 29th Colloquium of African Geology.

In September the Geological Survey of Namibia hosted the 29th Colloquium of African Geology in Windhoek, Namibia over four days welcoming more than 400 senior and early-career earth scientists from 49 different countries across the globe. The conference’s subthemes covered a variety of fields ranging from ore deposit geology,

African geological and palaeontological record, mineral investment and economics, data management, geotourism, climate change and energy transition, as well as medical geology and agro-geology. Several interesting presentations were given on palaeontology including Triassic bone accumulations in Tanzania, marine tetrapods from Angola, fossils from Bolt’s Farm and Ediacara fossils from Namibia to name a few.

The Geological Survey of Namibia proposed “Ediacaran-Cambrian paleontological and geological sites of the Nama Group, Namibia” as part of the “First 100 IUGS Geological Heritage Sites”. This serial site



High School pupils that participated in the Heritage Week debates.

was postponed to the second 100 round of IUGS sites. IUGS requested a second new nomination and after considerable brainstorming, we decided to nominate the Etosha Pan, with the main interest being geomorphology and active geological processes, but with the secondary interest focused on palaeontology. The main argument for nominating the site is that it is “One of the largest palaeolake salt pans in the world which supported a diverse Neogene to Pleistocene fossil fauna”. More will follow soon on the two sites at the 37th International Geological Congress (IGC) to be held 25-31 August 2024 in Korea.

In September 2023 (18-23) Namibia celebrated Heritage Week under the theme “Heritage and Culture: A Rock-Solid Foundation”, which was also translated to sign language. We visited grade four learners of three primary schools to read a book about the earth’s three types of rocks, titled “As Hard As a Rock”. The learners participated in the reading and were shown examples of some of the rocks. We also held a debate on “How Can Mining Benefit Namibians?” at the museum as part of the Heritage Week and three high schools

visited the museum to participate in this debate. All the learners’ feedback was very positive with requests to hold similar activities again.



Admiring a rock during Heritage Week.



Heritage Week reading activity.

Finally, three palaeontological surveys took place to the Sperrgebiet, Otavi Mountains and the Nama Group (Ediacara fossil sites).

In April 2023 I had the pleasure of joining Dr Alex Liu and his team from the University of Cambridge at a newly discovered Ediacaran locality in southern Namibia. In 2022 Dr Liu's team focused on new, palaeontologically un-surveyed areas. At one such site his team discovered large, blob-like fossils with creases and folds, and a grid like pattern which may be the fossilized remains of sponges. Currently, further research is being done on these specimens to understand their identity. Several other interesting fossils were found including fossils resembling *Dickinsonia*, *Kimeberella*, *Charnia* and an entire algal mat with many annulated tubes resembling an iron death mask preservational style. A student from the University of Namibia and employee of the Geological Survey of Namibia, Elkan Utoni, is currently studying the algal mat with the annulated tubes community as part of his Masters.

During May 2023 I visited the fossil sites in the Sperrgebiet or Tsau //Khaeb National Park. Some interesting new finds were made, for example at Elisabethfeld and Grillental no. 6 respectively fossils of elephant and rhino bones were collected. This indicates that larger mammals frequented the northern Sperrgebiet during the Miocene. Sediments of Grillental Knoll Site were washed and screened at camp and resulted in the discovery of tiny micromammals indicating the availability of a variety of niches for different sized animals at Grillental. Langental yielded the fossil mandible of the bovid *Propalaeoryx stromeri* with first and third lower molars, and an incisor. The site also delivered a complete lower jaw of *Pomonomys*. The age of the Buntfeldschuh marine gravels needs to be investigated in more depth. In the past many *Isurus* shark teeth have been collected at Kakaoberg over the years. The earliest *Isurus* shark found (not in Namibia) dates to the Lutetian (41.2-47.8 Ma) and therefore the marine gravels form Buntfeldschuh are likely younger than 47.8 Ma. In addition, the -



From left to right, Mr Utoni and Dr Liu studying interesting annulated tube fossils from the Nama Group.



Fossilized beetle cocoon from the Otavi Mountains.

rounded cobbles containing Eocene gravels may support a Miocene beach theory for the area.

Finally, in May and June 2023 a survey was continued in the Otavi Mountains. The Otavi Mountainland is a large range of karstified dolomite mountains that preserve collapsed cave systems, crevices and sink holes that have been infilled with sediments containing fossils ranging in age from the Miocene (approximately 13 million years ago) to Recent. These fossils have assisted geologists to determine and better understand the timing of the base metal mineral deposits in the area. Several sites were visited including Berg Aukas, Harasib, Kombat and Rietfontein. The Kombat site was especially productive, yielding 203 fossil samples, while breccia samples collected from the other sites will be prepared in the laboratory using the acid preparation method.

Papers and abstracts published in 2023:

Helke Mocke, Martin Pickford, Brigitte Senut and Dominique Gommery, 2023. A note on Plio-Pleistocene insect cocoons from Prospekterkop, Rietfontein, Northern Namibia. *Communications of the Geological Survey of Namibia*, 26, 66-76.

Helke Mocke, Martin Pickford, Brigitte Senut and Dominique Gommery, 2023. Hominoids from Berg Aukas, Middle Miocene, Namibia - Revision of dental measurements. *Communications of the Geological Survey of Namibia*, 26, 34-38.

Helke Mocke, Christian F. Kammerer, Roger M.H. Smith, Claudia A. Marsicano, 2023. The first record of late Permian tetrapods from Namibia. *Palaeontologia africana - A Festschrift In Honour Of Bruce Sidney Rubidge*, 56, 133-141.

Helke Mocke, Martin Pickford, Brigitte Senut and Dominique Gommery, 2023. Fossil Evidence of a Death Trap at Ozombindi, Northwestern Namibia. *29th Colloquium of African Geology*, 26-29 September 2023, Windhoek, Namibia, 18.

Cécile Mourer-Chauviré, Martin Pickford, Helke Mocke and Andreas Nduutepo, 2023. Early Miocene Lovebird from Namibia. *29th Colloquium of African Geology*, 26-29 September 2023, Windhoek, Namibia, 19.



PROJECTS & OUTREACH

African Scholars Program brings Iziko staff to Chicago

Ken Angielczyk, Claire Browning, Sibusiso Mtungata, Zaituna Skosan, Robyn Symons, Wendy Taylor, and Pia Viglietti

Over the last few years the founder of Puppet Planet and PalaeoLink (Wendy Taylor), Claire Browning (Curator of Karoo Palaeontology, Iziko SA Museum), Pia Viglietti (Research Scientist, Field Museum) and Ken Angielczyk (MacArthur Curator of Paleomammalogy, Field Museum) have collaborated closely to promote knowledge-sharing and research exchange opportunities between the Field Museum and Iziko South African Museum. Recently, this culminated in a successful proposal funded by the Bill Stanley Memorial Fund. These funds, awarded directly from the Field Museum's African Scholars Program, brought three Iziko South African museum professionals from the Karoo Palaeontology Division, Sibusiso Mtungata, Zaituna Skosan, and Robyn Symons, to the Field Museum of Natural History between May 25th and June 17th 2023.

During the visit, the Iziko team focused on improving their best practices and procedures for the curation and maintenance of fossil vertebrate collections. Several Field Museum professionals assisted the Iziko team, including Akiko Shinya (Chief Fossil Preparator), William Simpson (Fossil Vertebrates Collections Manager), Paul Mayer (Fossil Invertebrates Collections Manager) Adrienne Stroup (Collections

Assistant), Connie Van Beek (Fossil Preparator) and Jim Holstein (Geology Collections Manager).

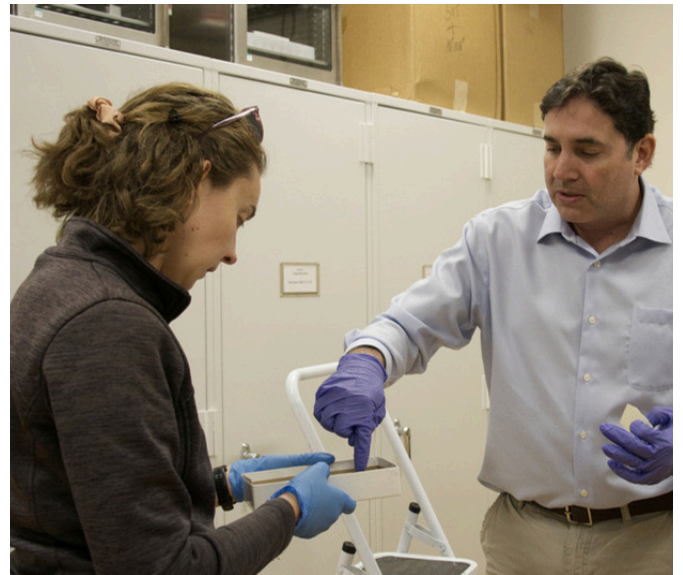
Akiko especially took the Iziko team under her wings, and during their time provided hands-on training in the casting and molding process and embedding and thin sectioning, and also shared information on fossil preparation, fossil lab equipment, and improving fossil preparation techniques. The Iziko team also took part in a photogrammetry project with summer interns in Evolving Planet (lead by Ken Angielczyk and Pia Viglietti), and spent a day at the University of Chicago in Paul Sereno's lab learning about sculpting reconstructions (hosted by Tyler Keillor). Weekends were also busy for the Iziko team, and one event included introducing the mammal forerunner *Lystrosaurus* and the End-Permian mass extinction event at the ESCONI (Earth Science Club of Northern Illinois) children's program. This event was hosted by the College of Dupage, and with the help of Brian Nugent (ESCONI) and Scott Galloway (Leader of the Children's Program) children were presented with *Lystrosaurus* 3D masks and a coloring sheet, and had the opportunity to speak directly with the Iziko team on their fieldwork and fossil curation experiences.



The Iziko team working with Akiko Shinya on fossil molding practices at the Field Museum of Natural History - Robyn Symons.



The Iziko team, Akiko Shinya (second from left), and Tyler Keillor (far right) in Paul Sereno's lab at the University of Chicago.



Right: Jim Holstein shows the Iziko team the Field Museum Meteorites Collection. Left: William Simpson shows the Iziko team the Field Museum's Fossil Mammal Collections.

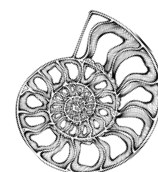
These interactions were captured digitally and will be used to develop two online short courses for the new Iziko South African Museum training portal called PalaeoLink. The portal is run through a collaboration between the University of Cape Town, Geological Sciences Department (Dr. Wendy L. Taylor), and the Iziko South African Museum's Karoo Palaeontology Division (Claire Browning, Curator of Karoo Palaeontology).

The broader goal of this exciting capacity-building initiative is to deepen the Field Museum's relationships with Iziko and other African museums by establishing a knowledge-sharing program focusing on the curation, decolonization, and maintenance of collections. The PalaeoLink portal will serve local communities and research technicians through sharing of digital data and knowledge between institutions. We believe museums can address the colonial legacies of their collections in a very positive way by taking part in capacity-building programs that help local communities and researchers in other countries share their own knowledge and regional heritage.

The PalaeoLink team would like to thank the African Scholars Program at the Field Museum, the Iziko Museums of South Africa, the University of Cape Town, PAST (Palaeontological Scientific Trust), and the DSI-NRF Centre for Excellence in the Palaeosciences (GENUS) for making this program possible.



The Iziko team at the ESCONI Children's Program event with Scott Galloway (left) and Elizabeth O'Brien (back row, second from right).



Indigenous Master Trackers Contribute To Cape South Coast Ichnology

Charles Helm, Clive Thompson & Jan De Vynck

“The origin of science”... that is how Louis Liebenberg described the art of tracking. We agree with this provocative claim. However, most of us in the ichnology world learn our trade relatively late in life, perhaps at university. Some of us may be lucky enough to have had a parent or mentor who inspired us and instilled the ethos of tracking (and thus science) in us from a younger age. But imagine: what if we learned those values and skills as part of our earliest life experiences, and then never stopped learning? What if this approach was inculcated in us at a time of brain plasticity, providing a lifelong ‘literacy’ advantage over latecomers? Then, perhaps, we would be really good scientists.

And until a few millennia ago, that is what many of our ancestors were. But since then, their numbers have been dwindling steadily. Today, there are but pockets of traditional hunter-gatherers/trackers remaining in the world, and the scientific expertise they bring to their craft may seem to be a vanishing corpus of knowledge.

Through the Cape south coast ichnology project, based out of the African Centre for Coastal Palaeoscience at Nelson Mandela University, more than 350 Pleistocene vertebrate tracksites have been identified since humble beginnings in 2008, and close on 40 peer-reviewed scientific publications have resulted. While we have done our best as ichnologists to describe what we have found, we are also aware of our limitations

and the gaps in our knowledge base and skill set. We wondered: how would Indigenous Master Trackers / hunter-gatherers view our work? Would their wisdom and expertise, honed through an unbroken train of knowledge transferred from generation to generation over at least tens of millennia, mesh with our modern scientific approach to yield unique insights? And could such work be mutually beneficial, so that they could generate some income through their scientific tracking skills for themselves and their vulnerable, marginalised communities?

From such questions was born a 2023 project which brought #oma Daqm and /uce N#amce, two Indigenous Ju’/hoansi San Master Trackers from the Nyae Nyae Conservancy in northeastern Namibia, to the Cape south coast. Together we spent an unforgettable five days tracking in stone. Certification as an Indigenous Master Tracker occurs through the accreditation program developed by CyberTracker, and involves peer recognition within the tracker community. Only a handful of indigenous trackers across the Kalahari are currently recognized as Master Trackers (the highest tracker qualification).

The Ju’/hoansi are among the last of the San of the greater Kalahari who retain the full suite of ancient hunter-gatherer skills. They speak their original click language; their lands are still largely wild, with free-roaming game; their bush communities still engage in



/uce N#amce and #oma Daqm confer on tracks identified in profile.
Reproduced with permission from Josef Steyn.

subsistence hunting with bow and poisoned arrow; a few still hunt by persistence running; they gather food from the veld and they still draw on their healing dances. They are exponents of the art of tracking, and their ability to follow and interpret game tracks is extraordinary.

There was a precedent for such an initiative: in the Tracking in Caves project Ju/'hoansi Indigenous Master Trackers assisted scientists in the interpretation of hominin tracksites in French caves. And more recently, Ju/'hoansi Indigenous Master Trackers assisted in the interpretation of prehistoric tracks in the rock art record in Namibia. However, we knew that the examination of well-preserved hominin tracks and rock art presented a rather simple challenge compared to that of our

(often poorly preserved) tracksites in aeolianites on the Cape coast.

In our favour was the notion that many of the Pleistocene tracks that we encounter on the coastline today were registered by species that are still extant, and by that token would be generally familiar to our tracker colleagues too. This is something that could not be said even when considering Pliocene or Miocene tracks and traces. As our mentor, the late Martin Lockley, commented: "problems of determining trackmaker affinity increase with the increasing age of the fossil footprints."

We also appreciated that tracking in the sand and bush of northeastern Namibia is different from tracking on Cape south coast



#oma Daqm and /uce N#amce beside a vertebrate tracksite they identified east of Still Bay.
Reproduced with permission from Richard Webb.

palaeosurfaces. For example, many of our tracks are preserved in hyporelief on ceilings and overhangs, or in profile in cliff exposures. Furthermore, many 'tools of the trade' that are second nature to contemporary trackers are not available to us, as our track-bearing surfaces on rock are typically small, and there is no opportunity to consider feeding and associated signs, or to pick up the spoor some distance away when the tracks are interrupted. Moreover, we don't know the time of day the tracks were registered or the role of dew, and our chances of actually tracking down our quarry are minimal. Clearly, it would be a steep learning curve for our new colleagues, and a crash course in palaeo-ichnological principles was required. It would include instruction in the tracks of extinct species which might be encountered, such as the long-horned buffalo and giant Cape zebra.

Once the initial practical instruction was over, we began by pointing out known tracksites of interest, without providing our own interpretations. With fresh eyes, the Indigenous Master Trackers would analyze and discuss between themselves, and then summarize what they had concluded, from possible trackmaker identification to interpretation of the hints of associated behaviour. At that point we would share our insights and our photogrammetry data where applicable, and generally we would reach a joint conclusion. Soon they began identifying freshly exposed tracksites without any assistance, and were providing persuasive interpretations for sites we had considered enigmatic.

In our newly acquired experience, amalgamating ancient traditional scientific knowledge and modern scientific

approaches leads to results and conclusions that are richer and more compelling by dint of the different but convergent perspectives now brought to bear. We have shown that perceived barriers are easily overcome. From our point of view, we are grateful that we could hone our ichnological skills under expert traditional guidance.

Some of the breakthroughs we enjoyed, courtesy of the novel contribution of our San collaborators, include: corroboration of our provisional interpretation of a brown hyena trackway, an evidence-based interpretation that a hitherto confounding trackway had probably been made by a pangolin (the first, as far as we are aware, in the global palaeoichnology record), identifying ostrich tracks which we had previously failed to discern (but were easy to see under guidance), and detecting the track signature of the scrub hare.

We also took the Indigenous Master Trackers to a known hominin tracksite (about 86,000 years old) on the ceiling of a tight coastal cave, and encouraged them to go in and enjoy the moment. Quite conceivably the trackmakers were their direct forebears. They entered barefoot, as is our respectful custom, spent a good while inside using our torches, and finally emerged visibly moved. 'Our hearts were pounding', they said. "We are going to go home and tell our families that there is a place like this where we can see our ancestors' footprints."

Most of these collaborative encounters will, in time, morph into scientific papers that will be submitted to academic journals. The submitted list of co-authors will include #oma Daqm and /uce N#amce. There are several ways in which scientific qualifications can be measured. We have our university degrees and our institutional affiliations. But another way lies in the ability to use the traditional experiential – to wit, scientific – method, taught from childhood, to support and feed one's family and community through tracking, hunting and gathering.

The visit had been intended as a test of concept. We now had proof of concept. At the end of five days together, we felt a sense of privilege at having been granted this remarkable ichnological opportunity. The five of us began to hatch plans – maybe a survey together of the entire Cape east coast? We agreed to follow through by trying to forge a unique partnership for mutual discovery and reward. Other experienced Master Trackers are waiting in the wings in distant Nyae Nyae.

Through this initiative, can we help to prevent these astonishing skills and wisdoms from fading away like tracks on a dune in the wind? Perhaps. And if we can, we as ichnologists will be immeasurably richer.



PALAEO-PALAEVER

“Pliocene” Calaveras Man (1866) predates “Pleistocene” Piltdown Man (1912)

Francis Thackeray

In 1866 a human skull was found by miners allegedly at great depth at Angel's Camp in Calaveras County in California. It was sent to William Jones, a medical doctor with an interest in natural history. He in turn forwarded it to Josiah Whitney, the State Geologist of California and Professor of Geology at Harvard. Whitney formally announced the discovery at a meeting of the California Academy of Sciences on July 16, 1866. He claimed that it represented a Pliocene hominin. This was only seven years after the publication of *The Origin of Species* in which Darwin had written “Light will be shone on the origin of man”.

The Calaveras Man was widely publicised and became the subject of poetry. For example here are extracts from Francis Bret Harte's (1898) poem, "To The Pliocene Skull":

*Speak, O man less recent!
Fragmentary Fossil!
Primal pioneer of Pliocene formation,
Hid in lowest drifts below the earliest stratum
Of volcanic tufa!
Speak, thou awful vestige of the earth's creation,
Solitary fragment of remains organic!
Tell the wondrous secret of thy past existence -
Speak! thou oldest primate!*

*Even as I gazed, a thrill of the maxilla,
And a lateral movement of the condyloid process,
With post-Pliocene sounds of healthy mastication,
Ground the teeth together.
And from that imperfect dental exhibition,
Stained with express juices of the weed nicotian,
Came these hollow accents, blent with softer
murmurs
Of expectoration.*

The skull speaks:

*“My name is Bowers, and my crust was busted
Falling down a shaft in Calaveras County,
But I'd take it kindly if you'd send the pieces
Home to old Missouri!”.*

Source: <https://www.poemhunter.com/poem/to-the-pliocene-skull/>



An anonymous poet with inside information
suggested that the skull had first been found in 1853:

*He came from old Missouri, and his name is Charcoal Jim;
He sunk the shaft near Angel's Camp, that Whitney tumbled in:
And I'll tell in simple language, what I know about the bones,
That Whitney got in Murphy's Camp, from Dr. William Jones.
The skull was found in '53, and claimed by Dr. Boon,
Then peg-leg Edwards got it, and kept it in his room.
Then John E. Scribner, for a joke, sent it to Dr. Jones,
Who had a private cabinet of gold and silver stones.
Scribner said the skull was found in Charcoal Jimmy's hole,
And Charcoal Jimmy swore it was, by his eternal soul;
But Jimmy knows it's all a lie, and Scribner knows it too;
But after Whitney got the skull, the truth would hardly do.
John E. Scribner is the man who rigged the fossil trick,
And Whitney is the other man who fell in it so slick;
Exit skull, and Whitney too, I hoped he'd stay away,
He made a jackass of himself, when on the State Survey.*



Source: C. Grant Loomis (1946) in California
Folklore Quarterly 15 (3), p. 307.



The Calaveras hoax was exposed sometime after 1900 in a posthumous confession by a shopkeeper, John Scribner, through his sister and a pastor. The forgery was a precursor to “Piltdown Man” from Sussex, described as “The Earliest Englishman” (Eoanthropus) and announced in London in 1912 by Smith Woodward of the British Museum (Natural History). The Piltdown human skull fragments and an orangutan jaw (both stained brown) were planted with Pleistocene fossils. All of this material may have been sourced by Edgar Willett (Thackeray, 2023 a&b), working in cahoots with Teilhard de Chardin, Martin Hinton and Charles Dawson, as expressed in my limerick:

Piltdown Clown **Francis Thackeray (FT)**

There was an odd fellow from Piltdown
Who had a big skull in a pit, brown.
The Dawn Man in grit
Asked me "Who really dunnit ?"
"Who made me an ape and a clown ?".

Answer, according to FT: Edgar Willett, he
dunnit, with Teilhard, Hinton and Dawson.

References

- Thackeray (2023a). Three suspects behind the Piltdown Man fossil hoax. PalNews 23 (2): 55-57.
<https://www.palaeosa.org/palblog/three-suspects-behind-the-piltdown-man-fossil-hoax>
- Thackeray, J.F. (2023b). Addendum to Thackeray (2023) on the Piltdown Case: Closer to closure ? Palaeontological Society of Southern Africa, PalBlog.
<https://www.palaeosa.org/palblog/addendum-to-thackeray-2023>