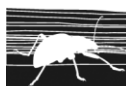


# Quaternary Entomology Dispatch



## Editorial

Dear colleagues,

I am very pleased to present the latest edition of our newsletter.

This is a very well-stocked edition that contains news and updates about a diversity of projects that reflect the breadth of problems and research questions to which Quaternary Insect studies can be applied to. It includes details about studies pertaining to past climatic and ecological changes, but also human-environment and human-ectoparasite interactions, mobility patterns and the reconstruction of specific human activities and practices. This diversity is also reflected in the sampling and geographical contexts of these projects, which span peatbogs, lake sediment, wetlands, woolly mammoth carcasses and human settlements and burial sites in Canada, Denmark, Iceland, Russia, the UK and the USA. This edition also presents the very first palaeoentomological investigations in the Czech Republic and China. In terms of periods, the work presented spans the Pleistocene all the way to the 19<sup>th</sup> century AD. In other words, there is enough to please everybody!

Make sure to have a look at the announcements, which include a conference in Funerary Archaeoentomology that will take place in Italy, as well as a PhD studentship at Plymouth University (please mind the deadline for the latter: this Friday 17<sup>th</sup> March at noon).

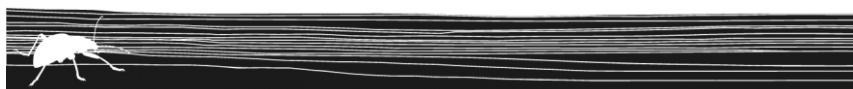
This newsletter would not be possible without your participation and you were numerous to respond to my call, so my thanks to all the contributors!

Happy reading! :)

Véronique Forbes ([veroforbes@gmail.com](mailto:veroforbes@gmail.com))

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## News from our colleagues

### News from Canada

From **Svetlana Kuzmina** ([kuzmina@ualberta.ca](mailto:kuzmina@ualberta.ca))

Work on the **Quaternary insect database from Beringia** is ongoing and I have added data from East Beringia to it last year. I am planning to eventually make the database accessible to the public through my own website, but some of the results are still awaiting publication. In the meantime, please contact me if you would like to consult the database or obtain more information.



From **Olivier Lalonde** ([olivier.lalonde.2@ulaval.ca](mailto:olivier.lalonde.2@ulaval.ca))

Olivier is currently working on finishing his Master's thesis at Université Laval in Quebec City, Canada, under the direction of Allison Bain. This is the first master's project in archaeoentomology on the **Labrador region** and his work consists of an archaeoentomological analysis of three **Inuit winter dwellings** from the Oakes Bay 1 site on Dog Island, in the Nain region (Fig. 1). He hopes to contribute to the debate on changing cultural practices amongst the Inuit during the 17<sup>th</sup> and 18<sup>th</sup> centuries. Labrador Inuit had a primarily marine-based subsistence economy, relying mainly on seal and walrus, with caribou hunting as a summer practice. They also hunted whale, although the importance of this practice in the past is still under discussion. They had a diverse hunting tool kit including harpoons, bows and arrows, spears, darts and bolas. They also used dog sleds and umiaks or skin boats. They were nomadic in summer but tended to settle during winter in large semi-subterranean sod houses, which varied between 10 to 20 metres in size.

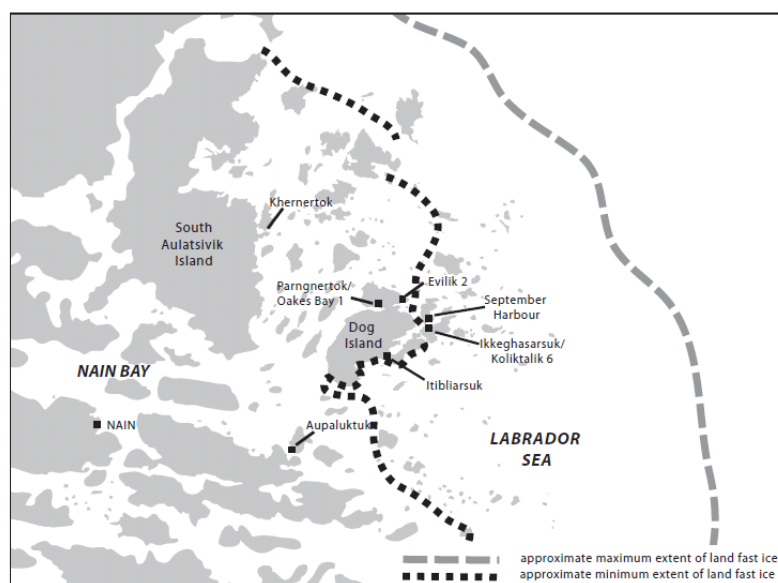
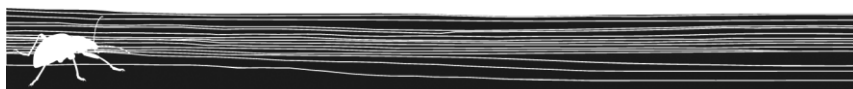
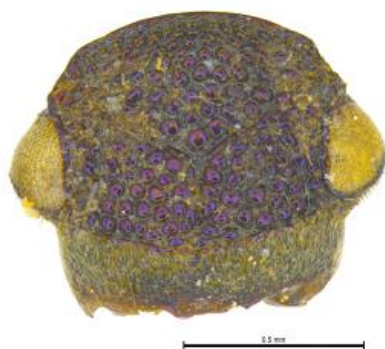


Figure 1. The Nain region (from Woollett 2010).



The Thule culture arrived in the Labrador region in the 16<sup>th</sup> century and underwent many cultural changes during the following centuries. One of the most visible is in the shape and size of these semi-subterranean winter dwellings. Many authors have proposed a variety of reasons for this, including the influence of climatic fluctuations, the new environment as well as the presence of Europeans in the region. Olivier is studying three of these houses, each dating from a different time period, in order to study this transition. Initially he hoped to study domestic hygiene and undertake a spatial analysis, but his project has slowly shifted towards a more environmental analysis. The insect remains recovered from Inuit sites need to be addressed in a different way than those from urban and temperate contexts. For example, these sites were occupied seasonally and it is challenging to tease out the human presence in the house amongst the identified insects. Below are examples of well-preserved coleopteran remains that were recovered from Dog Island (Figs. 2 & 3).



**Figure 2.** Head of *Helophorus arcticus* (photo by: O. Lalonde).



**Figure 3.** Slide of beetle subfossils from Dog Island (photo by: O. Lalonde).

After completion, Olivier plans to publish his results in an English peer-reviewed journal in order to disseminate his results and to discuss important methodological considerations for future projects in the region. The identification of the Dog Island insect fauna also makes an interesting contribution to Labrador entomology, which he also hopes to publish. There are limited collecting records from this region and his analysis has shown that many of the species identified are not yet recorded in the Labrador region. Closer collaboration with entomologists could be beneficial for both fields of study.



From **Dorothee Dubé** ([dorothee.dube.1@ulaval.ca](mailto:dorothee.dube.1@ulaval.ca))

Dorothee Dubé is currently working on her Master's project at Université Laval, under the direction of Allison Bain and James Woollett. By the end of this spring, her analyses shall be completed and she will begin writing her master's thesis. She is working on a multidisciplinary project at the **Svalbarð farm, in northeastern Iceland** (Fig. 1). This project includes the collaboration of professors and students in archaeology and geography at Université Laval, but also many other collaborators including Paul Adderley (University of Stirling), the Institute of Archaeology of Iceland (Fornleifastofnun Íslands), and the local community.

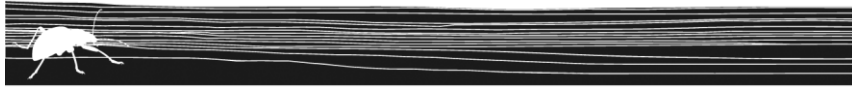


Figure 1. Svalbarð's homefield (photo by: Guðmundsson 2014).

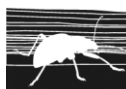
Her work consist of achaeoentomological and archaeopedological analyses in the Svalbarðshreppur area in order to recreate **past environments during the medieval and the post medieval periods** (10<sup>th</sup> to the 19<sup>th</sup> centuries) in Iceland. After three years of collecting and analysing data from seven different archaeological sites (see Figs. 2 & 3), she understands that climate changes have influenced northern communities in many ways for hundreds of years. Icelandic farmers faced strong climatic pressures during the Medieval Warm Period (10<sup>th</sup> to 12<sup>th</sup> centuries) and the Little Ice Age (16<sup>th</sup> to 19<sup>th</sup> centuries). At the Svalbarð farm, these environmental changes likely influenced community decision-making. Inhabitants had to adapt their cultural and economic practices or leave their lands. Land abandonment remains a very complex phenomenon and there is a lack of data about this issue: it is still hard to fully understand what really happened to these communities. By linking archaeoentomological remains and archaeopedological data collected in pastures that were used for decades by the farmers, Dorothee hopes to recreate past environments in order to understand adaptations made in the changing social and economic landscape.



Figure 2. Example of sondage at the central farm of Svalbarð (photo by : D. Dubé 2015).



Figure 3. Sampling the Þorvaldsstaðasel homefield (photo by : D. Dubé 2015).



## News from the Czech Republic

From Nick Schafstall ([schafstall@fld.czu.cz](mailto:schafstall@fld.czu.cz))

In 2016, I moved to the Czech Republic for a marvelous project that will allow me to obtain my PhD in Quaternary entomology. The PEDECO project from the Czech University of Life Sciences aims to **link fossil records to the large dendroecological database from Šumava National Park in the Czech Republic and the High Tatra Mountains in Slovakia**. In this project, I am involved in the identification of subfossil Coleoptera remains, especially Scolytinae (bark beetles). We found quite a lot of Coleoptera remains from the center of two lakes so far, as we discovered many events with high influx of organic remains into these lakes. The PEDECO project is cooperating closely with the EUROPIA project from Charles University, which aims to reconstruct the establishment of dominant tree species *Picea abies* in this region and to identify the factors that control this type of forest. Together with Scolytinae expert Miloš Knižek I've identified 13 species of Scolytinae from the two lakes, from samples with an age of around 8,000 cal yrs BP to samples from the top part of the sediment cores. Apart from Scolytinae, virtually all beetle families with species linked to mountainous woodland appear in our records. This study on subfossil Coleoptera is currently the **first one in the Czech Republic** and is well received by palaeoecologists and entomologists within the Czech Republic and surrounding countries. Preliminary results show that the methodology of linking Scolytinae with disturbance events such as wind throws and fire can be developed further, especially concerning so-called secondary attack species.

Below are some examples of the Coleopteran subfossils recovered from lake sediments from Šumava National Park (Figs. 1,2 & 3):



Figure 1. *Crypturgus* sp.  
(Scolytinae) 40x.



Figure 2. Carabidae  
indet. 20x.

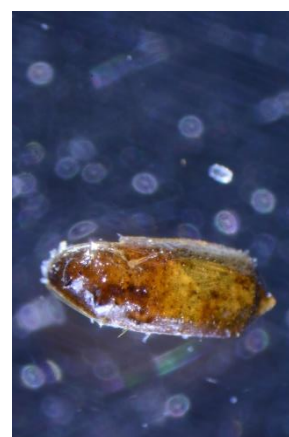
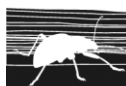


Figure 3. *Pityogenes  
chalcographus*  
(Scolytinae) 40x.

As I am still at the beginning of my PhD studies, I am looking forward to developing new ideas and share them with other palaeoecologists or Quaternary entomologists. I will be attending the **PAGES Open Scientist Meeting in Zaragoza** in May this year, where I will present my preliminary results as a poster. If you are interested in my research and would like to learn more, I invite you to send me an email. You can also find more information about the EUROPIA project on the web site of Charles University: <https://www.natur.cuni.cz/biology/botany/structure/palaeoecology/research>



## News from Iceland

From **Hrönn Konráðsdóttir** ([Hronn.Konn@gmail.com](mailto:Hronn.Konn@gmail.com))

For a few years I have been out of archaeology due to circumstances, but finally, there is some archaeoentomological work to report on here. These days I am working mainly in commercial archaeology as well as teaching part-time at the University of Iceland. Fortunately, the Cultural Heritage Agency of Iceland understands the possibilities of archaeoentomology and therefore a small proportion of many of the larger commercial excavations goes towards such work. As it is, I do not have a fulltime job, so I am working for most if not all of the companies here. I also do a bit of other archaeological work, excavations, survey, as well as going through, assessing and floating old samples that need some attention. Alas we do not have the money to do more with them this time around so they are then just being stored for the time being. I am working on two archaeoentomological projects now, one is a look at a **19<sup>th</sup>-20<sup>th</sup> century small farm in south Iceland** and the other is a **Viking Age longhouse in central Reykjavík** where I also took part in the excavations (Fig. 1).



**Figure 1.** Hrönn taking elevations at the Viking Age site on Lækjargata.

The former project is a look into all of the rooms in the complex, with a view of testing whether the insects may provide indications as to the use of the different rooms and the ecological conditions inside them. There is very good preservation at the site and there are a large number of specimens. I am about half way into that project, so I have no results to report on yet, but the data looks very promising. We do hope that this work will benefit not only the excavation report, but also provide useful comparative material for future studies.

The latter project is a tiny look at the longhouse (we only got funding to analyse about four samples) to test whether insect remains are preserved and if such remains would help to reconstruct activities and environmental conditions at the site. This Viking age longhouse (Fig. 2) was a surprise find in central Reykjavík (the capital of Iceland) in the summer of 2015. It was known that a farm from the 18<sup>th</sup> - 19<sup>th</sup> century was located there, but the presence of a Viking Age site was undocumented. Imagine our surprise when we found half of a longhouse, 16 m in length! Bone is rather well preserved in some areas of the site, so there is some hope for other organic remains to be preserved as well. The post-excavation work is ongoing and in due time the excavation site will be turned into a museum.



Figure 2. The Viking Age longhouse at Lækjargata.

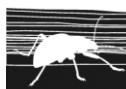
I would also like to reach out and check if there is **anyone interested in having a look at a few specimens that I have had trouble with**. As I am the only one in the country currently dealing with this material, I would be interested in collaborating with other Quaternary Entomologists and/or (neo)entomologist. The only reference collection we have here is the one from the Icelandic Institute of Natural History. While it is a very good and large collection, it only has specimens from Iceland as well as the few stray species that show up around here. Therefore, anything out of the ordinary can be difficult to identify. I have also been **dealing with old samples** from excavations from the 80's and 90's, floating them and making hard decisions about whether to continue storing them, process them for better storage or even just sieving them to collect bones and artifacts. I would love to hear from anyone who is dealing with similar things. I would be very interested in knowing how this is dealt with in other countries and if there are any specific rules and regulations that you know of. The new rules of the National Museum of Iceland states that only things collected from samples (e.g. insect remains, pollen slides, charcoal etc.) can be stored there. But on the other hand they will take no heavy or light fractions (such as in Fig. 3) and no unprocessed samples.



Figure 3. Drying residue from botanical samples.

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## News from Sweden

From **Phil Buckland** ([philip.buckland@umu.se](mailto:philip.buckland@umu.se))

I am currently working on some material from a Palaeolithic site in the UK, as well as finishing up a few papers on a dung pit, a bishop and some digital projects.

We've been doing some quality control on the **BugsCEP** data and are now reimporting this into **SEAD**. A new online interface for SEAD is being developed which will allow you to more easily get at the insect data. This will also get it ready for import into **Neotoma**.

I've been experimenting with different ways of visualising the environmental reconstructions from BugsCEP, including **3D symbolic landscapes** (nothing fancy and GIS, but just more spatial than before). This is in cooperation with Humlab in Umeå, and the DataARC project (<https://www.data-arc.org>).

## News from the UK

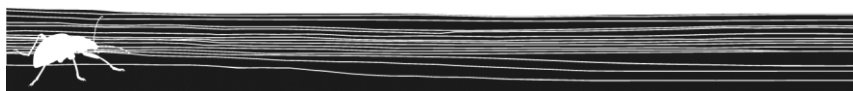
From **Scott Elias** ([S.Elias@rhul.ac.uk](mailto:S.Elias@rhul.ac.uk))

Scott Elias is finishing up his last academic year at Royal Holloway, University of London, and will be retiring September 1<sup>st</sup>. He will then be moving back to Denver, Colorado. Scott's last PhD student, Tianshu Zhang, is finishing the identification of Holocene insect fossils from a wetland in the northwest corner of China. In this process, she has received tremendous help from Dr Robert Angus and the coleopterists of the Natural History Museum (London). Tianshu will undoubtedly report on her own findings for some future edition of *QED*, but the initial results are quite intriguing. Her project represents the **first fossil beetle project from China**, and we were expecting to find quite a number of unfamiliar Chinese species. What we have found, instead, has been a distinctly northern Eurasian fauna that includes many Holarctic, cold-adapted species. The study site is at the southernmost edge of the Altai Mountains, and the fossil evidence suggests that beetles used this highland region as a north-south migration corridor in the early Holocene.

Upon his return to Colorado, Scott intends to re-launch his research on **Eastern Beringian insect fossils**. He has been collaborating with archaeologist John Hoffecker (University of Colorado) and ancient DNA geneticist Dennis O'Rourke (University of Kansas) on a series of articles and a workshop concerning the 'Beringian Stand Still Hypothesis.' This hypothesis, as explained in a review article in *Science* (vol 343, 979-980), puts forward the idea that the migration of humans from Siberia into the New World stalled during the last glacial maximum, and people lived on the Bering Land Bridge for several thousand years, sending hunting parties into Alaska and perhaps as far east as Bluefish Caves in the Yukon. In order to test this hypothesis, we will need a lot more fossil and archaeological evidence from likely sites near the land bridge. This will take a whole new research project (or more), but it is an intriguing hypothesis that we intend to follow up with more original research.







From Nicki Whitehouse ([Nicola.whitehouse@plymouth.ac.uk](mailto:Nicola.whitehouse@plymouth.ac.uk))

My lab group has had a busy few months. I am currently on study leave, writing several manuscripts, including one on the **ecological effects of early agriculture in Ireland** and one concerned with the **ecological changes** seen in the fossil beetle record **associated with multiple interglacials**. This work focuses not just on the climatic aspects of the various records but also the landscape ecological effects of mega-herbivores and other disturbance factors. The results are very interesting and I look forward to sharing these with colleagues once the manuscript has been submitted. The work is being done in collaboration with Dr David Smith at the University of Birmingham and others. The results of the work will be compared with analyses undertaken by Sandom et al. (2014). To that end, I am spending part of my study leave at the *Ecoinformatics & Biodiversity* group of Prof Jens-Christian Svenning, Department of Bioscience, Aarhus University, Denmark, over March and June 2017 to facilitate comparison with previous work as well as develop new lines of enquiry on ecosystem functional diversity.

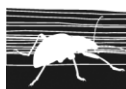
I currently have two funded research projects, both of which include Quaternary entomology research, the 'Celtic crannogs' project and the 'Wildscape project'.



**Figure 1.** Baron corer in usage in Ireland; Dr Maarten van Hardenbroek and Dr Helen MacKay, University of Newcastle

The AHRC funded project *Celtic Connections and Crannogs: a new study of lake settlements across the Irish Sea* (<https://www.plymouth.ac.uk/research/centre-for-research-in-environment-society/celtic-connections-and-crannogs>) is now moving towards the end of its second year of funding. The project team includes researchers at the University of Southampton (Professor Tony Brown (PI), Professor Pete Langdon and Dr Maarten van Hardenbroek), Newcastle (Dr Andrew Henderson and Dr Helen Mackay) and Queen's University Belfast (Dr Finbar McCormick and Dr Emily Murray). The AOC Archaeology Group is also involved through Dr Graeme Cavers (Head of Survey at AOC) and Dr Anne Crone (Project Manager at AOC). Further details on the project objectives can be found on the website. Dr Kim Davies at Plymouth is working on the project, with the main focus of her work being insect assemblages (beetles, ectoparasites and flies) from an Iron Age wetland lake settlement site in Scotland. The results of her work so far have been very encouraging and will likely reveal insights into site usage. We have also been sampling deposits in several lakes across Northern Ireland and Scotland and whilst much of this component of the work involves the use of chironomids, pollen and other proxies, we have also been experimenting with the use of a big 'baron' corer (Fig. 1) to allow the extraction of sufficient beetle remains from lake deposits.

The 'Wildscape' project (*Reconstructing the 'Wildscape'; Thorne and Hatfield Moors Hidden Landscapes*) is a recently funded project to myself, Dr Ben Gearey (UCC, Rol) and Dr Henry Chapman. It is designed to build working links between local communities and organisations (Thorne and Hatfield Moors Conservation Forum, THMCF) and academic institutions (Universities of Plymouth, Cork and Birmingham), in the Isle of Axholme and Hatfield Moors area, Humberhead Levels region, UK. Project partners include Natural England, Heritage England and Doncaster Museum. The project is funded via the *Isle of Axholme and Hatfield Chase Landscape Partnership*, developed by the *Humberhead Levels Partnership* in 2013. The Landscape Partnership straddles the



historic boundary between Yorkshire and Lincolnshire and is financed by a grant from the Heritage Lottery Fund awarded in 2016. There are two positions associated with this project, the first being a PhD studentship that is advertised here in QED (page 17), the other is a part-time research officer, which is still to be advertised.

The project is based around an investigation of the wild 'hidden landscapes' of Thorne and Hatfield Moors and its surrounding areas, especially its nearby floodplains and mires. These 'hidden landscapes' are the prehistoric, historic and post-medieval landscapes of the Humberhead Levels, which are preserved and concealed by the peat and alluvial deposits that cover much of this environment. The landscape in the past was famed for its wildness – a remnant of what was once an extensive complex of raised mires, heathland, fen, carr woodland and wetlands. Historians provide a glimpse into this landscape, such as John Leland, who visited the area in the 16<sup>th</sup> century, a "*window onto what must have been a truly fabulous "everglades-like" landscape..*", as described eloquently by local historian Colin Howes.

Peat and other organic deposits on and around the Moors and associated floodplains represent a unique resource for reconstructing how this environment and cultural landscape developed, an understanding of why they look as they do today and how they could be restored as fully functioning ecosystems. Using long-term ecological approaches, we will study how these 'wildscapes' have developed since prehistory, the formation of their various ecological communities, how human beings used and moved through these wetland landscapes and gain improved understanding of the roles of climate and sea level change, as well as human activities, on their development through time. These historical perspectives are critical for understanding and managing this current dynamic landscape, its heritage and associated ecosystems, hydrological systems and also for planning for the future. Factors such as changes in relative sea level, increasing precipitation and run-off due to climate change are likely to have major impacts in the Humberhead levels.

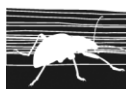
There is a long tradition of archaeological scientists studying this landscape, with a rich repository of existing information and knowledge, but which has not been fully capitalised and synthesised to gain improved understanding of some of the above issues. Neither has this information been fully brought to the public's attention in a way that will allow local communities to gain an understanding of the challenges that face low-lying landscapes such as the Humberhead Levels in the near future, their important heritage value, and enable them to contribute towards debates and solutions towards their future. This project is designed to address these issues.



**Figure 2.** Thorne Moors peatlands. Photo: Peter Roworth, with permission.

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**Dr Georgina Milne** recently submitted her PhD (September 2016) at Queen's University Belfast entitled *Ancestral niche evolution and ancestral niche reconstruction*. She is the last of my PhD students from QUB to submit and has been supervised by Dr Alison Cameron (formerly at QUB, now at Bangor University), Prof Paulo Prodhhl (QUB) and myself. She is currently working as a species distribution modeller for ABFI (Agri-Food and Biosciences Institute, Northern Ireland) and planning to write up some of the results from her research.

Foremost, is her re-analysis of all the envelopes currently used in **European MCR reconstructions**. This work creates new species envelopes using Geo-referenced data in GBIF. The results indicate that winter temperature reconstructions can be significantly improved; the work is being written up for publication along with an 'R-code' package to allow other users to use the new envelopes and generate their own for species of their choosing. In addition to Alison Cameron and myself, Phil Buckland is also involved in this new work. We plan to submit the work for publication by the end of 2017.

**Fran Rowney** is currently writing up his PhD thesis here at Plymouth, focused on the climatic and ecological significance of Early Middle Pleistocene interglacials in Britain. For more information, please see his update below.

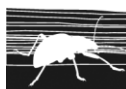
**References:** Sandom, C. *et al.* (2014) **High herbivore density associated with vegetation diversity in interglacial ecosystems**. *Proceedings of the National Academy of Sciences* 111 (11): 4162-4167. doi: 10.1073/pnas.1311014111



From **Francis Rowney** ([francis.rowney@plymouth.ac.uk](mailto:francis.rowney@plymouth.ac.uk))

I am currently in the final stages of my PhD on the **climates and ecology of Middle Pleistocene interglacials (sensu Cromerian) in Northwest Europe** (supervisors: Dr Nicki Whitehouse, Prof Ralph Fyfe, Prof Danielle Schreve). This combines two strands of research. Firstly, I have developed new multi-proxy records from notable Cromerian sites in eastern England (West Runton, Pakefield), combining Coleoptera, pollen and coprophilous fungal spores, in order to give in-depth syntheses of local ecological and climatic conditions during different temperate stages. These have particularly focussed on investigating the influence of disturbance processes (herbivory, wildfire, etc.) on local vegetation communities and landscape heterogeneity. Secondly, I have been re-appraising a suite of Russell Coope's Middle Pleistocene coleopteran records, to develop more accurate and precise palaeoclimatic reconstructions. These will be used to test whether the Mid-Brunhes Transition (a shift towards higher amplitude glacial-interglacial cycles, c.400-500 ka) is detectable in Northwest Europe.

I will be taking part in the first **PAGES Forest Dynamics meeting in Liverpool** (21<sup>st</sup>-23<sup>rd</sup> March), which aims to bring together a range of international expertise on disturbance ecology, particularly from palaeoecological and long-term perspectives. I will also be publishing findings from my thesis in due course.



## News from the USA

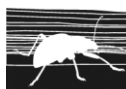
By **Martin E. Adams** ([paleoinsect@gmail.com](mailto:paleoinsect@gmail.com))

I have a paper coming out soon involving the discovery of **late-Pleistocene to mid-Holocene cimicid remains** from the **Paisley Five Mile Point Caves** site (35LK3400). Paisley Caves are a pre-Clovis rockshelter site in the northern Great Basin of North America, in south-central (Lake County) Oregon. The site consists of a series of eight caves on a west-facing ridge of Miocene aged basalt and rhyolite, and the focus of my work right now is on Cave 2. Human occupation and use of Cave 2, though most likely seasonal, continuously spans from almost 13,500 cal. BP to approximately 2,000 years ago. There is evidence of human use of the caves after 2,000 years, but it is sporadic. In addition, skeletal remains and guano suggest that the cave was occupied continuously by bats from at least 12,600 cal. BP until 2,000 years ago. Thus, humans and bats cohabited in Cave 2 for almost 11,000 years, until the roof of Cave 2 collapsed at ~2,000 cal. BP, which exposed the cave to more light and other elements and probably made it less attractive to both bats and humans.

In the course of excavations, 14 cimicid remains were recovered from Cave 2, all of which are local, native species. One specimen, a female *Cimex antennatus*, is approximately 5,100 years old. The other 13 individuals range in age from 9,400 to almost 11,000 years old, and are represented by *Cimex latipennis* (Fig. 1) (three individuals) and *Cimex pilosellus* (five individuals). Five others were classified to the genus *Cimex* but were too fragmented to identify further.



**Figure 1.** Photograph of the dorsal (left) and ventral (right) views of specimen 1961-PC-2/7B-12-12A, a female *Cimex latipennis* dated to 9,700 cal. BP. (scale bar = 1mm). Only the abdomen is present in this specimen.



It is widely believed that the common bed bug (*Cimex lectularius*) became a human parasite thousands of years ago when humans shared caves with bats in them. *Cimex lectularius* is an ectoparasite of bats that most likely fed on humans when the opportunity presented itself, and when human populations left the cave environment bed bugs went with them. While the fourteen Nearctic cimicids recovered from Paisley Caves are known to be parasites of vespertilionid bats, there is nothing to suggest that any of these three species adapted to human environments once Cave 2 was no longer occupied. However, these specimens do represent the **oldest remains of the genus *Cimex*** thus far recorded, and it is very likely that humans acted as an opportunistic host during the time span in which they coexisted in Cave 2 with cimicid-infested bats.

The paper, '[An Early Holocene Record of \*Cimex\* \(Hemiptera: Cimicidae\) in Western North America](#)', is set to be published in an upcoming issue of the *Journal of Medical Entomology*.

## Ongoing research projects

### Preliminary Results of Recent Palaeoentomological Research in Siberia

By **Svetlana Kuzmina** (Freelance palaeoentomologist, [kuzmina@ualberta.ca](mailto:kuzmina@ualberta.ca))

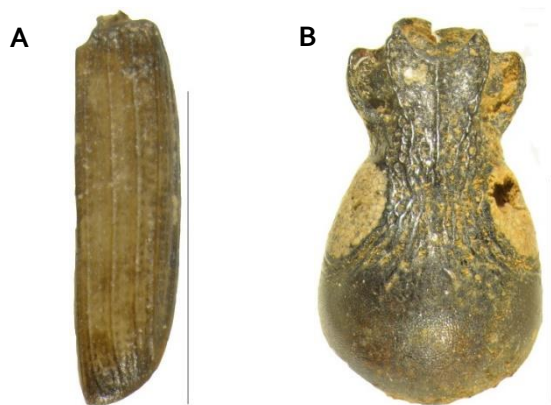
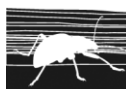
Project collaborators: Dr. Frank Kienast (Senckenberg Research Station of Quaternary Palaeontology in Weimar, Germany), Ksenia Ashastina (PhD student, University of Jena, Germany) & Olga Potapova (The Mammoth Site of Hot Springs, SD, USA)



**Figure 1.** Batagai outcrop from the air. Photo: Grigory Savvinov, Yakutsk University.

Dr. Frank Kienast and his Russian PhD student Ksenia Ashastina collected great material from a unique Siberian site – The **Batagai permafrost outcrop** (fig. 1) – which is not an ordinary river bluff, but a very large thaw slump. The site, which is located in the Vershoyansk region of the Central Yakutia, attracts international attention; it was visited by Russian, German and British scientists and was also the subject of several popular documentary movies. Frank and Ksenia collected bulk samples for different geological and paleontological analyses (mainly plant macrofossil analyses) and, following my instructions, they also screened several samples for insect remains.

These samples yielded two types of insect assemblages. The first one came from the peat layers, which produced a number of rare forest species of beetles (such as *Leptophloeus angustulus* (fig. 2A) from Laemophloeidae family) and numerous ants. The second type came from silty sediment (Siberian Yedoma) and includes insects indicative of steppe-tundra environments. It includes species such as the weevils *Stephanocleonus eruditus*, *S. incertus*, *Otiorhynchus cribrosicollis* (Fig. 2B), *Phyllobius kolymensis*, the pill beetle *Morychus viridis* and the ground beetle *Cymindis arctica*. These xerophilous beetles are very common in the Pleistocene of the northern-east Yakutia. This is the first record of well-developed steppe-tundra insect community in the Central Yakutia.



**Figure 2.** Coleoptera subfossils from Siberia: (A) *Leptophloeus angustulus* from the Batagai site, Central Yakutia; (B) *Otiorhynchus cribrosicollis* from the Megin site, Central Yakutia.

The **problem of inherited steppe communities** was raised by Daniil Berman many years ago. His research group studied modern relict steppes in Kolyma and Indigirka River upstream, revealing that many members of the Pleistocene steppe-tundra insect community had once thrived there. D. Berman suggested that the modern relict steppes of the region originated from the Pleistocene. However, our restricted fossil record from the region suggested otherwise – four samples from Ust'-Nera (the area of modern distribution of relict steppes) contained no steppe insect species at all. Batagai is another area where the modern relict steppe existed. The fossil record from the site proves that steppe insects indeed existed there from the Pleistocene.

The second source of the Central Yakutia Quaternary insect record comes from a new site, Megin, where a **wooly mammoth body** has been found. Olga Potapova from The Mammoth Site of Hot Springs, SD, who worked in Siberia, sent me two samples for identification. The results were reported (Potapova et al, 2016) in Salt Lake City, and a full article is in preparation. The insect assemblage from Megin also included steppe-tundra species such as *Otiorhynchus cribrosicollis* (fig. 2B).

**References:** Potapova, O., Maschenko, E.N., Protopopov, A., Kienast, Rudaya, N., Kuzmina, S., Parkhaev, P.Y., Van Der Plicht, J., Galanin, A., Pavlov, I. 2016. **The Sartanian biodiversity of Central Yakutia, Russia: the analyses of the new late Pleistocene Megin site.** 76th annual meeting, Abstracts of papers, Society of vertebrate paleontology, October 26–29, 2016, Salt Lake City, USA.

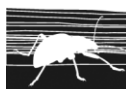
### **Insects from Bronze Age Oak coffin burials of Denmark**

By **Jesper Petersen** (Natural History Museum of Denmark, Centre for Geogenetics, [jesperpetersen@snm.ku.dk](mailto:jesperpetersen@snm.ku.dk))

This project started about two years ago when a colleague of mine went through the entomology collection at the Zoological Museum in Copenhagen and stumbled upon an old cabinet with subfossil insect material collected in the early 1900s. Besides material from several natural deposits studied by Kai Henriksen (1933) it also includes samples from a handful of archaeological sites. Most noteworthy perhaps is a microscope slide with insects recovered from a bouquet found inside the **Egtved Girl's coffin** (see link below). Henriksen identified these as being 'Heteropterans' back in the 1920's (Thomsen 1929), but our reexamination of the material clearly show that they are exuvia from early instars of jumping plant lice (Psyllidae). The specimens have been identified but unfortunately very little is known about the duration of the different life stages in this species. Even though some museums have fairly large numbers of adults in their collection, it seems like instars are close to non-existent, so establishing the lifecycle by noting when the different stages were collected was not possible. Last year I started to collect the instars myself and so far it looks very promising, as individuals of the species molt nearly simultaneously or within a few days of each other. It now seems that we will be able to estimate the month and even week of the burial rather than simply the season.

# Quaternary Entomology

## Dispatch



Pictures and more information about the Egtved Girl can be found here: <http://en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-ad/the-bronze-age/the-egtved-girl/>

Another interesting sample found in the cabinet, also from the Bronze Age, is an old test tube with fly puparia recovered from a woman's stone coffin. Just like the Egtved Girl she belonged to an elite group of people placed in **monumental burial mounds between 1500-1200 BC**. However, due to nearly complete decomposition of the organic component, this grave has received little media attention. Puparia in the grave were excellently preserved due to salts from the corroding artifacts. The colonization of the corpse was monospecific by a species only found in high numbers when colonization of other flies is not possible. This indicates that the body was well-covered and only exposed for a short time before burial. The species also points to a burial in summer or early autumn.

Reading through old excavation reports of Bronze Age Oak coffin burials, it quickly becomes evident that finding insects (especially fly puparia) in the graves was not uncommon. Sadly, most of these burials were excavated in the late 1800s and often by amateurs, who were more interested in the artifacts than anything else. In some cases the archaeologists may even have removed the insect remains just for the sake of cleanliness but their presence was nonetheless noted in the reports. Hopefully more samples will show up in the future. Today, there are about 27 000 burial mounds left in Denmark and probably 1/3 of these are from the Bronze Age. However, we should not expect to see a new Egtved Girl in the nearest future as burial mounds have been under strict protection since 1937 and permission to excavate them is only given in unusual circumstances.

**References:** Henriksen, K. L. (1933) *Undersøgelser over Danmark – Skånes kvartære insektfauna. Særtryk af videnskabelige meddelelser fra dansk naturhistorisk forening*, bind 96, festskrift II. / Thomsen, T. (1929). In *Nordiske Fortidsminder* Vol 2. Egekistefundet fra Egtved, fra den ældre Bronzealder.

## Recently completed dissertation

### What can entomological evidence tell us about the character of Roman settlement in Britain with reference to the site of Gill Mill, Oxfordshire?

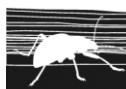
BA dissertation (2016, University of Oxford) by: **Alexander Benn** ([alexander.benn@hertford.ox.ac.uk](mailto:alexander.benn@hertford.ox.ac.uk))  
Supervised by Prof. Mark Robinson

This thesis utilises archaeoentomological techniques to reassess the character of a small rural settlement, Gill Mill, in Oxfordshire. Through processing a number of samples from the site, an attempt was made to try and demonstrate that the site in question was less of a small farm, and more of a grain transportation hub. This was achieved through the targeting of two species of grain beetle, *Oryzaephilus surinamensis* and *Sitophilus granarius*. Both of these insects are usually found at major grain storage sites, which they commonly infest. The discovery of these beetles at a rural site was of significant archaeological interest, and prompted a second look at the conclusions drawn from an earlier excavation (Booth et al, 2007).

From the research undertaken, the findings of the thesis were that Gill Mill was most likely a sort of grain storage facility for the wider Thames Basin region. Located within accessible range of the major thoroughfare of the Ackerman Roman road and several large rivers, the site was ideally placed to transport grain around the British midlands. On the basis of the presence of unusual grain beetle species and comparisons with other, similar sites, it is suggested that Gill Mill was, in all likelihood, much more than a small, remote, farming village.

14<sup>th</sup> March 2017  
edition

# Quaternary Entomology Dispatch



## Announcements

### Conference in Funerary Archaeoentomology, Treviso, Italy, 7<sup>th</sup> June 2017

The Italian **Association for Forensic Entomology (GIEF)** is happy and honoured to host the **2nd International Conference in Funerary Archaeoentomology** in the city of Treviso, Italy, on 7<sup>th</sup> June 2017 (<http://giefitalia.org/events/2nd-international-conference-in-funerary-archaeoentomology-and-soldier-recovery-workshop/>).

Insects are the largest and most widely distributed group of animals in the world. Currently, insects contribute to 75% of all known animal species. They are represented on all terrestrial land masses, from high altitudes to the interiors of caves. Due to their relatively small size, the presence of wings in many species, and their feeding habits they have been successful colonisers of all trophic niches. Given this, it is not surprising that they have constantly been in close contact with humans and that their presence and activity can play an important role in human life and health but also after death.

Funerary Archaeoentomology, as defined by Jean-Bernard Huchet in 1996, is the use of information provided by the insect fauna associated with archaeological human remains in order to define the peri- and post-mortem events or funerary practices. This discipline has a common theoretical and practical background with Forensic Entomology but it differs for the aims. Until now, the discipline has been used in a wide spectrum of archaeological studies from the Egyptian and South American mummies to the remains of WWI soldiers.

This conference will take place in a very significant town close to the WWI Italian front (<https://www.youtube.com/watch?v=l18Egd73miY>; <https://www.youtube.com/watch?v=b1xdXzQm7EQ>) and for this reason part of the meeting will host the "Recovery of soldier remains Workshop".

The conference will be followed by the **14<sup>th</sup> meeting of the European Association for Forensic Entomology (EAFE)** (<http://giefitalia.org/events/14th-meeting-eur...ensic-entomology/>), 7th (evening) – 9th June 2017. On the 10<sup>th</sup> a visit of some places of the WWI fronts will take place.

Treviso is a nice city in the Venetian region, located between the Dolomites and Venice. Treviso is known for being the original production area of Prosecco wine, and the birthplace of the popular Italian dessert tiramisu. The city is home to the headquarters of clothing retailer Benetton, Sisley, Stefanel, Diadora and Lotto Sport Italia, appliance maker De' Longhi and bicycle maker Pinarello.

Have a look... <https://www.youtube.com/watch?v=PKe2yom5Yso>

Treviso has two International Airports within easy reach and because of its size, all the most important locations in Treviso are in a walking distance.

See you soon in Treviso!

All the best,

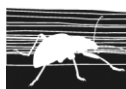
**Stefano Vanin** ([s.vanin@hud.ac.uk](mailto:s.vanin@hud.ac.uk); [stefano.vanin@gmail.com](mailto:stefano.vanin@gmail.com))





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# Quaternary Entomology Dispatch



## Three-year PhD studentship: Reconstructing the 'Wildscape'; Thorne and Hatfield Moors Hidden Landscapes (Wildscape HHLP)

Dr Nicki Whitehouse ([Nicola.whitehouse@plymouth.ac.uk](mailto:Nicola.whitehouse@plymouth.ac.uk)) tel.: 01752 585957

Prof Ralph Fyfe ([ralph.fyfe@plymouth.ac.uk](mailto:ralph.fyfe@plymouth.ac.uk)) tel.: 01752 585929

Dr Ben Gearey, University College Cork, Republic of Ireland ([b.gearey@ucc.ac.uk](mailto:b.gearey@ucc.ac.uk)) tel.: +353-21-490-3000

Applications are invited for a **three-year PhD studentship**. The studentship will ideally start on **1<sup>st</sup> April 2017**, although a later start date may be possible.

### Project Description

The PhD project is based around an investigation of the wild 'hidden landscapes' of Thorne and Hatfield Moors and its surrounding areas, especially its nearby floodplains and meres. The PhD student will collate existing published and unpublished palaeoenvironmental and archaeological data from the region and re-analyse these using state of the art methodologies to provide a coherent synthesis of environmental, biological and archaeological change over the Holocene for the region and the links between them. They will undertake targeted new fieldwork to address periods and locations of limited knowledge and consider the links between past and present 'wildscapes'. The Wildscape HHLP is an innovative project building working links between local communities and organisations and academic institutions (Universities of Plymouth, Cork and Birmingham), in the Isle of Axholme and Hatfield Moors area, Humberhead Levels region, UK.

Further details and Intellectual Property rights requirements of the project can be found <https://www.plymouth.ac.uk/student-life/your-studies/the-graduate-school/postgraduate-research-studentships/reconstructing-the-wildscape>

### Eligibility

Applicants should have (at least) a first or upper second class honours degree in an appropriate subject and preferably a relevant MSc or MRes qualification.

The studentship is supported for 3 years and includes full Home/EU tuition fees plus a stipend of £14,296 per annum. The studentship will only fully fund those applicants who are eligible for Home/EU fees with relevant qualifications. Applicants normally required to cover overseas fees will have to cover the difference between the Home/EU and the overseas tuition fee rates (approximately £11,040 per annum).

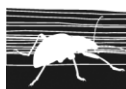
If you wish to discuss this project further informally, please contact Dr Nicki Whitehouse, [Nicola.whitehouse@plymouth.ac.uk](mailto:Nicola.whitehouse@plymouth.ac.uk). However, applications must be made in accordance with the details shown below.

General information about applying for a research degree at Plymouth University is available at: <https://www.plymouth.ac.uk/student-life/your-studies/the-graduate-school/applicants-and-enquirers>

You can apply via the online application form which can be found at: <https://www.plymouth.ac.uk/study/postgraduate> and click 'Apply'.

14<sup>th</sup> March 2017  
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# Quaternary Entomology Dispatch



Please mark it FAO Sharon Healy and clearly state that you are applying for a PhD studentship within the School of Geography, Earth & Environmental Science. Please attach a covering letter detailing your suitability for the studentship, a CV and the names of 2 academic referees.

For more information on the admissions process please contact Sharon Healy ([sharon.healy@plymouth.ac.uk](mailto:sharon.healy@plymouth.ac.uk)). **The closing date for applications is 12 noon on 17<sup>th</sup> March 2017.** Shortlisted candidates will be invited for interview on 24<sup>th</sup> March 2017. We regret that we may not be able to respond to all applications. Applicants who have not received an offer of a place by 30<sup>th</sup> March 2017 should consider their application has been unsuccessful on this occasion.

## Recent publications

Speleers, L., Goffette, Q., Marinova, E., Van Der Valk, J.M.A. & Claes, B. (2016) *Évolution du paysage végétal médiéval et mise en évidence de la densification des activités humaines sur le site de la "Petite rue des Bouchers" (Bruxelles, Belgique)*. In : M.-F. Dietsch-Sellami, C. Hallavant, L. Bouby & B. Pradat (eds) : *Plantes, produits végétaux et ravageurs*. Actes des Xe Rencontres d'Archéobotanique, Les Eyzies-de-Tayac, 24-27 septembre 2014, pp. 89-105. Aquitania Supplément 36, Bordeaux.

## About the Quaternary Entomology mailing list

Back in 2011, Véronique Forbes and Scott Elias set up a mailing list to facilitate communication amongst researchers in Quaternary Entomology. The list allows subscribers, including experienced workers in the field but also students, to exchange news and ideas and to query their colleagues about any questions, problems or requests they may have. Our mailing list is hosted by Jiscmail, a national academic service based in the UK.

The mailing list is used to distribute editions of the Quaternary Entomology Dispatch. **The next edition of QED is scheduled for September 2017**, and a call for contribution will be sent to the mailing list during the previous month.

**To subscribe to the mailing list, please visit:**

<https://www.jiscmail.ac.uk/cgi-bin/webadmin?Ao=QUATERNARYENTOMOLOGY>

