

PREHISTORIC HUMAN TRACKS

INTERNATIONAL CONFERENCE

MAY 11-13, 2017
NEANDERTHAL MUSEUM, METTMANN
INSTITUTE OF PREHISTORIC ARCHAEOLOGY, COLOGNE
GERMANY

TRACKING
IN CAVES

CONFERENCE

(DELEGATES)



THE IDEA



After long periods of prehistoric research in which the importance of the archaeological as well as the natural context of rock art has been constantly underestimated, research has now begun to take this context into focus for documentation, analysis, interpretation and understanding. Human footprints are most prominent – or rather impressive – among the long-time under-researched features of the context in caves with rock art. In order to compensate for this neglect an innovative research program has been established several years ago that focuses on the merging of indigenous knowledge and western archaeological science for the benefit of both sides.

This program started with reading of human tracks in caves with rock art by San hunters from Namibia and developed since then in various directions featuring the fusion of different knowledge systems.

This project, labelled Tracking in Caves, started in 2013 with the purpose to better understand the late Pleistocene human footprints that can be found in some of the caves with rock art in southern France. For this research assistance and expertise was sought among the Ju/'hoansi San of the Namibian Kalahari. Three professional, indigenous trackers were invited to Europe and contributed substantially to the research in the caves.

When starting research into human tracks as an archaeological source, we discovered that there are many other projects around the globe where tracks play a prominent role. But at the same time it turned out that despite thorough work done on tracks there is no structured academic exchange between researchers and the various further fields of knowledge that can contribute to the analysis and understanding of tracks.

Therefore, we initiated the international conference on prehistoric human tracks for 2017. This conference aims at enabling broad exchange of researchers working on tracks and also including experts from other, non-academic fields of knowledge and practice. An important contribution to the conference, therefore, came from the invited indigenous trackers from around the globe.



PROGRAM

DAY 1 - EXPERIENCE-BASED TRACKING

DAY 2 & 3 - PREHISTORIC HUMAN TRACKS

DAY 4 - COMMUNITY REPORT

OFF-STAGE

AT THE END

EXPERIENCE-BASED TRACKING

DAY 1 - FIRESIDE TALK & PRACTICAL TRACKING



PRACTICAL TRACKING



PRACTICAL TRACKING



LUNCH & SOCIAL BREAK



THE MEDIA



MEET THE TRACKERS

(AUSTRALIA, NAMIBIA, CANADA)



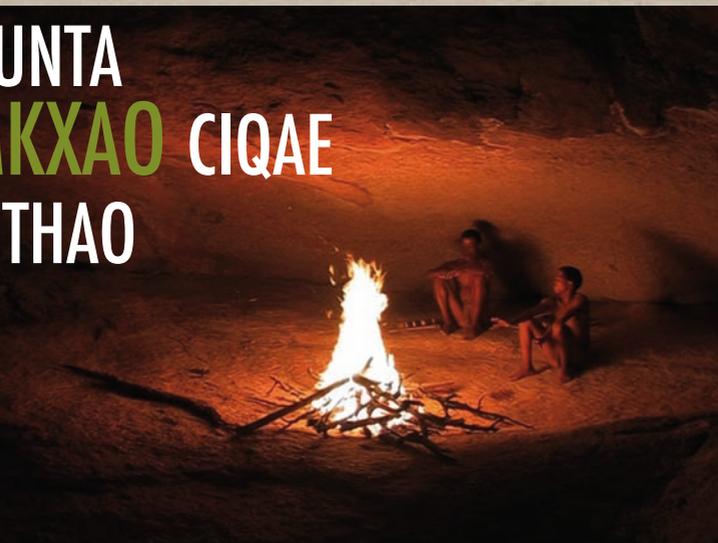


LEAH UMBAGAI (AUSTRALIA)





UI KXUNTA
TSAMKXAO CIQAE
THUI THAO
(NAMIBIA)





GEORGE AKLAH (CANADA)

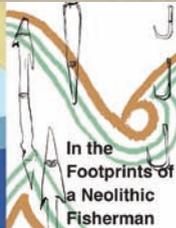


PREHISTORIC HUMAN TRACKS

DAY 2 & 3 - PRESENTATIONS

The Footprints of a Prehistoric Coastal Community.

Life in the Holocene
Salt-marshes that once existed at Follybryant, Solton Coast, Lancashire, England



In the Footprints of a Neolithic Fisherman

HOMININ FOOTPRINTS

from the Late Pleistocene site of Rozel (Manche, France)

Inventory and Study of Human and Non-human Tracks of Cussac Cave

(Le Buisson-de-Cadoul, Dordogne, France)

THE ART OF TRACKING AND SCIENTIFIC REASONING

Experience-based Reading and first Morphometric Analysis of Pleistocene Human Footprints in Pech-Merle (France)



Human Tracks in Tuc d'Audoubert (France) and their Exemplary Experience-based Reading



Détermination, à partir des empreintes de pas et des vestiges d'éclairages, d'une exploration spéléologique préhistorique dans la grotte d'Aldane à Cesseras (Hérault, France)



Prehistoric Human Tracks in Ojo Guareña Caves (Burgos, Spain)



Interpretation of Footprints from Site S Confirms



Human-like Bipedal Biomechanics in Laetoli Hominins

DIGITAL PERSPECTIVES ON PLEISTOCENE PEDAL PATTERNS AND PROTECTION



FOOTPRINTS AND HUMAN EVOLUTION

HOMEOSTASIS IN FOOT FUNCTION?



"REPETITION WITHOUT REBELLION..."



A Comparison of the Laetoli D.L. Site, Northern Malawi and Bataek Hunter Footprints using Thermographic Statistical Footprint Mapping

Inter-rater Reliability and Polar Bear Tracking Techniques of Inuit Hunters



Inspired by Eileen Neallart

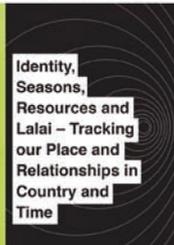
Australian Footprints in an Ice Age



Trackers' Consensual Talk: Precise Data for Archaeology



TRACKING IN CAVES



Identity, Seasons, Resources and Lalai - Tracking our Place and Relationships in Country and Time



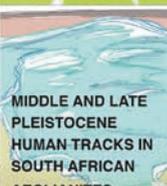
Tracks in the Forest: Conversations with Batek



MONTE HERMOSO I SITE (BUENOS AIRES PROVINCE, ARGENTINA)



Stepping into Britain: Early Human Footprints at Happisburgh, United Kingdom



MIDDLE AND LATE PLEISTOCENE HUMAN TRACKS IN SOUTH AFRICAN AEOLIANITES: Langebaan Lagoon and Nahoon



New Hominin Footprints Frozen in the Pliocene Ashes of Laetoli, Tanzania

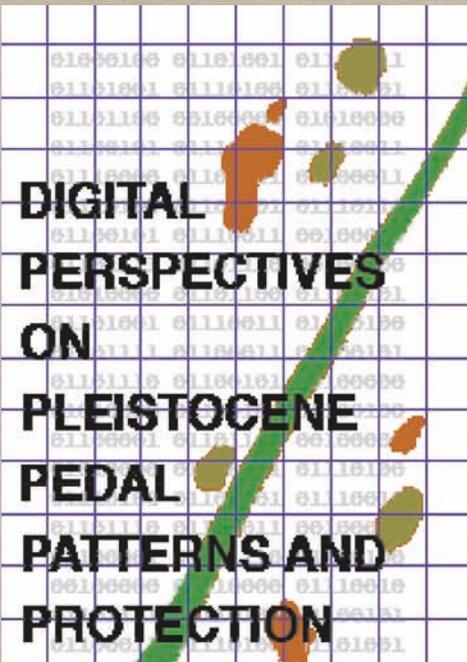


Ancient Human Tracks found Beneath an Active Beach on the Central Pacific Coast of Canada

ERIK TRINKAUS (USA)



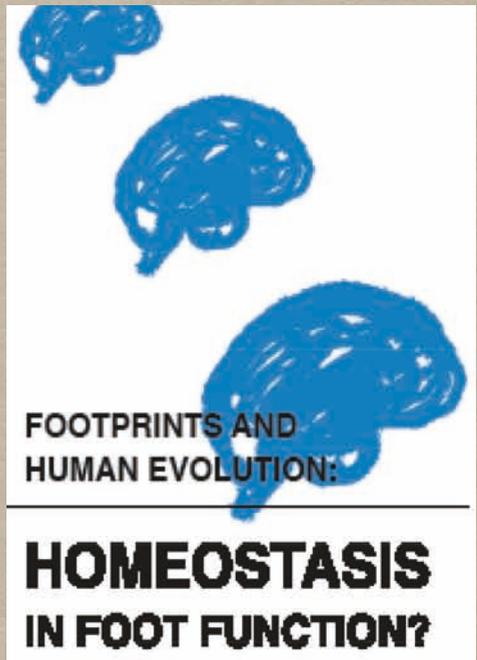
Erik Trinkaus uses computer technology in order to compare footprints that have been found in different caves in several parts of the world. He wants to find out if 3-5 million years ago humans were walking around barefoot all around the world. Moreover he would like to know if the shape of human feet changed over time.



MATTHEW BENNETT (GREAT BRITAIN)

Human tracks have the potential to give us important information about the walking habits of our ancestors. The number of known track sites is small and one has to work with small numbers of tracks that are often found in very difficult settings. This situation makes it difficult to compare tracks and therefore to analyse and understand them. However, over the last 10 years the authors have collected digital footprint data from a range of different locations. They have developed computer programmes to analyse all parts of the footprints (www.digTrace.co.uk).

Presentation prepared together with Sally C. Reynolds, Marcin Budka.

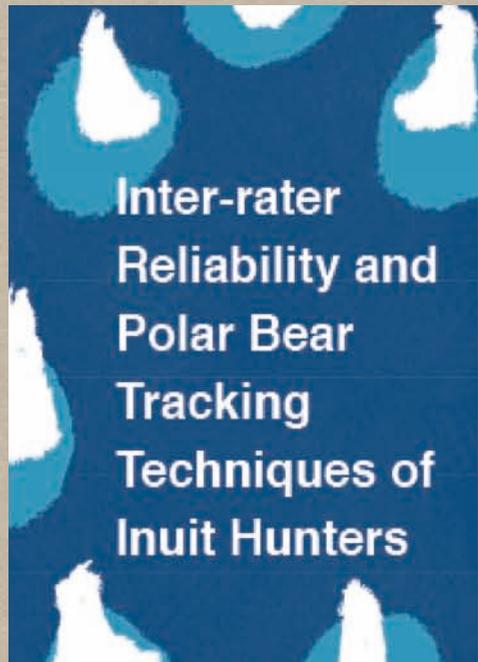


PAMELA WONG GEORGE AKLAH (CANADA)



Pamela Wong talked to nine Inuit hunters (name of trackers in Canada) on 78 tracks on the arctic sea-ice in Nunavut (Canada). Pamela Wong and her team found out that Inuit can identify polar bear tracks by sex, age, body size, and health. She also interviewed 53 additional hunters and elders for methods of identifying polar bear characteristics from tracks. Based on interviews with all hunters and elders from the six communities, Inuit across Nunavut share methods of identifying bear characteristics.

Together this research suggests Inuit could provide reliable, frequent information on polar bear population characteristics to inform monitoring programs.

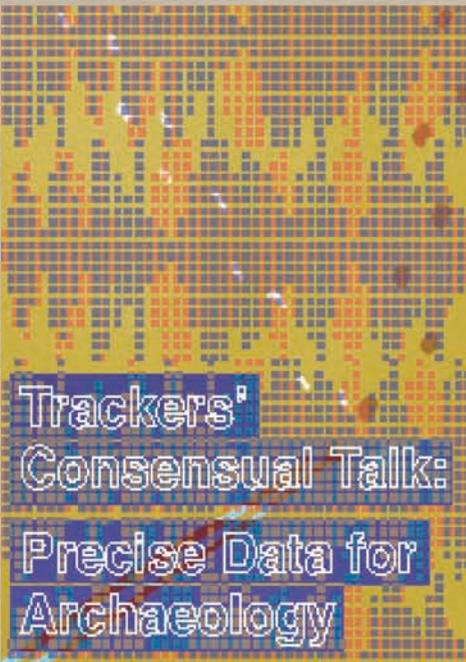




MEGAN BIESELE (USA)

Indigenous trackers routinely consult with each other while hunting and sharing evidence until consensus is reached. Three Ju|'hoan San trackers have been part of the project „Tracking in Caves“ that started in 2013. Megan Biesele supported both the San trackers and the European scientists in reading human tracks in four caves with rock art.

The trackers conversations are transcribed and translated. This is the work of the Ju|'hoan Transcription Group in Namibia, a longterm project using computer transcription programs. Their conversations shall help to develop a new tool for archaeologists to better understand human footprints.

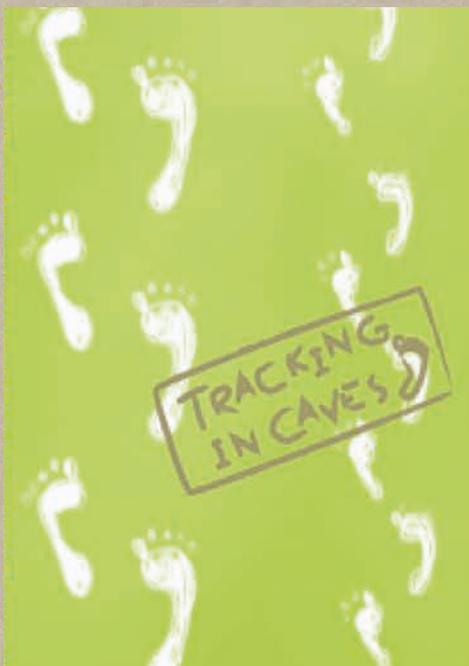


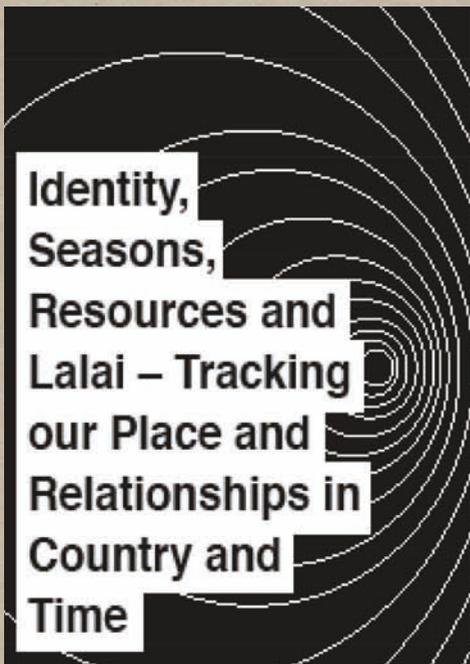
TILMAN LENSSEN-ERZ (GERMANY)



The project Tracking in Caves brought together experts from the science of archaeology and the people's science of tracking in order to better understand the tracks people left 17,000 years ago in some caves in France. After having become acquainted with one another during a visit in Namibia 2013, all travelled to France where they ventured into the deep caves. Sometimes this meant to go more than 1 km underground. All this was filmed by a TV crew and with the TV documentary the whole team travelled through Namibia in 2015 to show it to 12 San communities.

Presentation together with Tsamkxao Ciqae, Ui Kxunta, Andreas Pastoors, Thui Thao.





Identity,
Seasons,
Resources and
Lalai – Tracking
our Place and
Relationships in
Country and
Time

LEAH UMBAGAI
KIM DOOHAN
MARTIN PORR
(AUSTRALIA, GERMANY)

For Wandjina Woongudd Traditional Owners of the northwest Kimberley region of Australia, 'tracks in caves' are more than just indications of human action. Rather, caves and the tracks (as images and/or stone arrangements) within or pointing to them, are integral parts of one's country and thus identity. These 'tracks' are, for the Wandjina Woongudd Traditional Owners, one of the ways to know the resources, creation and continuity of country including seeing the presence of one's ancestors, in image or bones, and the ancestral Creator Beings of Lalai. Tracks

in caves, in their various forms, are important in terms of understanding people, people in and of the country; the resources of the country; the identity and social relationships of the country and those who belong to that country.



TUCK-PO LYE (MALAYSIA)



When asked how they find animals in the forest, Batek men talk about signs: the smell of urine, the presence of dropped fruit, movement in the tree-tops. How do they look for these signs? By scanning with their eyes, not by looking down, they say. But what about ground-dwellers? They look at the tracks—shapes, sizes, directions — which they correlate with memories and knowledge of recent animal movements. For Batek women, tracking seems to happen differently, given the different profiles of animals and plants that they habitually target. What all have in common is participation in the general pool of knowledge about environmental signs and events, which is shared by talking about lived experiences.

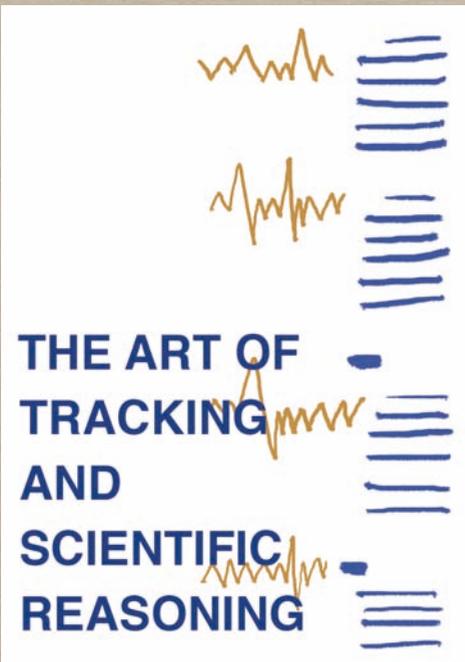
Presentation prepared together with Jerung Belimbing and Jusoh Toman.





LOUIS LIEBENBERG (SOUTH AFRICA)

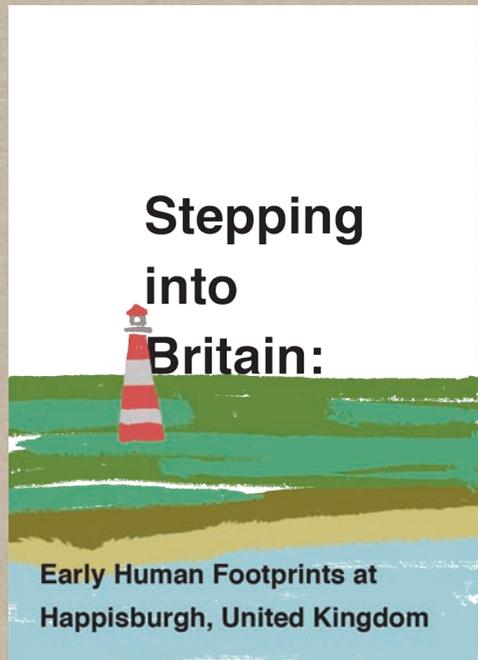
Trackers talk a lot about their tracking experiences among their communities. It is a process of correcting each other and agreeing with each other. Their interpretations of tracks also sometimes enables them to make predictions. Sometimes they are able to predict new facts about animal behaviour, a significant feature of modern science. Scientific reasoning may therefore be an innate ability of the human mind. The CyberTracker Tracker Certification now makes it possible to formalise the expertise of trackers. The CyberTracker program makes it possible for people who cannot read or write to record complex data. This demonstrates that trackers can do science and that indigenous communities can make contributions to science.



Presentation prepared together with Louis Liebenberg (South Africa), the late !Nam!kabe Molote, the late !Nate Brahman, Horekhwe (Karoaha) Langwane, Quashe (/Uase) Xhukwe, the late Wilson Masia, the late Karel (Vet Piet) Kleinman, Karel Benadie, James Minye, the late /Ui /Ukxa, the late Dabe Dahm, the late /Kun //Xari, /Ui G/aq'o, #Oma Daqm, /Ui /Kunta.

NICK ASHTON (GREAT BRITAIN)

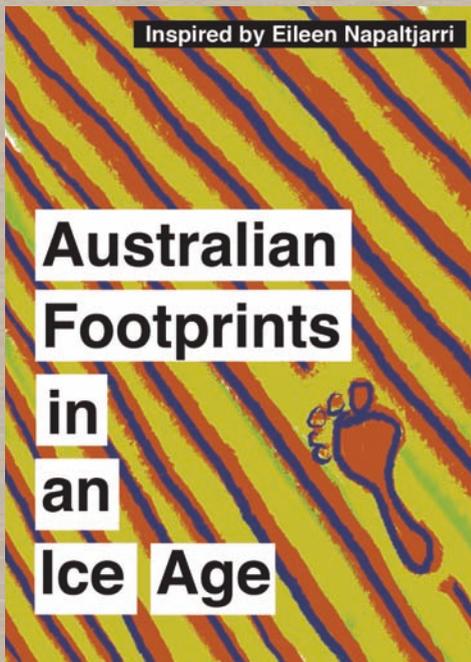
In 2013 Nick Ashton and his team found human footprints in a coastal area of Britian (Europe) that might be 800,000 to 1 million years old. The footprints represent several individuals, including adults and children. Although in this area there is no bodies found of that time the footprints show that there might have lived human beeing about 1 million years ago.





STEVE WEBB (AUSTRALIA)

Rarely in archaeology do we see the flesh and blood of ancient people living their lives. In Australia, a unique archaeological site discovered in 2006 allowed us to do that as people went about their daily lives during the last glacial maximum. The tracks show men, women and children, walking and running. While hundreds of footprints can be found, details of their behaviour and other marks they left behind were difficult or impossible to interpret. Steve Webb and his team required interpretative skills they did not have. So they needed some help of people who did - who could see what they could not see. Pintubi people from Central Australia were asked to help and they were the last people contacted by White Australia in the early 1960's. They had the vital skills of tracking. Those skills had kept them alive in the Tanami and Gibson deserts and now they were applying them to reach their ancient Dreamtime ancestors.



MARCO CHERIN (ITALY)

Ancient footprints are very useful tools for scientists. They can help to identify their makers and to find out more about the bodies of humans that lived long time ago. Marco Cherin and his team try to find out more about the body size of humans that lived in Tanzania some several million years ago. They estimate that the two adult individuals that produced the footprints were about 1.65 meters tall.

Presentation prepared together with Angelo Barili, Giovanni Boschian, Elgidius B. Ichumbaki, Dawid A. Iurino, Giorgio Manzi, Fidelis T. Masao, So a Menconero, Jacopo Moggi-Cecchi.



**New Hominin
Footprints
Frozen in the
Pliocene Ashes
of Laetoli,
Tanzania**

DAVID RAICHLEN (USA)



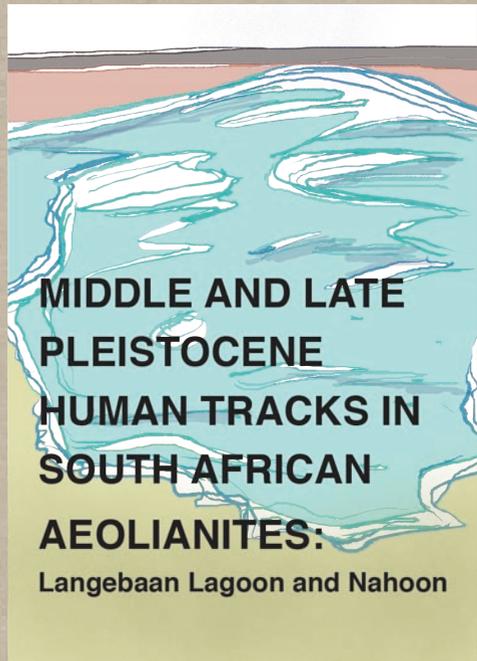
The idea in science is that human beings developed over time from apes to humans. One of the big questions in archaeology is when, why and how human beings started to walk straight. David Raichlen and his team have found some footprints in Tanzania that might be 3.6 million years old. By analysing the tracks they want to find out whether these human-like beings were already walking straight (like humans today) or if they were still bent over and using their hands for walking.

Presentation prepared together with Adam D. Gordon.



GRAHAM AVERY (SOUTH AFRICA)

Graham Avery talks about the conservation and handling with ancient footprints. He describes the stories of footprints from Langebaan Lagoon (Western Cape Province), that were found in 1995 and of casts of human, antelope and bird tracks that were found in 1964 at Nahoon, East London (Eastern Cape Province). He discusses issues related to conservation and public access to these two findings.



MIDDLE AND LATE PLEISTOCENE HUMAN TRACKS IN SOUTH AFRICAN AEOLIANITES:

Langebaan Lagoon and Nahoon



CRISTINA BAYÓN (ARGENTINA)

For several years Cristina Bayón has been working with human footprints that have been found in the Atlantic coast near the city Bahia Blanca (Argentina). She and her team have found tracks on the edge of a lagoon near a camp where people performed different activities 9000 years ago. They found out that small family groups went to the coast and established camps in the nearby dunes. On the coast they hunted sea lions and fished large black croakers, in that context women and children wandered along the banks of the lagoon without rushing, while in another sector a group of men crossed towards the dunes.

Presentation prepared together with Gustavo Politis.



DUNCIN MCLAREN (CANADA)

Following the last major glaciation, sea level was situated 2 to 3m lower than today on Calvert Island, on the central Pacific coast of Canada. In an attempt to find archeological deposits dating this time period, we commenced a program of subsurface testing. Beneath one beach, a total of 25 human tracks were found. Preserved plant microfossil from the footprint impressions indicate that they were left between 13,300 and 13,100 years ago. The different sizes of the tracks indicated a minimum of three people with different foot sizes. In some instances, toe impression could be discerned. During this time period, Calvert Island would only have been accessible by watercraft. The finding of this research provided an additional piece of evidence demonstrating that the Pacific coast of the Americas was inhabited in the late Pleistocene period by the people who were maritime adapted.

Presentation prepared together with Daryl Fedje and Angela Dyck.



**Ancient Human
Tracks found
Beneath an
Active Beach
on the Central
Pacific Coast of
Canada**



ALISON BURNS (GREAT BRITAIN)

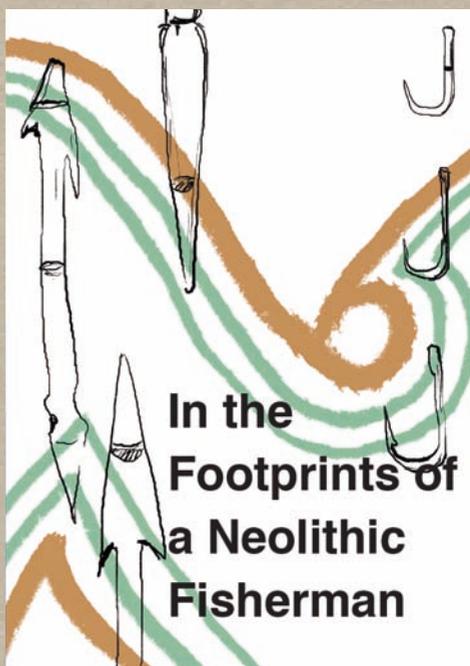
The human and animal footprints found in the sedimentary outcrops along the beach of North West England are unique because of their number, their continuity through the different layers of sediment forming each outcrop, and extent of outcrops along a 4 km stretch of beach. Their present location on the foreshore has enabled them to be monitored by the author over a period of years. The activities indicated by a wealth of footprints and the specific behaviour exhibited by some individuals can be interpreted from their traces as adults and children who moved around in this dynamic landscape. In her presentations she offers some interpretations regarding the nature of coastline life thousands of years ago.

The Footprints of a Prehistoric Coastal Community:

Life in the Holocene
Salt-marshes that once Existed
at Formby Point, Sefton Coast,
Lancashire, England

TERJE STAFSETH (DENMARK)

In Denmark, several well preserved systems of standing fishing weirs, with dating to between 3,200 and 2,800 years ago, has been uncovered as part of this project. The weirs were located in sheltered coastal waters with an associated sand barrier. This landscape was repeatedly subjected to inwash from stormy seas, which occasionally broke through the sandy barrier. The excavation of the weirs unexpectedly revealed several footprints left by fishermen themselves during one of these storms. Footprints dating this far back, have never before been recorded in Denmark, and in the preliminary stages of the excavations, it was not something anyone expected to encounter. The main task was to record the weirs and the stratigraphy, and it was almost by chance that two small imprints were noticed in a profile documenting a sand layer, separating two stages of weirs.

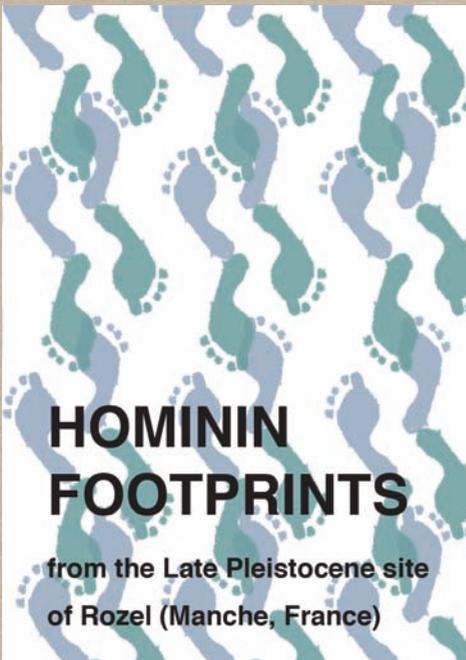




JÉRÉMY DUVEAU (FRANCE)

Hominin footprints, and particularly those associated with Neandertals, are very scarce in the fossil record. They give information on the anatomy, the composition or the gait of a group which are not accessible with the other fossil remains. The site of Rozel delivered a set of occupation layers, corresponding to areas devoted to butchery, located into a sanddune complex. They were associated to the Middle Palaeolithic and recently dated around 80,000 years BP. These different layers delivered a lot of lithic (Levallois and laminar flaking systems, fireplaces...) and faunal (deer, horses, aurochs...) remains. On five of these layers, over 150 hominin footprints have been discovered in sandy mud since 2012. The search is in progress and the ichnological corpus is enriched every year. The main work axes concern the composition and the biology of the Neandertal groups. Using a wide material of comparison, the first analyses have shown that several individuals of different ages were present. These studies also enable further research on the biomechanics of Neandertal walking.

Presentation prepared together with Dominique Cliquet, Patrick Auguste, Gilles Berillon, Gilles Laisné, Norbert Mercier, Noémie Sévêque, Christine Verna, Brigitte Van-Vliet-Lanoë.



LYSIANNA

LEDOUX

(FRANCE)

This work focuses on prehistoric human and animal tracks found in cave context and more specifically Cussac Cave (Dordogne, France). This very well-preserved cave is characterized by parietal monumental engravings associated with human remains deposited in bear hibernation nests. From an ichnological point of view it is a cave with a large number of human and animal (mostly bear) activity traces as bear hibernation nests, color marks on the walls, torch marks, and of course, several kind of tracks... These evidence are found in the entire site and are currently being inventoried and studied. Due to the various sedimentary events in the cave, the reading and interpretation of the tracks is challenging. One of our aims is therefore to understand the formation and preservation of tracks inside the cave and discuss the characteristics, behavior and activities of people who frequented the cave.

Presentation prepared together with Nathalie Fourment, Gilles Berillon, Jacques Jaubert.



Inventory and Study of Human and Non-human Tracks of Cussac Cave

(Le Buisson-de-Cadouin,
Dordogne, France)



KARIN KULHANEK (GERMANY)

Experience-based Reading and first Morphometric Analysis of Pleistocene Human Footprints in Pech-Merle (France)



In Pech-Merle the known footprints and their interpretation in literature varied, depending on the researcher, his specific categories and historical background. Within the Tracking in Caves Project these footprints have been carefully examined by three Ju/'hoan San trackers from Namibia. Based on their narrative reading it was possible to increase the number of recognized imprints to 17 and point out five individuals. As a further personalization, the trackers were also able to draw inferences from imprints about body height, weight and gender. With the help of a structured light scanner it is now possible to capture the minute details that contain the information for this way of reading. Characteristic features such as the different size and form of an individual path, can be picked out to test whether a statistical significance proves different track-makers.

Presentation prepared together with Andreas Pastoors, Tilman Lenssen-Erz, Tsamkxao Ci-qaе, Ui Kxunta, Thui Thao.

ANDREAS PASTOORS (GERMANY)

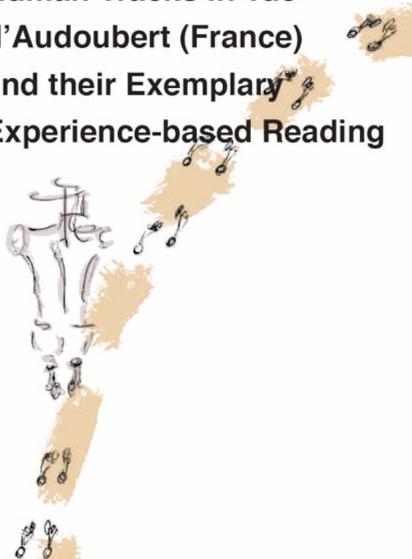
More than 100 years ago the first explorers discovered human tracks in the upper gallery in Tuc d'Audoubert, their attentiveness and foresight, have kept the remains untouched since they were discovered in 1912. These 400 tracks, and diverse traces of human activities from the prehistoric times have made Tuc d'Audoubert a key site for archaeological context of rock art. The cave is located in south-western France near the little village of Montesquiou-Avantès and belongs to a large karstic cave system of the Volp.

Between 1992 and 2007 an interdisciplinary team conducted research to compile a complete inventory and study of all human traces in the cave. In this project footprints were spared from deeper analysis due to the lack of an adequate methodological approach without risk of destruction. During the Tracking in Caves Project three San trackers visited the cave in 2013, where the 'Salle des Talons' was chosen as it is well documented and has been interpreted by several researchers. The San trackers made new discoveries of single complete foot and knee prints and brought different seemingly isolated features together to a reliable whole.

Presentation prepared together with Robert Bégouën, Tilman Lenssen-Erz, Tsamkxao Ciqae, Ui Kxunta, Thui Thao.



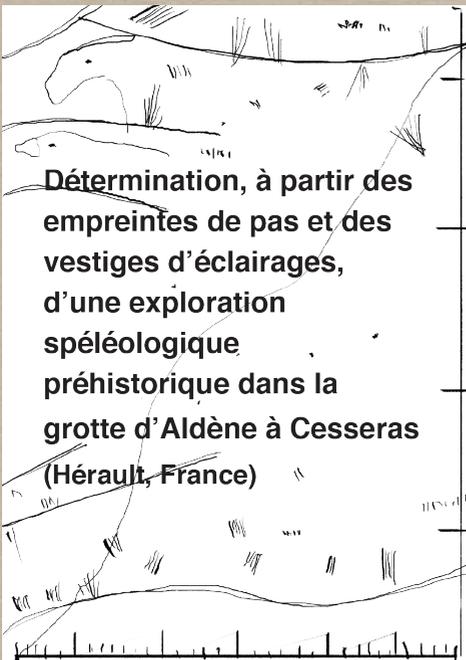
Human Tracks in Tuc d'Audoubert (France) and their Exemplary Experience-based Reading





PHILIPPE GALANT (FRANCE)

Aldène cave is a system of 9 km of extent, on four hydrogeological levels. Within the two fossil floors, or more than half of the system, many archaeological items have been discovered. They represent on a continuous way more than 350,000 years of human history. In the deep floor of this cave, we find the 'Footprints gallery', discovered in 1948 by the Abbot Joseph Cathala. This place contains a lot of human traces, with footprints and lighting vestige. A recent study of these elements, with a geomorphologic approach, concerned registration and systematic analysis of the lighting marks, as well as an initial determination of their footprints. This work confirmed the contemporaneousness chronological and functional of these archaeological clues. Lighting use could be determined precisely with the traces on the walls and the remains discovered on the ground, in connection with the footprints. These data, placed in a spatial approach to the cave network, clarify the prehistoric way and allow an interpretation of the behavior of visitors. These elements restore an image of a family on a speleological exploration, attributed to the Mesolithic period.



Presentation prepared together with Paul Ambert (†) and Albert Colomer.

ANA ISABEL ORTEGA (SPAIN)

The archaeological heritage of the Ojo Guareña complex shows an impressive record of past human culture and behaviour. The caves' soaring use is evidenced by the over 80 sites exposing living areas, rock art, human footprints, burials, and a variety of archaeological objects encompassing the Middle Palaeolithic to medieval times. The human tracks' site of "Galerías de las Huellas", inside Palomera Cave, is one of the most singular yet most vulnerable of the sites. The exceptional record consists of hundreds of soft clay-imprinted barefoot human traces decorating two floor passages of the southern slope network of galleries of San Bernabé's valley, ~1,250 m away from the closest cave entrance, Palomera cave. More than 1,000 footprints have been identified using 3D laser scan and GIS, depicting at least 16 tracks belonging to 8 individuals in Galería I. The "back and forth" bi-directionality of the tracks may be interpreted as cave exploration as prehistoric men walked in and out of the passages. Several charcoal marks on the walls of the passages have been dated to 15,600 ± 230 years BP.

Presentation prepared together with Francisco Ruiz, Miguel Ángel Martín, Alfonso Benito-Calvo, Emiliano Bruner, Theodoros Karampaglidis, Isidoro Campaña.



Prehistoric Human Tracks in Ojo Guareña Caves (Burgos, Spain)



DISCUSSIONS



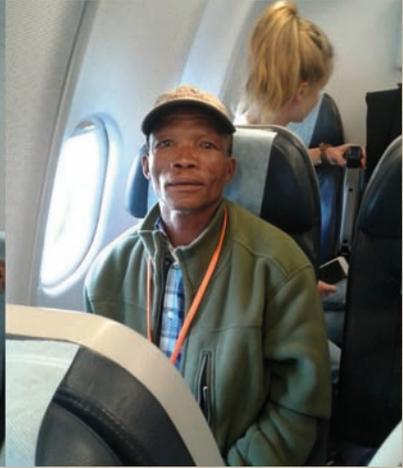
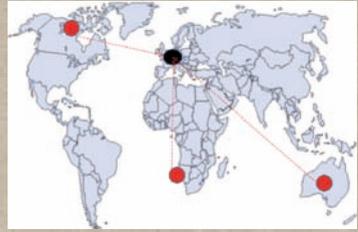
COMMUNITY REPORT

DAY 4 - WORKSHOP



OFF-STAGE

THE TRACKERS' JOURNEY TO GERMANY



GERMANY

THE EXPERIENCE









AT THE END

“You have to read the country”

“Tracking is a way of life”

“People are born as trackers”

The trackers' knowledge is highly appreciated here in Germany. A lot of people want to learn and understand the trackers. They helped us to get a better understanding of tracking.



Bettina Ludwig
Maria Johannes
Tilman Lenssen-Erz
Andreas Pastoors

THANK YOU FOR SHARING YOUR KNOWLEDGE WITH US



VolkswagenStiftung



CULTURES
AND SOCIETIES
IN TRANSITION

GO-AIDE
STIFTUNG

STIFTUNG
NEANDERTHAL
MUSEUM



University
of Cologne

ASSOCIATION
LOUIS BÉGOUEN



Heinrich
Barth
Institut





United Nations
Educational, Scientific and
Cultural Organization

in cooperation with the
German Commission for UNESCO



ERIC LE BRUN