

2ND SUDAN STUDIES

Postgraduate Conference

5 MAY 2018

SCHEDULE OF TALKS





McDonald Institute for
Archaeological Research



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Sudan Studies Postgraduate Conference Programme

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Please note that the conference schedule may change

8:30 **REGISTRATION**

9:00 **OPENING REMARKS**

SESSION ONE

CHAIR: **Kate Spence** (University of Cambridge)

9:10 **KEYNOTE LECTURE: Christian Knoblauch** (University of Vienna): *From the Colonisation of Uronarti to the Pots of Abydos: Lessons from Nubia for Understanding “Egyptian” Material Culture*

CHAIR **Shadia Taha** (Wolfson College, Cambridge)

9:50 Loretta Kilroe (University of Oxford): *Pilgrim Flasks: Chronological and Cultural Transformations in Nubia from the New Kingdom to the Napatan Period*

10:15 **Elena D’Itria** (University of Naples “L’Orientale”): *Understanding the Kerma amulets: the ladder and baboons amulet-beads*

10:40 **Rennan Lemos** (University of Cambridge) *Colonial assemblages in Nubian cemeteries.*

11:15 **COFFEE & POSTERS**

SESSION TWO

CHAIR: **Rennan Lemos** (University of Cambridge)

11:45 **Juliet Spedding** (University of Liverpool): *Indian Glass in Ancient Nubia*

12:10 **Uroš Matić** (Institut für Ägyptologie und Koptologie, Westfälische Wilhelms-Universität Münster): *Cosmetic accessories in “diaspora” communities of New Kingdom Nubia*

12:35 **Kate Fulcher** (British Museum): *Implications of pigments identified from Sudanese archaeological sites*

13:00 **Siobhan Shinn** (University of Oxford): *Nubian Glyptic from A-Group Contexts in Lower Nubia*

13:25–14:30 LUNCH

SESSION THREE

CHAIR: Kimberley Watt (University of Cambridge)

14:30 **KEYNOTE LECTURE: Jay Stock, Marielle Brown and Jacobus J. Saers** (University of Cambridge): *Bioarchaeological perspectives on long-term cultural and behavioural change in prehistoric Sudan.*

15:10 **Hiba Babiker** (Max Planck Institute from the Science of Human History): *The genetic structure of populations from Sudan and South Sudan: Recent survey and future outlook.*

15:35 **Francesco Rega** (University of Naples, "L'Orientale"): *Grindstones from graves: a new possible funerary costume in the Gash Delta (Eastern Sudan)?*

16:00 **Samantha Tipper** (Durham University): *Island verses mainland: A comparative study of spinal pathology in ancient Nubia.*

16:25 **COFFEE & POSTERS**

SESSION FOUR

CHAIR: Hratch Papazian (University of Cambridge)

17:00 **KEYNOTE LECTURE: Neal Spencer** (British Museum): *'Nuancing the (pharaonic) Empire: insights from Amara West'*

17:40 **Marta Kaczanowicz** (University of Poznań): *Nubians in Thebes Revisited*

18:05 **Julien Cooper** (University of Oxford): *The Atbai Wars: The first sustained conflict between Egypt and the nomads of the Eastern Desert*

18:20 **Ahmed Hamid Nassr** (University of El Neelain, Sudan): *MSA Archaeology in Sudan, definition and development from the eastern desert of lower Atbara River*

18:45 **DISCUSSION: Kate Spence** (University of Cambridge)

18:55 **CLOSING REMARKS**

POSTERS

1. Jördis Vieth, (Ludwig-Maximilians-University, Munich): *Settlement patterns in New Kingdom Nubia – The Egyptian temple towns.*
2. Eleonora Minucci, (University of Naples, “L’Orientale”): *Paleopathological data analysis of the human skeletal remains from the Gash Group Cemetery at Mahal Teglinos (Eastern Sudan).*
3. Caroline Partiot, Dominique Castex, Mark Guillon and Bruno Maureille (UMR 5199 PACEA, Bordeaux, France; Université de Bordeaux, CNRS, Inrap): *Biological diversity and funerary treatments of perinates: the 8B51 Classic Kerma necropolis of Sai island (Ach Chamaliya, Sudan)”.*
4. Corinne Feuillatre, Julia Beaumont & Henry Jackson, (University of Bradford) & Fadil Elamin, (University of Khartoum): *Isotopes and early reproductive life: a pilot study using modern Sudanese teeth.*
5. Mohamed Elshabik (University of Birmingham): *The Quest for Democracy: The Role of Social Activism in Democratization in an Authoritarian context – Sudan Case Study.*
6. Khalaf Allah O. Salih, David C. Evans, Robert Bussert, Nicole Klein, and Johannes Müller (Al Neelain University, Royal Ontario Museum, University of Toronto, Berlin University, University of Bonn): *Vertebrate Paleontology of Sudan: An overview.*
7. Abdalla Mohamed & Ayman Elfadil Gasmelseed Abbas (Bahri hospital, Khartoum, Sudan): *Characteristics, management and outcomes for patients during hospitalization due to atrial fibrillation, in Al Shaab Hospital, between February 2018 and February 2019.*

ABSTRACTS: PODIUM PRESENTATIONS

Pilgrim Flasks: Chronological and Cultural Transformations in Nubia from the New Kingdom to the Napatan Period

Loretta Kilroe, (University of Oxford) loretta.kilroe@queens.ox.ac.uk

Under Egyptian imperialistic ambitions against Nubia in the New Kingdom, the Egyptian state founded numerous 'colonial towns' across the Nile Valley. These towns were built to an Egyptian plan, and contained small amounts of Egyptian migrants, who brought with them a 'cultural package' to preserve their way of life. Among such items were pilgrim flasks.

This form was the only Egyptian vessel to be retained by Nubian peoples after the withdrawal of the colonial state, and remained in use through the Napatan and Meroitic periods. As such, it is a valuable case study for analysing the relationship between identity and material culture in such multi-dimensional sites.

In this paper, I will present a new pilgrim flask typology for Nubia, developed during my PhD research, and its distribution patterns across the region. This data will be paired with a theoretical approach to explore potential reasoning behind the absorption of the pilgrim flask into Kushite culture, with especial relevance to the role of colonial towns in establishing the endomesis of a new, 'entangled' identity in Nubia. In particular, I will discuss the short-term inclusion of coarsely manufactured pilgrim flasks as part of royal funerary repertoires in the early Napatan period.

Understanding the Kerma Amulets: the ladder and baboons *amulet-beads*

Elena D'Itria, (University of Naples "L'Orientale"), elenaditria2@gmail.com

This paper deals with the amulets of the Kerma culture collected during the excavations conducted by G.A. Reisner at the site of Kerma itself. The systematic general study of this largely unpublished group of finds was the subject of my PhD research project.

One of the more intriguing results of this research is that the majority of the Kerma amulets, particularly the schematic *faïence amulet-beads*, were of types unknown in Egypt, and very likely locally made. Some scholars have suggested that the local production of *faïence* in Kerma was based on the reuse of imported *faïence* pieces from Egypt, but on the contrary, I would propose that several elements support a local production of *faïence* and not just the re-working of imported objects.

Moreover, among the most common amulets in the capital's cemetery, some iconographies seem to be peculiar to Kerma production and possibly reflect local beliefs. This may be the case of the amulets representing ladders and baboons, which were locally made as shown by the fact that they are very different from the Egyptian ones. It will be shown that these types of *amulet-beads* may be connected with the solar cult, which was probably a crucial element of the Kerma beliefs. Noteworthy, the importance of the sun in the religion of Kerma is also confirmed by several other elements.

Colonial Assemblages in Nubian Cemeteries*Rennan Lemos, (University of Cambridge), rds13@cam.ac.uk*

This paper aims to address, based on material coming from Nubian cemeteries, how Egyptian colonialism took place and the role of material culture in the creation of other strategies of differentiation. The idea is to address how objects materialize classes between competing social models, which generate new entangled meanings.

Indian Glass in Ancient Nubia*Juliet Spedding, (University of Liverpool), hsjspedd@student.liverpool.ac.uk*

Even within Sudanese studies, Ancient Nubian glassware is an under-examined area of research. My work uses scientific analysis to identify raw materials and production techniques of Nubian-provenanced glassware from the Meroitic Period (c.400BC-c.AD400) and X-Group (c.AD400-600). This analysis has indicated that many different types of glass were present in Nubia, implying that at least some had been traded over great distances. Most notably, previously published analysis of glass objects from India [Kanungo and Brill, 2009] and South East Asia [Lankton and Dussubieux, 2006] has enabled me for the first time to identify certain coloured glass from the Lower Nubian site of Faras as a known type of SE Asian origin.

My identification of the origin of this coloured glass begs the question of how it might have travelled from India to end up in a child's grave in Nubia. It also raises questions about what proportion of glass objects found in the Near East and the Mediterranean originated in India and what else (ideas, customs, traditions) might have travelled with such items and what influence such interactions might have had.

Cosmetic Accessories in "Diaspora" Communities of New Kingdom Nubia*Uroš Matić, (Munster University), urosomatic@uni-muenster.de*

This paper will present the first results of a Post Doc project dealing with embodied lives and ideals of beauty in New Kingdom Nubia. Through the study of cosmetic substances and utensils this project investigates bodily care in "diaspora" communities. The objects which can be classified as cosmetic utensils are: cosmetic jars which originally contained ointments, palettes for grinding make up, kohl applicators, their cases and tubes, kohl pots, hair pins, combs, wig instruments, various razors, tweezers and mirrors. During the New Kingdom these cosmetic utensils are found both on sites in Egypt and Nubia allowing mutual comparison of objects and their contexts in both regions. The aim of this project is to investigate if there is evidence for different usage of cosmetic accessories on different Egyptian and Nubian sites and if this can be related to various local identity practices.

Implications of pigments identified from Sudanese archaeological sites

Kate Fulcher, (British Museum), kfulcher@BritishMuseum.org

A large number of pigment studies on objects, tombs and temples from ancient Egypt have defined an Egyptian “palette”, which has fairly recently been expanded as new scientific techniques have become available. However, the ability to export samples from Sudan has allowed a more in-depth study of pigments from four sites that identified additional pigments. This suggests that the accepted Egyptian palette could be even further expanded. The differing geological and cultural contexts in Nubia may also have led to the introduction of alternative pigments. The identification of a novel pigment at Kawa suggests that the Egyptian style iconography used by the 25th Dynasty pharaohs was culturally adapted in a variety of ways, including painting technology. The specific uses of two visually indistinguishable black pigments, carbon and bitumen, at Amara West, provides evidence for the far reach of trade routes across the region at this time period and the extent to which efforts were made to use the “correct” material for certain tasks, namely those related to funerary practices.

Nubian Glyptic from A Group Contexts in Lower Nubia

Siobhan Shinn, (Oxford University), siobhan.shinn@stx.ox.ac.uk

Glyptic has caught and held the attention of archaeologists and art historians around the world. It has the ability to fascinate our minds and pleasure our sensibilities as well as to contribute to scholarly understanding of art, administration and interregional interaction. Thus, it has become an integral part of analyses of the ancient world.

Nubian A-Group glyptic should have these same abilities; however, they have not been realized because this glyptic has been rarely, and never fully, discussed. One reason for this is that it has been poorly published. A second reason is that it has often been analyzed in conjunction with Egyptian glyptic from the same periods. Such analyses emphasize the similarities rather than the differences between Nubian and Egyptian glyptic, and thus create a perspective on their relationship that diminishes Nubian glyptic and incorrectly establishes uniformity among their glyptic.

It is the goal of this paper to correct that perspective. In it, I will first reexamine the entire corpus of Nubian A-Group glyptic, integrating six examples not previously considered into my analysis, and then compare it to Egyptian glyptic from the same periods. This will hopefully shed light on the role Nubian glyptic played in the art, administration and interregional interactions during the A-Group period.

The Genetic Structure of Populations from Sudan and South Sudan: Recent Survey and Future Outlook

Hiba Babiker, (Max Planck Institute for the Science of Human History) babiker@shh.mpg.de

Studies of human population history are becoming ripe for exploring our past regarding population origins and divergences, migrations, diffusions, assimilation and demographic history. Sudan and South Sudan are insufficiently represented in aDNA projects. Focusing on aDNA from the most exciting archaeological sites in

the region will reveal the history and migration routes of the populations in the past. Also, it will fill the big gap in genetic studies that remained poorly covered in the last decades. Hence, there is a need for datasets covering the genomic diversity in the region from ancient and modern data. Recent findings from genome-wide data representing modern people of Sudan and South Sudan highlighted the genetic structure and the demographic events that shaped their genomes. The survey showed evidence of long-term migration into Sudan, supporting previous findings on movements along the River Nile. It also pointed to the limited movements into South Sudan, indicating long-term isolation and population substructure. My talk will explore the genetic structure of modern Sudanese and South Sudanese populations, and will discuss the importance of present-day and ancient data in depicting the complex genetic histories to answer long-standing questions in the human history.

Grindstones from Graves: A New Possible Funerary Costume in the Gash Delta (Eastern Sudan)?

Francesco Michele Rega, PhD. student, University of Naples, "L'Orientale", francescomichele.rega@gmail.com

During the 2017 archeological mission of the Italian Archaeological Expedition to the Eastern Sudan (IAEES), directed by Prof. Manzo, some complete grindstones and other macro-lithic tools were found directly associated with the bodies inside a funerary context in Mahal Teglinos (K1), Kassala. These tools, which date back to the Gash Group period (mid-3rd - early 2nd mill. BCE), could be a precious testimony of a new possible funerary costume in this area, perhaps also testified by a fragment of a grindstone found inside a grave during the 1987 archaeological expedition, directed by Prof. Fattovich. Furthermore, they are also an important example of the typological development of the lithic equipment during the main agro-pastoral phase.

Island versus Mainland: A Comparative Study of Spinal Pathology in Ancient Nubia.

Samantha Tipper, (Durham University), s.n.tipper@durham.ac.uk

A comprehensive study of spinal disease, has not yet been achieved for past Nubian populations, even though it can potentially tell us much about the health, welfare, and occupational and environmental stresses faced in ancient Nubia. This research presents a comparative study of spinal health, providing bioarchaeological results from 515 individuals, from five populations, dating from the Meroitic (300 BC) to the Medieval period (AD 1500). Individuals included in this study were from two island sites; Hesa (n=60) and Mis Island (n=157), and three mainland sites; Semna South (n=192), Gabati (n=80) and lastly Soba East (n=26). Five spinal pathologies were studied, these were spinal fractures, spondylolysis, Schmorl's Nodes, osteoarthritis and Clay shoveler fractures. A bio-cultural approach was used to interpret results, using contextual data from settlements and cemeteries. Preliminary results demonstrate an overall true prevalence rate of (8.6%) for osteoarthritis, (3%) for Schmorl's Nodes, (1.4%) for Spondylolysis and (0.6%) for fractures, while no cases of Clay shoveler fractures were observed. Overall, there was an increase in all pathologies over time, with the highest prevalence rates observed in the Medieval period, as well as a much higher prevalence among island populations for each pathology, compared to mainland populations.

Nubians in Thebes Revisited

Marta Kaczanowicz (University Poznań), karmattie@gmail.com

The presence of Nubian newcomers in Thebes during the 25th dynasty is often acknowledged in literature.

The frequently cited examples of Kushites in Egypt are the Nubian princesses, the God's Wives of Amun. Except for them, however, only several other persons of Kushite descent have been identified in archaeological material so far. In my presentation, I will attempt to demonstrate several aspects of Theban funerary archaeology, which may prove useful in determining the origin of the dead buried in the necropolis during the late VIII and early VII century BC.

The Atbai Wars: The First Sustained Conflict between Egypt and the Nomads of the Eastern Desert

Julien Cooper, (Oxford University), julien.cooper@history.ox.ac.uk

At the beginning of the New Kingdom, after having reconquered Lower Nubia and vanquished the Kushites, the Egyptian state set about administering their new Nubian provinces. Serious threats to Egypt's hegemony in newly acquired Nubia are generally considered to have come only from rebellious Kushite elites or the polity of Irem. But in Lower Nubia and the deserts beyond, there remained an elusive foe that repetitively harassed the Egyptians for over a century – the nomads of the Eastern Desert. These nomads had their home in the Atbai, the region between the Nile and the Red Sea, a labyrinth of rocky ravines punctuated by goldmines, acacia forests, and mountain wells. This paper will analyse a series of Egyptian texts and archaeological sources in the 18th Dynasty and make a case for a sustained and undocumented new war between the Egyptian state and the nomads, 'the Atbai Wars'. An analysis of the sources reveals that the nomads continually raided the Lower Nubia and plundered grain stores, while Egyptians reacted with violent reprisal raids into the desert. At stake in this war was the territorial integrity of Lower Nubia and gold supply to Egypt, and the sovereignty and pasturing rights of the nomads.

MSA Archaeology in Sudan, Definition and Development from the Eastern Desert of Lower Atbara River.

Dr. Ahmed Hamid Nassr, University of El Neelain, Department of Archaeology, Khartoum, Sudan.

Ahmedkabushia84@gmail.com

The discoveries of Paleolithic sites in the south east Africa encouraged the archaeology of prehistory in north east Africa to test untouched regions to understand African past and the cultures transition.

Since the 1940's many Early and Middle Paleolithic sites have been discovered, and most studies focus on the sites location and artifact typology. MSA archaeology in most of these studies is compared with the earlier discoveries in northern Sudan and the western desert.

This paper discusses the terminology and definition of MSA in Sudan from the new discoveries in the eastern desert of Lower Atbara River. GIS sites distribution, Stone tools, bones from sites surfaces and test pit have been used. The sites setting, size and stone artifact accumulation on the surface show different MSA archaeology. The data collected late 2016 and 2017, show unique MSA data similar to the MSA in north east Africa in some characteristics and different in other, which indicates of other connection with south east Africa.

ABSTRACTS FOR POSTERS

Settlement Patterns in New Kingdom Nubia – The Egyptian Temple Towns

Jördis Vieth, (Ludwig-Maximilians-University) joerdis.vieth@gmail.com

The poster will present part of the preliminary results of my ongoing PhD-thesis, which deals with the so-called temple towns, built by the Egyptians in the course of the conquest of Egypt's southern neighbour Nubia during the late Bronze Age, the time of the New Kingdom. These very specific settlements were successively erected over a time of 400 years and were located over an area of approximately 500 km. Focal point of the poster will be to show their distribution and development over time and space on a meso (single settlements) and macro (settlement system) scale and how this influenced the urban and cultural landscapes of Nubia. As the reasons for the foundations of the temple towns and their chosen locations respectively are still a matter of discussion specific attention will be given to the survey of the hinterlands and surrounding environments of exemplified sites. A short overview of the applied methods (e.g. GIS analyses, social aspects of architecture) and some preliminary results will lead to potential explanations and shed some light on the mutual influencing relationship between humans and their environment.

Paleopathological Data Analysis of the Human Skeletal Remains from the Gash Group Cemetery at Mahal Teglinos (Eastern Sudan)

Eleonora Minucci, (University of Naples, "L'Orientale", eleonoraminucci1@gmail.com)

In the 2015 the IAEES (Italian Archaeological Expedition to the Eastern Sudan), directed by Prof. Andrea Manzo, resumed excavations in the western necropolis at Mahal Teglinos (site K1), near Kassala, where extensive excavations already took place in 1994-1995 under the direction of Prof. Rodolfo Fattovich. This contribution is focusing on the osteo-dental remains from the Gash Group tombs (early 3rd – early 2nd millennium B.C.) examined there until 2017.

The aim of the analysis is to give a first contribution in the perspective of a biological study for the Gash Group people. In this framework, paleopathological analysis of the skeletal samples were undertaken and their preliminary results will be presented here. Indeed, the evidences of bones alterations (focusing on infectious diseases, degenerative joint disease and osteoarthritis, enthesopathy changes, trauma) are submitted to provide information about health, lifestyle and diet of the group.

Biological Diversity and Funerary Treatments of Perinates: the 8B51 Classic Kerma Necropolis of Saï island (Ach Chamaliya, Sudan)

Caroline Partiot^{ab} Dominique Castex^{ac}, Mark Guillon^{ad}, Bruno Maureille^{ac} (a: UMR 5199 PACEA, Bordeaux, France; b: Université de Bordeaux, France; c: CNRS; d: Inrap), caroline.partiot@u-bordeaux.fr

Excavations of a Classic Kerma necropolis on the island of Saï between 1996 and 2001 revealed a site dedicated to children. Despite the abundance of studies dealing with the biological variability of adult, a lack of information still exists on the topic of osteological diversity of individuals who died around the birth (fetus, stillbirths, perinates), as well as on age-related burial practices during Sudan antiquity. The aim of this study is to produce a precise biological analysis of individuals deceased during the perinatal period in order to question their diversity and morbidity, and to provide hypothesis on the social status and the funerary treatments of such age class, relatively to immature individuals who survived longer. Metrical and non-metrical data were collected on 54 subjects and compared to those of 62 individuals from two French medieval sites. Our results support the hypothesis of a biologically homogeneous Saï group, with a high frequency of cervical rib that could be correlated with potentially life-threatening developmental anomalies. Observations on the funerary treatments showed that particular care was taken even for individuals who died quickly after birth.

Isotopes and Early Reproductive Life: A Pilot Study Using Modern Sudanese Teeth

*Corinne Feuillatre, Julia Beaumont & Henry Jackson, (University of Bradford) & Fadil Elamin, (University of Khartoum).
C.M.M.Feuillatre@bradford.ac.uk*

Reproduction patterns of past populations have the potential to inform demographic, health, cultural and nutritional studies. Unfortunately, no satisfactory indicators exist to detect puberty or parity in skeletal remains.

Nitrogen and carbon isotope ratios in human tissues are routinely used to inform on the diet and environment of individuals. Isotope ratios are also affected by metabolically unbalanced states engendered by rapid growth, gestation, disease or nutritional stress.

This study aims to assess the potential of incremental dentine collagen isotope ratio analysis for the reconstruction of reproductive life during adolescence and early adulthood. Incremental dentine nitrogen and carbon isotope ratios from the teeth of modern Sudanese individuals with obstetric histories and whose lifestyles are analogous to past populations are analysed.

The results highlight a potential puberty isotopic signal, with the potential to define the start of fecundity and differentiate sexes. Isotopic signatures characteristic of gestation are also observed and correspond with the expected reproductive patterns of modern Sudanese populations. The study also shows differing post-partum isotope signals, which may inform on infant feeding practices and maternal nutritional status. Thus, this study demonstrates the potential of incremental dentine isotope analysis for the reconstruction of reproductive life into early adulthood in skeletal remains.

The Quest for Democracy: The Role of Social Activism in Democratization in an Authoritarian context – Sudan Case Study

Mohamed Elshabik (University of Birmingham), mohamedelshabik@gmail.com

This study focuses on social activism in the authoritarian context of Sudan and its potential contribution to Sudan's democratization and the realization of National Unity. The research examines the concept of thriving social activism through its social capital and civil society elements as a prerequisite for democratization. This involves examining the narrative of democracy and democratization, Sudan's social activism sphere and history of patchy democratic transitions, social capital and civil society and the role played by social movements and social activism actors during the Arab Spring Revolutions. This study argues that despite the many challenges facing the social activism sphere, there is definitely vigorous social activism in Sudan with a strong democratic nature that assiduously and tirelessly strives for a larger social and political role in the endeavor to build National Unity and stage the phase for democratization. Notwithstanding these efforts, the Sudan authoritarian regime remains entrenched and the role of social activism is yet to pay dividends in its quest for democratization.

Vertebrate Paleontology of Sudan: An overview

Khalaf Allah O. Salih¹, David C. Evans^{2,3}, Robert Bussert⁴, Nicole Klein⁵, and Johannes Müller⁶

¹, Faculty of Petroleum and Minerals, Al Neelain University, Khartoum, Sudan, ², Department of Natural History, Royal Ontario Museum, ³, Department of Ecology and Evolutionary Biology, University of Toronto, ⁴, Technische Universität Berlin, ⁵, Steinmann Institute, Division of Paleontology, University of Bonn, ⁶, Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung der Humboldt-Universität zu Berlin), khalaf.salih@mfn-berlin.de

Vertebrate paleontology, the study of ancient backboned creatures that were existed deep in time (3.8 BA – 12,000 years), is poorly known in Sudan although the occurrence of fossil material in northcentral and east Sudan. This because of the ignorance and lack of the trained people. The occurrence of fossil vertebrates in the Upper Cretaceous of northcentral Sudan, namely Wadi Milk, Shendi and Kababish formations, is known since 1990s. The vertebrate fauna of the vertebrate-bearing localities is composed of fossil micro- and macrovertebrates, including aquatic (e.g., bony fishes, lung fishes, amphibians, crocodiles, turtles) and terrestrial elements (e.g., dinosaurs, snakes). Although fossil material from these units is well-preserved and locally abundant, the faunas have not been described in detail, except for the publications which came out as a result of recent paleontological expeditions 2011 - 2014 (joint collaboration between the Museum für Naturkunde Berlin, Germany, the Royal Ontario Museum, Toronto, Canada and the Al Neelain University in Khartoum, Sudan). The results of these expeditions represent a significant extension of the previous knowledge of this region and has uncovered a high diversity of fossil vertebrate faunas, many of which have yet to be described. Also, the new findings add significant information to the Late Cretaceous vertebrate fauna of northeast Africa, and northern Gondwana in general. Geologically, the vertebrate-bearing localities are among the most relevant sites from the Late Cretaceous of northeast Africa. They were deposited in an extensive coastal plain (including floodplains) in which river systems influenced by tidal activity and floodplains with lakes and ponds and with dense vegetation existed.

Beside the Late Cretaceous vertebrate faunas from northcentral Sudan, Pleistocene fluvial succession which is extensively exposed in the karib (badlands) area along the Atbara river from Khashm El Girba to Halfa Al Jadida, has yielded diverse material of hippos, elephants, several bovinds, equids, suids, giraffids, crocodiles, and turtles. The fossil assemblages suggest the occurrence of a grassland savannah crossed by streams with a wide range of discharges.

The fossil material from Sudan fills an important gap in understanding of the Late Cretaceous and Cenozoic diversity in Africa, and underscores the potential of the eastern Sahara for important Mesozoic and Cenozoic fossil discoveries.

Characteristics, Management and Outcomes for Patients during Hospitalisation due to Atrial Fibrillation, in Al Shaab Hospital, between February 2018 and February 2019

Abdalla Mohamed & Ayman Elfadil Gasmelseed Abbas (Bahri hospital, Khartoum, Sudan), a.alentod@gmail.com

Atrial fibrillation (AF) is the most common type of arrhythmia, affecting about 0.9% of the general population, and the prevalence of AF is expected to increase dramatically over the next few Decades. In Sudan there isn't enough specialized cardiac centers to guard against this major public health problem. Therefore more scientific data are required. This is a prospective cross-sectional descriptive hospital-based-study of all patients with atrial fibrillation admitted to the Cardiology department at the AlShaab Teaching Hospital from February 2018 to February 2019.

The objective of this study is to identify the risk factors, the demographical and clinico-pathological characteristics of patient with AF in Sudanese patients. In addition, the study will aim to verify the effectiveness of standard protocol of AF management on Sudanese patients focusing including types of oral anticoagulant. Moreover, the incidence of stroke, mortality and readmission will be recorded.

According to literature we found that the best tool to identify patients' characteristics, management and outcome of atrial fibrillation is self-reporting questionnaire. By conducting this study we expect to enrich the current knowledge of atrial fibrillation that could improve the clinical outcome of the disease. Furthermore, it will reveal the Sudanese patients characteristics, the different presentations and comorbidities.

NOTES

