Session 10

Layers of landscape

*Anthropological and ethnoarchaeological perspectives*

(Session organizers: M. Wunderlich, H. Piezonka)
Index

Red for the dead: ethnobotanical perspective on Cornelian cherries and their meaning in Mesolithic funerals at Vlasac, SE Europe (D. Filipovic; Poster-Presentation) ........................................................................................................... 3

Experiencing landscape – ethnoarchaeological perspectives for ‘landscapes’ and ‘taskscapes’ (S. Reinhold, keynote lecture) ................................................................................................................................. 4

Landscapes of reindeer herding: land-use dynamics and human-reindeer relations in northern Sápmi c. 700–1800 AD (O. Seitsonen) ...................................................................................................................... 5

Sámi place-names and prehistoric hunter-gatherer landscape knowledge in Arctic Europe. Linking ethnographic and archaeological data (M. Skandfer) ........................................................................................................ 6

The Taz Selkup: Ethnoarchaeological insights on migration, ethnicity and material culture of hunter-fisher-reindeer herders in the Siberian taiga (H. Piezonka) ...................................................................................... 7

From hunting and fishing to herding. Strategies of adaptation among forest-steppe populations in Western Siberia in the 2nd millennium BC (S. Reinhold) ........................................................................................ 9

Molecular footprints of animal husbandry in two ecological zones in Eastern Mongolia: implications for archaeological research (N. Eguez) ................................................................................................. 10

Abandoned cities in the steppe. Ethnoarchaeological research at early modern religious and military centres in nomadic Mongolia (J. Ethier) ........................................................................................................ 11

Beyond counting sheep: and interdisciplinary review of the Medieval British pastoral landscape (R. Guildford) ...................................................................................................................................................... 13

Catching the Past - Fishing techniques from the Lower Danube Region in the 5th mill. BC and today (M. Savu) ........................................................................................................................................................ 14

Fortifications and topography – ethnographical examples for the usage of landscape as an element of defensive systems (A. Reymann) .................................................................................................. 16

Landscapes of communal frames, economic inequality and social signaling in Nagaland, North-East India (M. Wunderlich) ...................................................................................................................... 17

Scales of Documentation – Remote Sensing and Structure from Motion (SFM) Documentation of Megalithic Monuments in Eastern India (K. Rassmann) .................................................................................. 18

Ridge and Furrow Cultivation – New research approaches with new perceptions (Th. Langewitz) .... 19

The Skulls of the Isle of the Dead Musira (Tanzania). A historical-anthropological research on funerary customs, burial rites and family associations (B. Teßmann) ............................................................................ 21
Red for the dead: ethnobotanical perspective on Cornelian cherries and their meaning in Mesolithic funerals at Vlasac, SE Europe

Poster-Presentation

Dragana Filipovic Institute for Balkan Studies, Belgrade, Serbia
Co-authors: Milica Fotirić Akšić, Faculty of Agriculture, University of Belgrade, Serbia; Dragana Dabić Zagorac, Innovation Center, Faculty of Chemistry Ltd, University of Belgrade, Serbia; Maja Natić, Faculty of Chemistry, University of Belgrade, Serbia.

Cornelian cherry (Cornus mas L.) is a small deciduous tree or a bush that grows spontaneously in and near oak forests in central and southern Europe and south-western Asia, and can live up to 200 years. It is known mostly for its edible fruit – orange or red drupes the size of olives and with sharp astringent taste. It is, however, also known for its tough and durable wood, which was highly valued in the Greek and Roman world and is described in ancient texts as an essential material from which weaponry and tools were made. Cornelian cherries are nowadays consumed fresh, but are more commonly turned into jams, juices, alcoholic drinks and similar products. In traditional medicine, the bark and leaves are also used. It does not surprise then that, in some communities, the tree has a special place in life and plays an important role in celebrations and rituals. The history of use of Cornelian cherry fruit in Europe goes back more than eight millennia, at least to the time of earliest farming settlements in the Balkans. Cornelian cherries were perhaps collected as food, but myriad other purposes are possible, as suggested by their role nowadays and in recent history. In the Mesolithic cremation graves discovered at the site of Vlasac in eastern Serbia, in the Danube Gorges region, charred fruit stones of Cornelian cherry were encountered, in one case in significant number. An idea has been put forward, that Cornelian cherries may have represented an element of the funerary ritual and that their red colour may have given them a symbolic role, linked with life/death. We explore this assumption by experimentally testing the potential of Cornelian cherry fruit and stone to become preserved in cremation fires. We also look into ethno-botanical records to try and grasp the role that this plant could have played in the Mesolithic burial ritual and beyond.
Experiencing landscape – ethnoarchaeological perspectives for 'landscapes' and 'taskscapes'

Sabine Reinhold, Eurasia-Dept. DAI, Berlin

Keynote lecture

How did prehistoric people approach the natural environment in which they lived? Today, we would call it 'landscape' and imply therein a culturally-shaped scenery which has, up until a certain point, accumulated layers of social meaning over centuries and millennia. A land deliberately or unconsciously shaped by the everyday practice of its inhabitants with artificial additions such as buildings, villages or monuments, with an infrastructure created by humans and with scars manifested as intrusions into the vegetation and soil or erosion in areas following intensive usage. Perhaps they would have called it a 'taskscape', as this environment was the land from which they drew their livelihood. It intertwined them in a wide-ranging spectrum of activities related to economic, social, political or ritual responsibilities. Or perhaps they would instead have called it a 'lifescape', the land with which they are entangled and which they occupy both physically as well as cosmologically.

Landscapes – per the definition of the British social anthropologist Tim Ingold, namely, "an array of related features" – are present in the structure of our archaeological sources and their embeddedness in geographical settings. To analyse it, we can utilise mapping, correlations to the environmental background and chronological differentiation of our sources. But when it comes to 'taskscapes' – or, "an array of related activities" – we have to reconstruct them using the incomplete remains of these once-performed activities and their relation to space. Experimental and ethno-archaeological approaches have proven to be eye-opening in many ways for the understanding of how specific activities could have been performed and what remains might result therefrom. A recent ethno-archaeological study by Peter Jordan on the landscape use and conception of Siberian hunter-gatherers demonstrated that the knowledge of native populations is an additional, indispensable source for the understanding how the activities were structured. Hunter-gatherers as well as pastoralists' strategies to inhabit land are very different from our own everyday experience, settled in a (post-)agricultural surrounding. They require different viewpoints and different layers of information – they need anthropological and ethno-archaeological perspectives in order to understand them as former 'lifescapes'.
Landscapes of reindeer herding: land-use dynamics and human-reindeer relations in northern Sápmi c. 700–1800 AD

Oula Seitsonen (University of Oulu)

Domestication of reindeer commenced amongst the Sámi of northern Fennoscandia from 8th century AD, and was accompanied by major cultural changes. This presentation focuses on the diachronic changes in the land-use, inter- and intra-site settlement patterns and human-environmental relations of Fjell Sámi in northern Sápmi, their homeland stretching across the northern shore of Europe. Ongoing research takes a host of GIS analyses as its starting point, focusing especially on two pivotal periods: 1) the initial domestication of reindeer within a hunter-fisher-gatherer society (c. 700–1050 AD); and 2) the shift to nomadic large-scale reindeer husbandry (c1500–1600/1800 AD). The initial shift from hunting-gathering and fishing based livelihoods to small-scale reindeer herding during the Middle Iron Age changed people’s everyday lifeworlds, environmental perception and human-reindeer relations. This is mirrored in the archaeologically for example by changing campsite organization and structures, most importantly by the introduction of so-called rectangular hearths in the archaeological record. Both the intra- and inter site spatiality of the hearth sites as well as their placing in the landscape differs from the earlier hunter-gatherer sites. Also, the shift to large-scale nomadic pastoralism from Middle Ages is reflected in the archaeological record by similar changes in landuse and camp-site organisation. Nomadic pastoralist sites appear at different locations and with differing features than the previous rectangular hearth sites, which appear to have been related to the small-scale use of domesticated reindeer. Nomadic pastoralists followed their herds through the landscape year around, "...always coming and going, like migratory birds", as Sámi elder Gáijohaš has famously stated. The pastoralist landscapes should not be approached as purely anthropogenic constructs. Instead, the agency of animals and things should be acknowledged in a pluralistic perspective. The changes in the herding strategies as well as land-use mirror also important diachronic changes in the human-reindeer relations and encounters.
Sámi place-names and prehistoric hunter-gatherer landscape knowledge in Arctic Europe. Linking ethnographic and archaeological data

Marianne Skandfer (Tromsø University Museum, UiT - The Arctic University of Norway)

Sámi place names and landscape terminology relates to reindeer herding and a spectrum of hunting, fishing and gathering practices. Key elements inherent in the Arctic Norway landscape are critical points along travelling or migration routes, distinct landscape shapes to navigate by and places where different resources can be found. Place names together with narratives refer directly or indirectly to how and which animals move through a particular landscape at a particular time of year, weather conditions, or seasonal-specific good places to dwell. They help people navigate through an unpredictable and highly varied environment. Large rock carving sites established around or shortly after 5000 BC in northernmost Europe were placed at transition points between landscape types, typically at coast—inland transitions. It has been suggested that the rock surfaces, into which figures are carved, are representations of real landscapes, with rivers, lakes, sea and mountains. In that case, a careful selection of key animals and key topographical elements can be suggested to be represented in the rock carvings. The paper explores similarities and differences in how landscape is perceived, as expressed in Sámi place-names and landscape terminology, and Stone Age material. It is argued that ethnographic information can have broad significance for understanding resource management and decision-making strategies in prehistoric northern hunter-gatherer communities, in their meetings with landscapes and animals.
The Taz Selkup: Ethnoarchaeological insights on migration, ethnicity and material culture of hunter-fisher-reindeer herders in the Siberian taiga

Henny Piezonka (Institut für Ur- und Frühgeschichte, Christian-Albrechts-Universitaet Kiel)
Co-authors: Vladimir Adaev (Tyumen, Russia), Olga Poshekhonova (Tyumen, Russia)

Ethnoarchaeological approaches can greatly contribute to our understanding and interpretation of the archaeological record left by Stone Age hunter-fisher societies of Northern Eurasia by integrating analogies, questions of archaeological visibility, and indigenous knowledge. The northern parts of the Western Siberian taiga have until now remained poorly studied in archaeological and ethnoarchaeological terms. This is mainly due to the difficult accessibility of this remote region for field research. Since 2013, various Early Modern sites (settlements and burial grounds) as well as contemporary settlement structures associated with the Selkup in the taiga between Ob’ and Yenisei have been newly discovered and investigated. In the course of the 17th and 18th centuries, Selkup groups have migrated north into this region from Tomsk province, and in the new territories at the the River Taz have partly preserved their nomadic ways as foragers up until today. In the course of the relocation, the material and spiritual culture was transformed under the influence of the neighboring ethnic groups. The Selkup newcomers met local communities of Ents, an ethnic group related to the Nenets, and in a long series of small-scale fighting and also larger battles the Selkup gradually evicted them from the territory. This history is not only vividly remembered among the Taz Selkup communities even today but has also been inscribed into the landscape by toponyms and stories. A new feature adopted in the north is small scale reindeer husbandry, supplementing economic approaches and in turn affecting seasonal cycles, mobility within the landscape and associated settlement systems and life ways. Thus, the sub-recent, historically documented Selkup migration is of immense potential both from an anthropological and archaeological point of view because it allows us to trace the causes and mechanisms of adaptation to the new environments and its effects on material and immaterial culture, language, ethnic self-perception and inter-group relations against the background data from the southern original homelands. Ethnoarchaeological fieldwork of a Russian-German team which started in 2016 on the upper Taz is focusing on temporary settlements of the early modern period up until present times, shedding light on changing patterns of landscape use and site location, seasonal cycles, subsistence economy, dwelling types, customs and rituals. By combining various strands of evidence (ar-
archaeological and ethnoarchaeological survey and excavation, ethnohistory, cultural anthropol-
yogy and oral history) we can trace the complex processes connected to the Selkup establish-
ment in this region and their appropriation of the landscape. We can also test the material
footprint of these processes as well as its restrictions, indicating just how much caution is
needed when there is only the archaeological record left for the reconstruction of past condi-
tions, relations and realities.
From hunting and fishing to herding. Strategies of adaptation among forest-steppe populations in Western Siberia in the 2nd millennium BC

Sabine Reinhold (Eurasia-Department, German Archaeological Institute)

Co-author: Zhanna Marchenko (Institute of Archaeology and Ethnography Siberian Branch of the Russian Academy of Sciences (IAET SB RAS);

One of the most important adaptations of societies at the northern frontier of the Eurasian steppe belt was the transition from a hunter-gatherer to a pastoral economy during the Bronze Age. There are several hypotheses regarding the timeframe and the trajectories of this development: but if, when, why, and how this transition happened is still largely unknown. Archaeological approaches have so far argued from the presence of domesticated animals in the find assemblages from the 3rd millennium BC, but the adaptation of a food-producing way of economy based on herded animals addresses a much wider spectrum of ideological and cognitive topics than purely economic ones. How did human practice change with the challenge of an entirely new spectrum of activities? How was the shift from hunting to herding mastered in terms of contrastive world-views? Modern societies with respective economic practices reveal strong differences in the perception of animals and humans as part of contrarily integrated cosmological systems. Initiated by Tim Ingold’s article ‘From trust to domination’ 2002, differences in perception but likewise in everyday practice is discussed. The ethnography of Siberia offers a broad spectrum of comparative studies in the use and conceptualisation of landscape, exploration areas, as well as habitation and burial places. We will draw from this data and the debate on changing cognitive systems during the transition from foraging to producing economies and try to evaluate data from Western Siberian Bronze Age cemeteries in the Baraba steppe where such an economic shift is discussed, most likely associated with an advance of new populations into the forest-steppe- and forest-zone. Did the everyday practice of the local and new communities indeed changed dramatically? How was cultural and economic interaction operated? Were there consequences in activity pattern, in the shaping of foraging or pastoral landscapes? And, do we find indications for changes in the perception of animal-human interrelations between foraging and pastoral communities, as e.g. postulated by Ingold in the prehistoric data from Siberia?
Molecular footprints of animal husbandry in two ecological zones in Eastern Mongolia: implications for archaeological research

Natalia Eguez (Christian-Albrechts-Universität Kiel), PhD student

Co-author: Ms. Cheryl Makarewicz - Christian-Albrechts-Universität Kiel

The seasonal usage and relative intensity of occupation of pastoralist camps, are an important temporal variable in mobile societies, but difficult to directly detect in the archaeological record. Molecular proxies concealed in soil lipids hold great potential for palaeoenvironmental reconstruction when applied to organic-rich archaeological pastoral contexts. The analysis of plant n-alkanes extracted from livestock dung provides insights into animal diet composition and, by taking advantage of environmental seasonality that impacts floral growth, fodder management. To this end, we conducted compound-specific carbon stable isotope analysis of plant n-alkanes on caprine dung deposits deposited in pastoral nomadic winter campsites located in two contrasting phytogeographic zones, the forest-steppe and desert-steppe in Eastern Mongolia. Here, we conduct carbon isotope analysis ($\delta^{13}C$) of plant n-alkanes of dung deposits associated with pastoral nomadic winter campsites in Mongolia in order to explore the origin of plant organic matter ingested by livestock and evaluate potential biomolecular signatures associated with the intensity and duration of dung deposition. Preliminary results suggest that intensity of stalling, and the composition of plants ingested by livestock are identifiable in dung samples recovered from corrals with this method. In particular, $\delta^{13}C$ values in plant n-alkanes in dung deposits are unusually low compared to carbon isotope values of n-alkanes derived from soil control samples recovered from landscapes with minimal, if any, anthropic activity. These results highlight the importance of ethnoarchaeological studies in identifying biomarkers at the molecular scale that convey information on pastoralist animal exploitation practices.
Abandoned cities in the steppe. Ethnoarchaeological research at early modern religious and military centres in nomadic Mongolia

Jonathan Ethier (Christian-Albrechts-Universität zu Kiel / Ur- und Frühgeschichte), PhD student

Co-authors: Birte Ahrens, Martin Oczypka, Henny Piezonka, Christian Ressel, and Sampildovdov Chuluun

Towns and cities have been an integral part of the Mongolian nomadic society for more than a millennium, and abandoned urban sites from various periods dot the land, inscribing memories of lost empires and long-gone alliances into the cultural landscape. The relation between sedentary urban and mobile herder lifeways has constituted a key cultural, economic and political factor in one of the major pastoralist formations in Eurasia. In the 21st century, it is gaining increasing importance in the negotiation of the conception as well as the future of Mongol national identity. Instances of urbanization in Mongolia have a long-standing and specific history, starting with the mighty capitals of the Medieval steppe kingdoms, continuing with colonial institutions in the Early Modern period and the establishment of administrative and industrial centres during the socialist period, and culminating today with an unprecedented rural exodus into the modern capital of Ulaanbaatar and a few other major cities. The era in which most modern cities on Mongolian soil are rooted is the period of Manchu rule during the Qing dynasty in the 17th to early 20th centuries. It is this period which saw the establishment of Buddhist monasteries as centres of trade, education and permanent settlement, and the installation of colonial military posts. Subsequent political developments connected to the end of the Manchu rule and the rise of socialist policies in the early 20th century led to the abandonment or, in the case of monastic sites, to forced destruction of many of these urban focal points, leaving the places inscribed in the topography as ruins and evermore diminishing structures. Nevertheless, local oral traditions, place names and conceptions of regional enculturated landscapes have partly preserved the memory of those lost cities and in cases may refer to them in the narratives on local historical roots and the backward projection of identities into a pre-industrial past. Since 2017, a Mongolian-German pilot project combines archaeological, geo-information, historical and ethnographic methods to trace the entanglement of social, political and cosmological dimensions of abandoned Manchu period urban
settlements. In the research area located in central Mongolia, selected monastic (e.g. Old Shankh monastery) and military settlements (in the Khangai Mountains) are investigated to gain insights into two contrasting models of Manchu period urbanism and their changing perception over time. Surface surveys, high-resolution aerial photography and digital elevation models conducted in 2018 enable the detailed assessment layout and architecture of the sites themselves, of previously unknown structures in the vicinity and of the surrounding natural landscape. In this paper, we will present the first promising results of this ongoing investigation and outline our expectation for future research which is planned to include small-scale excavations, the documentation of local knowledge and narratives as well as archive work on written sources. We will show the value and potential of archaeological and ethnoarchaeological studies of Mongolia under the Qing regime and indicate how this research project will contribute in reopening this influential past at the heart of the Mongolian identity and life-ways.
Beyond counting sheep: and interdisciplinary review of the Medieval British pastoral landscape

Roxanne Guildford (University of Edinburgh), PhD student

Zooarchaeological research analyses faunal remains to explore the relationship between animal husbandry and cultural and environmental change in the past. To further this research agenda, quantitative methods in archaeology must evolve toward better interpretations of large, aggregated data sets that can illuminate patterns across human landscapes. The application of computational archaeology to zooarchaeology opens scope for the study of both regional trends and inter-site variability for increasingly complex data sets integrated with environmental, geographic, or temporal variables. The advent of open-source software and open data in archaeological research further allow for dissemination of large bodies of information, interdisciplinary meta-analysis, and accessible reproduction of results. This project is part of an ongoing Ph.D. thesis that examines the intensification of sheep husbandry in relation to wool production during the Medieval period in Britain, using computational and zooarchaeological methods to refine previous interpretations of economic changes in farming. Datasets from published assemblages are presented in case studies that move beyond descriptive approaches and visualization based on derived metrics, towards interpretations that explore statistical variation in faunal assemblages associated with reorganization of the pastoral landscape. Advancement in zooarchaeological methodology that considers synthesizing multi-disciplinary data and technology will assist in future collaboration within research teams, create new perspectives on site variability, and enhance our current understanding of past socio-ecological relationships.
Catching the Past - Fishing techniques from the Lower Danube Region in the 5th mill. BC and today

Mihaela Savu (Graduate School Human Development in Landscapes), PhD student

Co-author: Michael Müller, doctoral student, Freie Universität, Berlin

The Danube Delta represents the largest European wetland, as well as one of its most diverse deltas, characterized by a rich biotope, which houses 30 types of ecosystems. Another significant feature is the particular population dynamics, represented by at least 13 different ethnic groups. Given the abundance of water bodies and various fauna species, among traditional activities, fishing constitutes one of the most long-lasting ones, alongside sheep and cattle breeding, beekeeping or the harvesting of medicinal plants. To this day, only few places are suitable for practising agriculture which are barely defended from periodical floodings. With all this in mind, we conducted a short-term ethnographic survey in two fishing villages located in the Danube Delta and in one town from the Lower Danube region in Bulgaria. Sfântu Gheorghe, the first village surveyed, is placed at the mouth of the Danube into the Black Sea. There, in the 18th century AD, the Cossacks or “haholi”, who are of ethnic Ukrainian origin, settled while fleeing from the Russians. The second village, Milla 23, is located on one of the navigation channels of the Danube. Here settled a community of Russian Lipovans (Starovers), which fled from Russia in the mid 17th century. While from the 15th century the Cossacks were already seen as a group practising hunting, fishing, beekeeping, etc., the Lipovans’ circumstances of settling imposed on them a similar trajectory, determining them to direct their occupation mainly towards fishing. These groups did not only bring their traditional clothes, architectural styles or celebrations with them, but also particular fishing techniques and instruments. This way, the Lipovans rapidly became famous for building narrow black fishing boats, or “lotcas”, for fast navigation among reed. In 1916, Grigore Antipa, a Romanian biologist, collected and illustrated fishing utensils used for capturing different species of fish in Romania. Most of the techniques described by him in his book are only focused on the targeted species and the fishing medium, and less on the cultural aspects. Hence, the third location selected for surveying was chosen for comparison grounds. Through the collected information, we try to understand the practice of fishing from prehistoric times, considering the few known categories of possible instruments used at the time, the landscapes dynamics and fauna availabili-
lity, the fish specimens identified in the zooarchaeological record, as well as the poor preservation of organic material, and furthermore, the lack of navigation instruments or vegetal fibres. Although the modern communities studied by us have certainly not much to do with those from a few millennia back, we wanted to observe which techniques are used to target certain fish species in the Danube nowadays and to see if any of these techniques are comparable to the ones we reconstructed for the 6th and 5th millennia BC. We were also interested in examining how much, if at all, was transmitted in matters of tools and methods from one ethnic group to the next and also what impact the industrialization during Communism and after had on the communities, especially regarding the practice of fishing.
Fortifications and topography – ethnographical examples for the usage of landscape as an element of defensive systems

Andy Reymann (Goethe-University Frankfurt; LOEWE-Project "Prehistoric Conflict research.")

In the past decade, the study of prehistoric forms of warfare has reached a new climax. Overcoming the old way of interpreting prehistory as a “pacified past”, new research has been done on weapon technology, human remains with signs of violence, battle fields, iconography showing early warriors, and also on fortified places, which could have been places of greater conflicts. But many times, archaeologists in Europe were focusing especially on those remains of prehistoric fortifications, which were fitting into an eurocentristic model of being “defendable”, meaning those kinds of walls, ramparts and ditches, which can be dated into Bronze and Iron Age – the times, it is said, when societies became more complex and therefore “invented” real warfare. Other types of fortifications were most often ignored. Not only, because they are hard to trace in the archaeological record, but also because the corresponding societies were not considered to be capable of conducting real and elaborated forms of warfare. But recent archaeological, ethnographical and ethno-archaeological investigations show quite the opposite – warfare was conducted long before societies evolved to states and fortifications were erected on a usual and very effective base even among non-sedentary and highly mobile groups. The projected talk will focus especially on some often neglected and ignored types of fortifications, like the usage of a defensive landscape for settlements, the inclusion of plants, hedges and fences into defensive considerations and several other defensive element, erected defend a group in the case of an suspected upcoming conflict. Ethnographical sources and case studies from different parts of the world will be shown to give an impression about those quite wide variability of defensive features, which tell us, that it doesn’t need a “complex society”, to build complex defensive systems.
Landscapes of communal frames, economic inequality and social signaling in Nagaland, North-East India

Maria Wunderlich (Institute of Pre- and Protohistoric Archaeology, Kiel University)
Co-Author: Ditamülu Vasa (Nagaland University)

Despite being only marginally known in European archaeology, North-East India offers a rich environment of diverse case studies, which can be classified both as archaeological, as well as ethnoarchaeological and offers insights into the production of social landscapes. Within the naturally and socially variable landscape of North-East India, Nagaland stands out as an example of recent megalith building activities. The erection of standing stones and megalithic monuments stopped around 60 years ago but left impressive markers in the hilly landscape of Nagaland.

Megalith building in the southern part of Nagaland can be characterized as a framework in which partly contradicting actions of social reproduction were performed. Embedded in the construction of megalithic monuments is a series of feasting activities that can involve high investments of personal property. Therefore economic inequality and competitive behavior of different actors are involved in strategies to cope with the investments required for megalith building. Those circumstances are met by and partly fostered communal strategies, cooperation and solidarity among individuals and groups.

During the course of ethnoarchaeological fieldwork in the southern part of Nagaland in 2016, it was possible to document the complex and meaningful spheres of habitation, interaction and economic activities. Within these spheres, or layers of landscape, megalithic monuments can be seen as an important conjunctive element, bridging the gap between the communal frame of habitation and the economic activity zones. This organization of landscape integrates and connects the economic zones, as foundation of economic inequalities, into a social frame. Therefore, Nagaland offers a rich example of the meaningful entanglements of spheres of social reproduction and conditions within the landscape of daily life.
Scales of Documentation – Remote Sensing and Structure from Motion (SFM) Documentation of Megalithic Monuments in Eastern India

Knut Rassmann (DAI)
Co-authors: Johannes Kalmbach, Tiatoshi Jamir

The wealth of megalithic monuments in Eastern India is widely known and presented in a great number of publications. The long research tradition, however, focused on cultural aspects like feasting and social relations and much less on the monuments themselves. Consequently, a systematic recording of the monuments is still a desideratum. Results of the first systematic fieldwork in southern Nagaland were published in a study by M. Wunderlich in 2018. The study is based on the recording of size via GPS coordinates of several hundreds of monuments in the periphery of selected villages. Additionally, photographs were taken of each monument. In some cases groups of monuments were documented by SFM models generated from these pictures by conventional cameras. These SFM models delivered valuable results regarding the size of objects, their preservation, and microtopography, however, for the recording of larger groups of standing stones the application of conventional cameras is insufficient.

In order to optimize the documentation workflow, a drone was introduced in a second field campaign in 2018. In addition to the Nagaland specimen, exceptional monument groups in Manipur and Megalaya were recorded. The combination of drone and conventional camera photography enabled us to document the monuments on different scales, i.e. from single monuments to groups of monuments and finally within the context of the adjacent villages. The SFM software together with the GPS coordinates of the photos give us the precise location and measurements of the monuments. The combination of SFM and high resolution satellite images facilitates embedding the data into the surrounding landscape on a broader scale and is further helpful for the correction of the coordinates.

The fieldwork in 2018 was used to introduce the SFM software and the application of drones to our colleagues at the Kohima University. Preliminary results confirm the high potential of drone based SFM models for the documentation of megalithic monuments. A systematic use of this workflow is tailor made for a systematic recording of the megalithic landscapes in Eastern India.
In human history, landscape transformation through agricultural activities is tremendous all over the world. An example of man-made landscape modifications are ridges and furrows widely distributed in Northern and Western Europe. These agricultural remains are characterized by ridges up to 1 m high and up to 17 m wide and lengths often more than 400 m. It is commonly assumed that ridge and furrow cultivation occurred through the use of sod-turning ploughs in medieval times. Soil was accumulated towards the center by moving circular during single-sided ploughing which led to a gradually development of ridges and furrows. However, there are critical voices suggesting to reconsider the i) development; ii) benefit; iii) cultivation technique and iv) age of ridge and furrows, at least at some locations. Our interdisciplinary project, funded by the German Research Foundation (DFG), aims to clarify the mentioned points in the Altmark region and the foothills of the Harz Mountains in Northern and Central Germany, where wide forest areas are still covered by ridge and furrows. Beside the evaluation of LiDAR data and historical written sources, field descriptions of ridge and furrows were performed and soil samples were taken for subsequent laboratory soil analysis. In addition to standard soil analyses, state-of-the-art methods including stable isotope and molecular markers such as δ13C, δ15N, black carbon, Δ5-sterols and bile acids will be conducted. Additionally, we used various dating methods such as OSL, radiocarbon dating and diagnostic artifacts (e.g. ceramics). OSL as well as radiocarbon dating revealed that at least some ridge and furrows might be created much earlier than commonly known – if an earlier soil cultivation independent from ridge and furrow can be excluded. Furthermore, some ridge and furrow soil profiles show a well-preserved fossil topsoil (fAh) in +/- 40-50 cm soil depth. It can therefore be assumed, that additional other techniques than ploughing might be used for ridge and furrow formation. Our first laboratory investigations showed that nutrient stocks (P, N) of ridge and furrows differ within the same but also between the two study regions. Especially the differences within the same region with comparable soil texture and vegetation cover, might indicate different manuring practices. We will clarify this question by using the mentioned molecular markers in order to identify ancient input materials such as animal and human
excrements. The first results of our study strongly suggest that ancient ridge and furrows are highly diverse and need to be individually considered depending from their time of origin, (historical) natural landscape conditions but also regarding the cultural background and available resources at the time of formation.
The Skulls of the Isle of the Dead Musira (Tanzania). A historical-anthropological research on funerary customs, burial rites and family associations

Barbara Teßmann\textsuperscript{1,2} und Marius Kowalak\textsuperscript{1}

\textsuperscript{1}Museum für Vor- und Frühgeschichte Berlin;
\textsuperscript{2}Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte

In 2011, the museum for pre- and protohistory Berlin (MVF) took over several anthropological collections from the Charité, including the so-called ‘S-collection’ of Felix von Luschan. Together with the Rudolf Virchow Skull Collection, the MVF’s collection comprises some 11,000 skulls and several hundred skeletons, making it one of the largest skull collections in the world. By taking over these collections, the MVF has set itself a difficult task, as some of the collections are related to the colonial history of the German Empire. The interdisciplinary project on the recontextualisation of human remains from Africa with a colonial acquisition background is a pilot project investigating the provenance of 1196 skulls from the former German East African collections of Felix von Luschans, Rudolf Virchows and other parts of the collection. With the help of anthropological research methods and historical source research in cooperation with scholars from the societies of origin, the mutual interdependencies of the acquisition circumstances are to be clarified.

Rising from Lake Victoria in northwestern Tanzania, the island of Musira shapes the surrounding landscape of the city of Bukoba. Today known as a fishing and former prison island, it served in pre-colonial times as a burial place for parts of the local population, primarily high-ranking male Haya. On the basis of the historical research and the anthropological research results, the change of use of the island and the living conditions of the indigenous population will be examined.