

**University of Groningen**  
**Groningen Institute of Archaeology – GIA**

**Annual Report 2010**



**Cover illustration:** Kokerihamna excavation, Spitsbergen (RUG/GIA)



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## FOREWORD

2010 was perhaps GIA's most successful year ever. This observation is based on the number of PhD defences (five), the amount of research money received from NWO, and the research assessment by a group of peers.

The series of PhD defences started with Jessica Grimm defending her thesis entitled *Animal keeping and the use of animal products in medieval Emden (Lower Saxony, Germany)* on 15 April. Bjørn Smit (*Valuable flints?*) defended his thesis on the scientific value of flint surface scatters in the northern part of Netherlands on 20 May. On 18 November Elisabeth van 't Lindenhout defended her thesis on house remains from the Archaic period in Latium, entitled *Bouwen in Latium in de archaische periode*. Followed by Danny Gerrets who defended his thesis on December 16 on the Roman and Early Medieval period in the coastal area of the northern Netherlands (*Op de grens van land en water*), and just before Christmas, on 23 December, Margriet Haagsma defended her thesis on *Domestic Economy and Social Organization in New Halos*.

A number of large projects received NWO funding in 2010. These include 'Rural life in protohistoric Italy' (supervised by Martijn van Leusen) and 'The people and the state. Material culture, social structure and political centralization in central Italy (800–450 BC)' (supervised by Peter Attema and Bert Nijboer). Two projects on Dutch archaeology also received grants from the NWO-Odyssee programme, which aims to publish the findings from key sites that have been left to gather dust in the cupboard. These projects are Annet Nieuwhof's 'The features of Ezinge' on the famous Groningen terp-mound and Marcel Niekus's 'Between Appearance and Reality' on the Late Mesolithic site of Bergumermeer.

In November three international peers, Martin Bell (University of Exeter), Noel Broadbent (Smithsonian) and Jeroen Poblome (Leuven University), assessed GIA research in the period of 2003–2009. On the basis of self-study, nine key publications and a two-day site visit, they concluded that GIA research is very strong. The assessment, which uses a five-point scale, focuses on quality, productivity, relevance and vitality. All aspects of GIA research were considered 'very good', which translates to a 4. We hope that the assessment report will help us to develop our research further in coming years.

Daan Raemaekers  
Director

## **1. GRONINGEN INSTITUTE OF ARCHAEOLOGY**

The Groningen Institute of Archaeology (GIA) was established on 23 November 1995. Before 1995, archaeological research within the Faculty of Arts had been organised into four separate departments: the Biologisch-Archaeologisch Instituut, the Department of Classical Archaeology, the Department of Languages and Cultures of the Near East, and the Arctic Centre.

### **1.1. INSTITUTIONAL EMBEDDING**

The Groningen Institute of Archaeology is a research institute within the Faculty of Arts of the University of Groningen, and is responsible for all archaeological research within the University. Nationally, GIA is associated with ARCHON, the Dutch research institute, which comprises archaeology departments at five universities (University of Amsterdam, Vrije Universiteit Amsterdam, University of Groningen, University of Leiden, Radboud University Nijmegen), and RACM (= Dutch National Service for Archaeology, Cultural Landscape and Built Heritage) at Amersfoort.

Within the University of Groningen, GIA is associated with the Centre for Isotope Research (CIR), the Department of Molecular Biology of Plants (MBP), the Centre for Ecological and Environmental and Evolutionary Studies (CEES), the Department of Cultural Geography, and other research groups in the Department of Biology and the Faculty of Spatial Sciences.

### **1.2. PROFILE**

GIA engages in fundamental archaeological research with a strong ecological component in the Northwest European, Mediterranean and the Polar Regions. Operating within the Faculty of Arts, it undertakes all the ecological-archaeological and cultural-archaeological research that is carried out by the University of Groningen. GIA stimulates and integrates fundamental research on past human societies and their environments, from the level of Palaeolithic hunter-gatherers to that of complex urban societies. The Institute facilitates research and archaeological fieldwork through its laboratories, drawing facilities, documentation, GIS, and technical support. In addition, GIA co-ordinates the PhD student training programme and stimulates the dissemination of knowledge and culture to society at large.

### 1.3. STAFF

#### Director

Prof. D.C.M. Raemaekers

#### Advisory Board

Prof. P.A.J. Attema

Dr M.C. Galestin

F. Kruse M.Sc.

Dr P.M. van Leusen

Dr W. Prummel

#### Management Team

Prof. P.A.J. Attema

Prof. R.T.J. Cappers

Prof. L. Hacquebord

Prof. D.C.M. Raemaekers

#### Members

Dr S. Arnoldussen

Prof. P.A.J. Attema

Dr D. Avango

Dr J.M. Bos

Prof. R.T.J. Cappers

Dr M.C. Galestin

Prof. H.A. Groenendijk

Prof. A.L. van Gijn

Prof. L. Hacquebord

Prof. A.F.L. van Holk

Dr P.M. van Leusen

Dr A.J. Nijboer

Dr J.H.M. Peeters

Dr W. Prummel

Prof. D.C.M. Raemaekers

Dr D. Stapert

Dr F. Steenhuisen

Dr S. Voutsaki

#### Post-doc

Dr B. Belelli Marchesini

Dr M.J.J.E. Loonen

Dr J.A.W. Nicolay

#### PhD Students

Y.I. Aalders MA

S.M. Beckerman MA

Drs U.I. Gustafsson

Drs H.R. de Haas

Drs T.C.A. de Haas

Q. Hao MA

G.M. Klein Goldewijk MA

Drs M.E. van Kruining

F. Kruse M.Sc.

Drs T. van Loon

S.G. Matthews MA

Drs W. de Neef

Drs A. Nieuwhof

G.R. Nobles M.Sc.

M.L. Ratliff MA

R.M. Roura M.Phil.

M. Schepers MA

Drs T.K. Terpstra

J.G.M. Thilderqvist MA

Drs C.W. Wiersma

Drs S.L. Willemsen

Drs I. Woltinge

#### Support Staff

S.E. Boersma L. Tol

E. Bolhuis Ing. H. Woldring

Drs J.B. Boschman

O. Dolnik

M.M. Hazenhoek

T.P. Jacobs

R.J. Kusters

M.A. Los-Weijns

N.D. Maring-Van der Pers BA

Drs G.J.M. van Oortmerssen

R.M. Palfenier-Vegter

K. van der Ploeg

Drs C. Sandström

Dr A.J.M. Scheepstra

S. Tiebackx

**1.4. FINANCES****Revenue direct funding 2010**

<b>Projects</b>	<b>Staff</b>	<b>Exploit.</b>
UMCG / FEZ		1.300
Stichting Thes		1.500
St. Huisv. Horus & Mehen		1.000
Digitale Zadenatlas	12.000	5.300
Gemeente Groningen	7.000	
St. Nederlands Museum		5.000
Willem Barendsz Stichting	3.600	
ARC	8.000	
	<hr/>	
	30.600	14.100
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**Revenue indirect funding 2010**

<b>Projects</b>	
Shifting Ident. South. Greece	81.100
Hidden Landscapes	2.500
Int. Polar Year - Large scale	2.700
Int. Polar Year - Health of Artic	1.100
Green Harbor Spitsbergen	36.100
Nespico Spitsbergen	28.700
Birdhealth Artic/Antartic	2.000
Lashipa 2	2.000
Levenstandaard Romeinse Rijk	36.000
Early 20 <sup>th</sup> century Whaling Industry	46.500
Defening the Ritual, Analyzing	43.800
The People and the State	89.800
Terpenproject Steilkanten	17.500
AMAP	131.400
Region. Develop. Arch. Landscapes	10.000
The Middle Helladic Tumulus	3.700
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	534.900
	<hr/> <hr/>



## 2. RESEARCH RESULTS

### GIA 2010-2015: Dynamics in cultural landscapes and social organisation

The research of the Groningen Institute of Archaeology (GIA) focuses on the dynamics in cultural landscapes and social organisation on the basis of its high-quality fieldwork, in which research methods themselves are also a topic of research. GIA has in-house facilities for botanical and zoological research, and GIS and material culture labs. The aim of the GIA research programme *Dynamics in cultural landscapes and social organisation* is to carry out internationally significant research on site and at a regional level, and to combine cultural and ecological archaeological approaches that aim to provide a new understanding of past societies in the Mediterranean, the Polar Regions and Northwestern Europe.

#### 2.1. PREHISTORIC AND PROTOHISTORIC ARCHAEOLOGY OF NORTH-WEST EUROPE

The interaction between man and environment is the focal point of GIA research in the period of 2010–2015. This general issue is studied within two interrelated research fields. The first is *the long-term development of cultural landscapes*, in which the research on early prehistory focuses on the IJssel-Vecht river system, while the research on the later prehistory and protohistory is carried out in the terp-mound area of the Northern Netherlands. The second research field is that of *economic landscapes*, in which the exploitation of the environment is studied within a long-term framework from Mesolithic interference in natural landscapes, via hoe cultivation (Swifterbant) and *Celtic Fields* to horticulture in the terp-mound area. In both fields research is carried out at both the site level and at regional and supra-regional levels.

The research group Prehistoric and Protohistoric Archaeology has six research fields:

1. The development of cultural landscapes
2. Stone Age society: pattern and process
3. Material Culture Studies
4. Maritime Archaeology
5. Archaeological heritage management
6. Other projects

##### 2.1.1. The development of cultural landscapes

###### ***Celtic field research*** (S. Arnoldussen)

Fieldwork began this year at the Celtic Field of Zeijen. Seven test trenches in both Celtic field walls and plots were opened up and samples for geochemical, palynological, palaeobotanical and archaeological analyses were taken. The AMS and OSL samples taken should allow us to determine the Celtic Field's use history and phasing, which is presently not accurately dated. Various results are still pending, but from the geochemical studies and pilot studies on the charred plant remains it has become clear that the traditional model of intensified agricultural use over time is not substantiated by the data.

###### ***Barrow studies*** (S. Arnoldussen & H.A. Groenendijk (GIA/Provincie Groningen))

In March 2010 fieldwork was undertaken at Opende to investigate a suspected barrow location. Since 1989, the notable local barrow-shaped morphology has triggered archaeological curiosity. As contemporary land-use presented a potential threat to its preservation, a coring campaign was executed and test trenches were dug to ascertain the genesis of the location. The protrusion turned out to be of natural origin and the established land-use strategies could therefore be continued.

###### ***Excavation of a terp site at Jelsum*** (J.A.W. Nicolay & M. Schepers)

In the summer of 2010 a 100 m long section through the *terp* site of Jelsum, in the province of Friesland, was cleaned and documented. Most features comprise habitation layers, dating from the Iron Age to the early medieval period. Some spectacular finds were a Roman-period agricultural layer, wooden posts from

one or two Roman-period buildings and some ritual deposits, including the skull of a child.

The first archaeobotanical results look promising with relation to modelling the former landscape and diet. Conspicuous plants include hemp (*Cannabis sativa*) and emmer wheat (*Triticum turgidum* ssp. *dicoccon*). As emmer was also found at Achlum and Goutum, the impression is that wheat seems to be fairly common in this region, although on a much more modest scale than barley. Emmer wheat is most probably underrepresented in the record due to the sampling procedure. The local cultivation of this wheat in the *terpen* region is considered problematic because of the salinity of the soil and incidental flooding. The above-mentioned results from dung samples support the necessity of a re-evaluation of both the composition and exploitation of the former landscape.

### ***The remains of rituals in the coastal area of the northern Netherlands (A. Nieuwhof)***

Research on the remains of rituals and on funerary rites in the *terp* area of the northern Netherlands was continued. Inventories of such finds were made this year based on the published and unpublished results of the GIA excavations in Ezinge and Paddepoel. This produced a large number of find assemblages that may be considered the remains of rituals. The results will be discussed and published in the forthcoming PhD dissertation.

### ***Archaeozoology in the terpen area (W. Prummel, A.G.J. Hullegie, E.E. Scheele, T.A. Douma & N.F. Kruithof)***

The animal remains from three *terpen*, Achlum, Leeuwarden-Oldehoofsterkerkhof and Peins, and of a ditch belonging to the late medieval monastery of Heveskesklooster were studied with the help of three postgraduate students (Hullegie: Achlum; Douma: Peins; Kruithof: Heveskesklooster), who used the results for their Master's theses, and of an undergraduate student (Scheele: Leeuwarden-Oldehoofsterkerkhof).

The animal remains from the *terp* of Achlum date to the Iron Age, the Roman period, the Merovingian period, the Carolingian period, the Ottonian period and the Late Middle Ages. Both hand-collected and sieved material was studied. The majority of the animal remains are of domestic mammals, which stresses the importance of animal husbandry at the *terp* in all habitation periods. The livestock consisted almost entirely of cattle during the Iron Age (according to numbers of remains). Sheep increased and cattle decreased in numbers during the Roman period. Sheep husbandry rather than cattle husbandry dominated during the Merovingian, Carolingian and Ottonian periods. Cattle husbandry dominated again in the Late Middle Ages. The same pattern in the livestock composition was seen at other Frisian and Groningen *terpen*, for instance in Wierum, Englum, Leeuwarden-Oldehoofsterkerkhof, Birdaard-Roomschotel, Anjum-Schanskerweg, Wijnaldum-Tjitsma and Dongjum. The increase and dominance of sheep husbandry in the Roman and early medieval periods will have been due to economic reasons, i.e. there were good opportunities to sell wool and perhaps skins. The dominance of cattle husbandry during the Late Middle Ages will mainly have been due to ecological reasons, i.e. the then completely freshwater environment was less suitable for sheep. Several skulls belonging to polled cattle were found in Roman period features in Achlum. Polled cattle are only found in Roman period contexts in the Netherlands. One of the polled cattle skulls had small bony protrusions, known as scurs, at the location of the horns. The polled condition and scurs are both rather rare mutations. This polled skull with scurs was found covered by a cattle scapulae, and another cattle scapula and a horse scapula were next to it. Together they formed a 'special find'. Another 'special find' is the partial skeleton of a late medieval (AD 1100–1300/1400) foetal lamb tied to a grass sod and found in a ditch. One of the few wild mammal bones is the fifteenth vertebra of a sperm whale (*Physeter macrocephalus*) from the Late Middle Ages that has two holes and several cut marks suggesting it might have been a loom weight.

The fish remains found in the sieved samples suggest that fishing was of some importance in Achlum. Like in other *terpen*, flounder/plaice/dab (Pleuronectidae) and eel (*Anguilla anguilla*) were the fish species most commonly eaten. Herring (*Clupea harengus*) remains are quite numerous in the Carolingian period.

The animal remains from the *terp* of Peins mainly come from the Roman period; a few date to the Migration Period and the Early and Late Middle Ages. Cattle and sheep were the most important domestic animals in the Roman period. A substantial number of the cattle bones are of neonatal or very young calves, suggesting that calves died or were killed shortly after birth. Hardly any sheep were killed or died as such young animals. This pattern is also found at other *terpen*, such as Achlum, and may be connected with cattle milk production. The skull of a polled cow was found in the Roman period material. A very interesting discovery is a stamp made from a piece of red deer (*Cervus elaphus*) antler. The stamp itself is

6 by 7 millimetres and is divided into nine little squares. This type of stamp was used to decorate the early types of ceramics called *kogelpotaardewerk* in Dutch (8<sup>th</sup>–9<sup>th</sup> centuries AD).

The remains from the *terp* of Leeuwarden–Oldehoofsterkerkhof mainly consist of the remains of domestic mammals. Cattle and sheep were the most important animals. As at most other *terpen*, sheep husbandry became more important from the Roman period (28%) to the Early Middle Ages (37%). A skull fragment of a polled cow was found in a Roman period feature. Whereas hardly any bird and fish bones have been found in the Roman period, they are quite numerous in the early medieval features, suggesting that fowling and fishing became more important in the Early Middle Ages. Chicken breeding was still rare in the Roman period but became more important in the Early Middle Ages at this site. The bone of a whale was found in an early medieval feature.

The animal remains from the monastery of Heveskesklooster show that marine fish constituted quite a high proportion of the monks' diet during the Late Middle Ages. The fish species often consumed were cod (*Gadus morhua*), thornback (*Raja clavata*), flounder/plaice/dab (Pleuronectidae), eel (*Anguilla anguilla*), salmon/sea trout (*Salmo salar*/*S. trutta* carp), (*Cyprinus carpio*) and other native carp (Cyprinidae) and perch (*Perca fluviatilis*).

***The use of the landscape for animal husbandry, hunting and fishing at the terp site of Wijnaldum-Tjitsma (province of Friesland) - a short Odyssey project of NWO (W. Prummel, J.T. Zeiler & E. Esser)***

This *terp* was inhabited during the Roman period, the Migration period, the Merovingian period, the Carolingian period and the Ottonian period. A hiatus in the occupation occurred between the Roman period and the Migration period. Archaeological findings suggest that especially during the Merovingian period and to a lesser extent the Carolingian period the inhabitants of the *terp* belonged to an elite that had contacts along the North Sea coast.

Sheep husbandry was more important than cattle husbandry in all periods but especially during the Early Middle Ages. In this respect, the animal husbandry follows the general pattern of the *terpen* animal husbandry. The sheep and cattle age data show that sheep were mainly kept for wool and meat production and cattle for milk and meat production. Wild mammal remains, among them a substantial number of marine mammal remains, are more numerous than in other *terpen*.

The site proved to be much richer in bird and fish bones than any of the other *terpen*, even those where wet sieving was done. Dabbling ducks of the genus *Anas* and waders were the most hunted birds, and of the waders godwits (*Limosa* sp.), ruff (*Philomachus pugnax*), plovers (*Pluvialis* sp.) and small waders (*Calidris* sp.) were hunted most. Geese (*Anser* sp.) and swans (*Cygnus* sp.) were fowled in small numbers, as were other birds such as a diver species, the common crane (*Grus grus*), the white-tailed eagle (*Haliaeetus albicilla*), the short-eared owl (*Asio flammeus*) and the skylark (*Alauda arvensis*). Whereas the duck bones exceed the wader bones by far in most periods, more wader than duck bones were found in the Carolingian period. Wader bones are quite numerous in the Ottonian period as well. Since there are no indications for changes in the biotope, it is concluded that a better tool for catching waders, presumably a type of net, was introduced during the Carolingian period. Chicken husbandry was rather intense during the Roman period, but had to be established again from the Migration period onwards.

In all periods, the fish consumed most often were flounder/plaice/dab (Pleuronectidae) and eel (*Anguilla anguilla*). Other marine fish and migratory fish were caught in smaller numbers. Cyprinidae, which are freshwater fish, were regularly caught, but not in the Ottonian period. The proportion of eel bones, which varies between 23% and 35% in the periods before the Ottonian period, is only 15% in the Ottonian period. The decrease in the numbers of eel bones and the absence of the bones of freshwater fish in the Ottonian period suggest a change in the ecology near the *terp*: the local part of the Wadden Sea probably received less freshwater during this phase.

The bone and antler tools from the site show a change from the Roman period until the Migration and later periods. Whereas amulets were much used in the Roman period, antler and bone combs, pins and bone skates were absent in this period. They arrived at the *terp* with the new immigrants. Textile and skin-working tools were especially common in the Merovingian and Carolingian periods, when sheep husbandry was at its height. A tuning pin from the Merovingian or Carolingian period, a jewellery or make-up box from the Carolingian period and spoons from the Merovingian periods constitute rare finds in other *terpen* or are completely lacking there.

The conclusion of this study is that the *terp* is much richer than other *terpen* in various aspects: hunting wild mammals was more common, more birds and fish were consumed and some of the bone and antler tools only occur at this *terp*. This may be an indication of elite inhabitants. The animal husbandry,

however, was largely the same as at other *terpen*.

***Archaeobotany in the terpen area*** (M. Schepers, R.T.J. Cappers, A. Maurer & S. Kaaijk)

Archaeobotanical samples from a number of different *terp* sites were studied in order to re-evaluate the former landscape in general and the impact of man in particular. From Achlum, dried-out flotation samples and two very rich dung samples were studied. The study of the dung samples in particular produced noteworthy results. The present day outer dyke salt marsh system as the classic analogue for the '*terpen* landscape' does not appear to represent the whole story. Traditionally, a division of the species list is made according to the salt marsh zonation, but for the dung samples from Achlum this left the greater part of the species list unexplained. Generally, the leftover species are labelled as 'plants from nitrogen rich places', 'disturbed soil' or 'field weeds'. The image that emerges from the Achlum dung samples, however, is that of a landscape where a grazing area of freshwater grasslands was also present. The species richness suggests that we are dealing with moderate grazing. The macro remains from the flotation samples of Achlum indicate that at least some of the plant species, generally labelled as 'higher salt marsh species' instead of 'field weeds', also grew in the barley fields. This is in accordance with the assumption that the cultivation of cereals was performed on or adjacent to the higher salt marsh.

Archaeobotanical research was carried out on flotation samples from the *terp* site of Anjum, and these comprised samples dated both before and after the construction of dykes. Plant remains are indicative of a desalinization of the environment, which clearly illustrates the impact on the hinterland of the dyke construction.

In cooperation with the ARC, research was carried out on samples from the *terp* site of Goutum (with Out and Kaaijk). At this site, a sample from a habitation layer was compared with a sample from a vegetation layer preserved in situ under the *terp*. Surprisingly, the vegetation layer held the most cultivated species, proving that plant cultivation must have been carried out in the region prior to the erection of the excavated mound.

### **2.1.2. Stone Age society: pattern and process**

***The North-Holland Single Grave Culture project*** (S.M. Beckerman & G.R. Nobles)

This project is part of a wider NWO Odyssee project which involves the assessment of three Single Grave Culture (c. 2400–2800 BC) settlement sites in the province of North Holland, the Netherlands. The immediate landscape of this area is a brackish salt/freshwater intertidal environment. Very little is known from a settlement context for this period; the majority of our knowledge is from the flat graves and burial monuments. These add very little to the interpretation of everyday life. The project is investigating the settlements of Keinsmerbrug, Mienakker and Zeewijk within a multidisciplinary framework. The PhD on spatial analysis (Nobles) aims to investigate what further knowledge can be obtained by combining various disciplines in a geographical context.

The aim of the PhD project on ceramics (Beckerman) is to obtain a better understanding of the role and function of vessels in settlement contexts, but also, together with the other researchers on this project, to deepen our understanding of these societies as a whole. In 2010 the ceramics from two Single Grave settlement sites were studied and the analysis of the pottery from the Keinsmerbrug site was completed. A chapter was submitted for publication in a site monograph. The pottery from the Mienakker site has been analysed and will be further studied and described.

***Scaling in spatial patterns of find distributions*** (J.H.M. Peeters)

A deeper understanding of spatiotemporal patterns in find distributions is vital for the development of models of past human behaviour. The post-depositional transformation of initial distribution patterns of materials often makes their interpretation difficult, especially when mixing, merging and blurring of initial patterns has occurred due to repeated occupation (creating so-called "palimpsests"). Nevertheless, it is necessary to analyze of palimpsests, as these compound patterns represent the majority of all archaeological sites recorded.

The present research investigates patterns in find distributions (initially resulting from hunter-gatherer activity) from a new perspective. The goal is not to identify distinct activity areas. Instead, the aim is to develop an understanding of the generative rules that stand at the basis of pattern formation. Archaeological find distributions are regarded the result of a growth system. One of the premises is that hunter-gatherer behaviour is structured; that various behaviours demonstrate a characteristic pattern (e.g.

quantity of material, spatial extent/distribution); and that a signature or fingerprint of such a pattern will survive even in palimpsest distributions.

The analysis of a number of Mesolithic and Early Neolithic sites from the Netherlands (Hoge Vaart, Merselo, Zutphen-Looërenk) generated some first results. Most likely, there is a strong relationship between the size of clusters of materials and the amount of material in those clusters. This specifically applies to small (single occupation?) and extended (palimpsests) find distributions. The relationships indicate the existence of a (power-law) scaling principle, which characterizes many complex growth systems. Further analysis will be conducted to underpin the possibility of scaling in find distributions. If scaling can be demonstrated, this characteristic can be of great help to identify the underlying generative rules of the formation of spatial patterns. In addition, further research may encourage the development of a new approach to sampling in archaeological fieldwork.

***The Swifterbant project*** (D.C.M. Raemaekers, M. Schepers, R.T.J. Cappers, and students)

Six postgraduate students analyzed the available archaeological material from the Schokkerhaven-E170 site, which is located on the Swifterbant creek system in the southern part of the Noordoostpolder. The Neolithic finds are attributed to Swifterbant and pre-Drouwen TRB (Raemaekers *et al.*, 2010). The fieldwork at Swifterbant continued at S25, located in the clayey sediments between 'Doug's dune' and the creek discovered in 2008. The four trenches yielded evidence of a swift change in material culture around 4000 cal. BC, provisionally connected to the change from Swifterbant to pre-Drouwen TRB. The trenches allowed detailed ecological sampling for Schepers' PhD on landscape development and exploitation of the Swifterbant region. In cooperation with Wageningen University, plant community identification software is under development, which aims to come up with a statistically more reliable and more detailed reconstruction of plant communities that must have been present around the Swifterbant settlements in prehistoric times.

***Palaeolithic*** (D. Stapert, M.J.L.Th. Niekus & L. Johansen (Haren))

Several Middle Palaeolithic sites and collections were studied, including Corversbos-Hilversum (see article in *Paleo-aktueel* 21), Vlieland, and Texel. Work was done on the material from the site of Mauern in Germany, together with I. Woltinge and others. Six bone retouchers were studied in particular, and radiocarbon dating was carried out (see article in *Paleo-aktueel* 21). Research was also conducted with L. Johansen on the flintknapping work of children in the Palaeolithic.

***The Middle Palaeolithic in the northern Netherlands*** (M.J.L.Th Niekus & D. Stapert)

In 2010 dozens of field surveys were undertaken in the provinces of Drenthe and Overijssel with the help of students (of both the GIA and Leiden University), amateur archaeologists and colleagues. At the Neanderthal camp in Drenthe, which was discovered three years ago, ten new Middle Palaeolithic artefacts were found including several handaxes belonging to the *Moustérien de Tradition Acheuléenne, type A* (50,000–100,000 years old). The site is currently interpreted as a Late Neanderthal hunting stand. An interim report on the site and other finds was published in the *Nieuwe Drentse Volksalmanak* (volume 127). Geological research was undertaken in close cooperation with the Department of Earth Sciences of the VU University Amsterdam, the results of which will be published in the near future.

### **2.1.3. Material Culture Studies**

***Kings of the North Sea (VENI-research)*** (J.A.W. Nicolay)

In December 2010 the NWO-funded research project 'Kings of the North Sea. The development of kingship in West-Germanic societies during the Dark Ages (5<sup>th</sup>–7<sup>th</sup> century)' was completed (to be published in 2011). In early medieval times kings distributed valuable items, often made of gold and silver, among members of their retinue as personal gifts. Studying the production, distribution and deposition of these gifts made it possible to reconstruct the development of several regional and supraregional kingdoms in the southern North Sea area – an area that is usually left out of the discussion about post-Roman power formation. Regional kingdoms first become visible in the fifth and sixth centuries, the most powerful kingdoms developing into supra-regional confederations during the late 6<sup>th</sup> and early 7<sup>th</sup> century. The 7<sup>th</sup> century is then characterized by a period of stabilization of power positions, and the Netherlands and northern Germany were gradually incorporated into the Frankish-Carolingian kingdom from the late 7<sup>th</sup> century.

***Flint artefacts found in wierden in the province of Groningen*** (A. Nieuwhof, D. Stapert & I. Woltinge)

In many *wierden* in the province of Groningen, flint artefacts or pseudo-artefacts have been found. These artefacts must have been imported from elsewhere, and may only rarely have been used as tools by the pre-Roman and Roman Iron Age population of the coastal area. In this research project, flints found during excavations in *wierden* in the province of Groningen and deriving from closed contexts are being studied and described, in order to establish their use and origin.

**2.1.4. Maritime Archaeology**

***Maritime archaeology in Flevoland*** (Students K. Blok, J. Verweij, H. van Westing, A. Immink & A.F.L. van Holk)

One type of ship, the so-called watership, was researched in particular. An NWO-Odyssee project about waterships will be completed in the spring of 2011 with four publications on several excavations and the inventories of waterships, as well as a database. As 40 vessels of this type have been located in Flevoland, a study was conducted concerning the development ages of the form and construction of this ship type. The excavation of the cog at lot NM 107 will be published by Blok. He also made a cardboard reconstruction of the hull form of the vessel excavated at lot OH 41.

***Dutch clinker-built ships in the 15<sup>th</sup> and 16<sup>th</sup> centuries*** (A.B.M. Overmeer)

This PhD research deals with seven late medieval clinker-built ships found in the Netherlands. They show characteristics found in the three medieval shipbuilding traditions of Scandinavia, the Baltic and the Dutch IJsselmeer polders, but none of these ships can be classified under a single tradition. The research attempts to allocate the Dutch clinker-built ships, with their deviant features, to the medieval shipbuilding traditions of Europe, in order to provide an understanding of developments in interregional trade and shipbuilding in this period. In addition, work was done on the ship hydrostatics of U 34, such as the main dimensions, displacement, volume of the hold, cargo capacity, shape of the hull, etc. Other clinker-built shipwrecks were also examined. An excavation report of shipwreck B 36 in the Noordoostpolder (Netherlands) is in progress. With the other ships, the provenance of the timber and timber importing in the Late Middle Ages was the main focus. Finally, some literature research was conducted on the political and economic changes in the Zuiderzee region in the 15<sup>th</sup> and 16<sup>th</sup> century. The result will be a dissertation in 2011.

**2.1.5. Archaeological heritage management**

***Website of the GIA archaeozoological reference collection*** (J.T. van Gent, R.J. Kusters, T.P. Jacobs & W. Prummel)

The website that provides access to the database of the GIA archaeozoological reference collection was integrated into the GIA website in 2010 (<http://www.rug.nl/let/archaeozoology>). The reference collection now contains nearly 4,500 skeletons of mammals, birds and fish, and species from northwestern Europe, the Mediterranean area and Southwest Asia. There is a collection of over 250 mollusc species from the Netherlands and Greece, as well as a modest collection of reptile and amphibian skeletons. Users can search the database to see which species and which individual skeletons the reference collection possesses. The first photographs of bones in the reference collection have been added to the database.

***Archaeological indicators in Southern Flevoland*** (I. Woltinge)

The research into the archaeology of the buried landscape of Southern Flevoland is mainly based on the presence or absence of archaeological indicators in core residues. After completing research into the 'false positives' (*i.e.* natural pieces that have been determined to be archaeological artefacts), work has started on the 'false negatives' (*i.e.* archaeological pieces that have been determined to be natural). The research so far has shown that the emphasis on archaeological remains in coring residues should shift from traditional indicators to less obvious secondary ones and, more importantly, to the combinations of these indicators present in residues. This research is part of Woltinge's PhD project, named *What lies beneath: the value of buried Stone Age landscapes*.

### **Old Tidal Deposits** (*I. Woltinge*)

Research into the archaeological relevance of Old Tidal Deposits (OTD) in the Almere region has resulted in a first draft of a chapter on this subject. The OTD here show great similarities to those in the Swifterbant area, making a search for archaeological remains in this area necessary. The traditional forms of prospection research do not work in these regions, as the differential lithological matrix here is absent. The research has looked for other characteristics within these deposits on the basis of which the relevance for archaeological research can be established. From the research of contour maps and fieldwork the first conclusions are that OTD are quite well-defined on contour maps and more readily detected in the field than previously assumed. They can be distinguished from other sediments by their ripening, firmness and, sometimes, calcareousness. This research is part of Woltinge's PhD project, named *What lies beneath: the value of buried Stone Age landscapes*.

### **2.1.6. Other projects**

#### **Fayum project** (*R.T.J. Cappers, W.Z. Wendrich (UCLA) & S. Holdaway (University of Auckland)*)

During the 2010 season the excavation of Karanis continued in the eastern part of the city. Trenches were laid out in houses, streets and granaries. Archaeobotanical research concentrated on the study of mud bricks and rubbish deposits in particular. The archaeobotanical research is aimed at reconstructing (1) the changes in agricultural practices and (2) the former food diet based on energy levels rather than just seed counts. Special emphasis is laid on the reconstruction of pathways of plant material in particular archaeological contexts.

A first typology of mud bricks has been made based on size, volume, colour and composition. This typology will be used to analyze the logistics of the house building in relation to spatial distribution and the economy. A model has been developed making it possible to link the amount of threshing remains in architecture to the size of a cereal field, producing these quantities of temper.

The analysis of threshing deposits focuses on the processes of mixing, contamination and reduction. It has been shown that organic material in samples containing charred material is less vulnerable to, for example, rodent activity. This makes it possible to use the proportion of plant remains in these samples for estimating the reduction of particular species in samples containing only desiccated material. Feeding experiments with mice and rats have been started to improve the recognition of reduction processes. For example, the reduction of date palm seeds could be established by recognizing the central axis, being the only leftovers. This kind of analysis will make it possible to upgrade the archaeobotanical record retrieved from samples processed in the field.

Wood analysis has shown that construction wood is mainly obtained from olive, acacia and date palm trees, part of the local vegetation. In addition to square beams used as girders, branches of a lower quality have been used frequently. Wooden objects, on the other hand, show much more variety in wood species and include exotic plants as well.

Traditional agricultural practices have been documented in photos and films and will be available as part of the 'Digital atlas of traditional agricultural practices'.

Research on the Predynastic Phase focuses on the problem of the relatively late introduction of agriculture in Egypt. An article that presents an explanation in relation to the changing rainfall was recently accepted for publication in the *LAC Quaternary International* journal.

## **2.2. MEDITERRANEAN ARCHAEOLOGY**

In the period 2010–2015 the Mediterranean archaeologists will build on their expertise in the archaeology of prehistoric and protohistoric societies of Greece and Italy, the interaction of cultures in the context of Greek colonization and Roman expansion, urban life in Hellenistic Greece and the economy in Roman Italy. The research programme consists of interdisciplinary projects that combine social, economic, ecological and methodological aspects of the study of past society, and thereby continues GIA's strong tradition in Mediterranean fieldwork and artefact studies. In addition, a new research topic has been added, the study of attitudes to the past in the modern world.

The research group Mediterranean Archaeology has six research fields:

1. Landscape, ritual and society in protohistoric and Roman Italy
2. Social and cultural change in prehistoric Greece
3. Urban life in Hellenistic Greece
4. Economy and living standards in the Roman World
5. Interaction in the margins of the Graeco-Roman World
6. The classical past in the present

### **2.2.1. Landscape, ritual and society in protohistoric and Roman Italy**

#### ***Regional Pathways to Complexity* (P.A.J. Attema, G.-J.M Burgers & P.M. van Leusen)**

The monograph *Regional Pathways to Complexity* resulting from the homonymous NWO project was edited and submitted to the Amsterdam University Press. During the year much time was spent editing the figures and captions, copy-editing the text, and adding and editing an index, all of which was completed by the end of the year. The volume was preceded by four dissertations in 2002, 2003 and 2005, and a volume with the proceedings of a congress dedicated to the RPC in 2002. The publishing of the book, which took place early 2011, but was dated 2010, constitutes the formal end of the RPC project.

#### ***Crustumarium Project (central Italy)* (P.A.J. Attema, A.J. Nijboer, B. Beelli Marchesini & S.L. Willemsen)**

In July NWO awarded a grant of K€ 600 to the project 'The people and the state. Material culture, social structure and political centralization in central Italy (800–450 BC); the case of Crustumarium'. This project will run for the period 2010–2015 and is supervised by Peter Attema and Bert Nijboer. Apart from a materials budget, there were also funds to appoint two more researchers for the study on Crustumarium. As post-doc we appointed Dr B. Beelli Marchesini for the study and publication of tombs excavated at Crustumarium by the SSBAR (Soprintendenza Speciale per i Beni Archeologici di Roma). She will examine the cemeteries of Crustumarium (800–450 BC) as part of a social and artefact-based analysis (part-time postdoc position at the GIA, 2010–2014). As PhD student we selected Drs J. Seubers, to be appointed from February 1st, 2011, for research on the settlement and territory of Crustumarium. He will examine the settlement archaeology and early state formation in central Italy (800–450 BC) (PhD position at the GIA, 2010–2014). For further information visit the GIA Current Research Webpages.

Nijboer and Willemsen wrote an article which discusses three female tombs that stand out when compared with other contemporaneous tombs excavated by the GIA in 2007–2008 at Crustumarium. These three tombs have much in common not only in terms of time but also in terms of content and location. The article describes the burial and funerary rituals for each tomb and elaborates on the social status of the women, as expressed by the artefacts with which they were interred. It is suggested that the women buried in tombs 71, 76 and 232 were mistresses of a main household in Crustumarium. In 2010 restoring and fully documenting the tombs GIA has excavated in recent years for future publications was continued. Nijboer and Attema wrote an article for the Classical Archaeological Association (AIAC). This English article was the result of an earlier congress. An article in Italian for the *Bollettino Comunale* (Rome) was also written. In 2010 a specialist workshop on 'Current research into Pre-Roman burial grounds in Italy' was organised to be held on 9–10 February 2011.



In GIA's 2010 Crustumarium fieldwork campaign (24 June–1 August) we worked on the excavation of eleven tombs, seven of which have now been fully investigated. The excavation of the remaining four will be completed in 2011. The tombs, located just outside the settlement along its defensive structure, have been provisionally dated between 650 and 575 BC. Unfortunately, this area of the Monte Del Bufalo necropolis has been severely damaged as a result of heavy ploughing in the past century. In several instances, only the last 10 to 15 cm of a tomb has been preserved, causing a bias in our investigation. However, other deeper tombs have surfaced as well, and these have provided us with a lot of information regarding the funerary ritual.

One of the tombs investigated was T283, which had a four-metre deep shaft and is thus the deepest tomb excavated so far at Crustumarium. It is a monumental grave with a lateral niche at the bottom of the shaft, intended for holding the deposition. This loculus was closed off with three monumental tuff slabs of about 0.8 x 1.0 m. So far, 84 artefacts pertaining to an elaborate funerary banquet have been recovered. We plan to finish excavating this tomb in 2011.

Another interesting area of our 2010 excavation is a small cluster of three tombs that intersect and cut into each other (T286, T287 and T288). Apparently, two adjacent tombs, one with an apsidal niche and one with a lateral depositional niche, have been cut into by the dromos of a (later) chamber tomb. The reason for the intensive use of this plot in an otherwise relatively open area remains to be investigated.

The picture that emerges from the tombs excavated in the area under study is far from unequivocal. Whereas some depositions have been adorned with a large number of personal ornaments and accompanied by an elaborate banqueting set, other tombs contain hardly any funerary gifts at all. Monumental, profound tombs with enormous tuff slabs stand out in lurid contrast to superficial graves built from irregularly shaped, reused tuff blocks. The principles behind these differences are the subject of intensive, ongoing study.

The GIA team numbered 24 members in 2010 and included students from the Netherlands, Germany, Finland, England and Italy. As in past years, we worked in close cooperation with the team from the Italian Soprintendenza Speciale per i Beni Archeologici di Roma (SSBAR), which was excavating several tombs in an adjacent area. The excavations of the SSBAR and the GIA will be investigated in a joint research programme in the next 4 to 5 years.

#### PhD Research within the Crustumarium Project

##### *The Iron Age necropolis Monte Del Bufalo at Crustumarium (S.L. Willemsen)*

During a stay in Rome in March, literature was collected for the various chapters of the thesis. The summer of 2010 was spent excavating seven new tombs and continuing the investigation of five tombs which had been opened in previous years. Four tombs will have to be reopened in the 2011 campaign, because the investigation of them has not yet been completed. The excavation data from all the excavation campaigns carried out by the GIA are currently being studied and processed. The database has been elaborated, and is now being shared with our Italian colleague Dr Bellelli Marchesini, who will incorporate data regarding the tombs excavated by the SSBAR. The rest of the year was spent on literature study and writing. Chapter 2 on the research history of Crustumarium has been written and handed in. The methodology regarding the archaeology of death has been elaborated and explained in chapter 3. It was handed in at the beginning of 2011.

##### ***Pontine Region Project (central Italy) (P.A.J. Attema)***

Attema, De Haas and Tol finished editing the monograph *Between Satricum and Antium, Settlement Dynamics in a Coastal Landscape in Latium Vetus*, which will appear in the spring of 2011. The same authors also submitted an article to the peer-reviewed journal *FACTA* entitled 'Investing in the colonia and ager of Antium' (accepted). Attema and De Haas submitted the article 'Rural settlement and population extrapolation: a case study from the ager of Antium, Central Italy (350 BC–AD 400)', to be included in the peer-reviewed book *Settlement, Urbanisation and Population*, edited by the Oxford Roman Economy Group (accepted). Attema, Derks and Tol submitted the paper 'The Carta Archeologica of Nettuno, evidence for late antique and early medieval settlement on the coast of South Lazio near Antium and Torre Astura (Italy)', which was published in the 2010 proceedings of the Late Roman Coarse Ware study group. Attema and Van Leusen obtained a faculty grant for the preparation of an NWO proposal for

the Pontine Region Project 'A New Approach to the Roman Economy'. The proposal was prepared in close collaboration with De Haas and Tol and was submitted at the end of December 2010 (applicants Attema and Van Leusen, postdocs De Haas and Tol). Attema presented a paper on the early Roman colonization of the Pontine Region at an international European Science Foundation workshop in Nijmegen on 'Rome under the Republic', with co-author De Haas. This paper will be elaborated and submitted for peer review in late spring 2011 (with M. Termeer).

#### PhD research within the Pontine Region Project

*The Roman colonization of the Pontine region and its impact on rural settlement and land use (T.C.A. de Haas)*

De Haas worked on the finalization of his PhD. He rewrote chapters 3 to 5, and prepared chapters 6 to 9. He also worked on a number of co-authored publications, including the above-mentioned monograph *Between Satricum and Antium*, the publication and digital archiving of the Džarylgač Survey Project in Crimea and several (peer-reviewed) articles (see above).

*A socio-economic and political landscape archaeology of transition: southern Lazio from the Late Roman period to incastellamento (O.P.N. Satijn)*

Satijn finalized the database of his key research areas in the Roman Campagna and the Pontine region and worked on his main chapter, chapter 8. He submitted a new plan that foresees finishing the manuscript in May 2012.

*The archaeological map of Nettuno; site classification and analysis of a local settlement system (700 BC – 500 AD) in a regional context (G.W. Tol)*

Tol finished processing all archaeological material from the fieldwork carried out for his dissertation. He submitted the first drafts of six chapters (chapter 1 provides an overview of the available historical and archaeological evidence for the study area and chapter 2 introduces the theoretical and methodological background for four case studies presented in chapters 3–6 respectively). Parts of his dissertation research were presented at two expert meetings in Ghent.

***Campoverde project*** (P.A.J. Attema, F. di Mario (Soprintendenza Archeologica per il Lazio), A.J. Nijboer & T. van Loon)

This project has arisen from old and new GIA studies of the finds complex of the nature cult location of Laghetto di Monsignore at Campoverde (Lazio). T. van Loon obtained a NWO-funded PhD position (as of September 2010) on the research proposal 'Defining the Ritual, analyzing Society' (promotor Attema). An agreement was reached with F. di Mario of the Archaeological Service of Lazio to publish the votive material of the sanctuary in a catalogue as a joint publication of GIA and the Archaeological Service of Lazio.

#### PhD research within the Campoverde project

*Defining the Ritual, analyzing Society. The social significance of material culture in pre-Roman cult places of Central Italy (ca. 900 – 400 BC) (T. van Loon)*

Van Loon started work on her dissertation in September 2010, with further work on the ceramics database and preparatory reading for a theoretical introduction to the research. She was on maternity leave as of 15 November.

***The Hidden Landscapes Project (P.M. van Leusen & H.R. Feiken)***

Extended by three months, the Hidden Landscapes Project formally ended in August 2010. The work mostly focused on publications. A catalogue of primary research data for the Monti Lepini was completed at the start of the year and published in *Palaeohistoria*. Van Leusen began preparing a similar but much larger catalogue of sites and finds for the RAP area with P. Attema and others. Van Leusen did editorial work on the 2006 Siena proceedings (with G. Pizziolo) and continued work on an interview with M. Kleibrink, but the intended publications for 2010 were not feasible. With occasional help from T. de Haas and W. de Neef, Van Leusen continued building up the geodatabase to support the research of GIA's Mediterranean archaeologists in Italy. This involved digitizing map data, georeferencing digitized aerial photos, checking and correcting archaeological site data, and generating metadata for the map layers stored on the common Y: Drive. With T. Roovers a mini-geodatabase was set up for the research taking place at Timpone della Motta/Macchiabate, see the International Francavilla project below.

PhD research within the Hidden Landscapes Project

***Geo-archaeological Approaches to the Hidden Landscapes of Italy (H.R. Feiken)***

This project is nearly finished: about 75% of the manuscript has been written and the English is being corrected. As Feiken is now employed at RAAP Consultants, and works only one day a week on the thesis, the manuscript is due to be completed in late 2011.

***Raganello Archaeological Project (P.A.J. Attema & P.M. van Leusen)***

The cataloguing of the ceramics from the protohistoric highland sites of the surveys was finished by F. Ippolito under the supervision of Attema and Van Leusen. F. Ippolito obtained a two-year PhD position to study settlement dynamics of the Sibaritide (as of 1 January 2011). Van Leusen co-wrote funding applications for the continuation of the research collaboration with Leuven University (Dr De Laet).

PhD research within the Raganello Archaeological Project

***Settlement dynamics in the hinterland of the Sibaritide (Calabria, Italy) (F. Ippolito)***

This project started in October 2010 and entails an interpretive study of protohistoric sites recorded in the Raganallo watershed area. Since then the work has concentrated on cataloguing and dating all finds.

***Rural Life in Protohistoric Italy (P.M. van Leusen & W. de Neef)***

A research application under the NWO Free Competition funding scheme, submitted in 2009, was reviewed and successfully defended in early 2010, and a grant of K€ 600 was awarded in early July for a four-year project employing one PhD student (W. de Neef) and one postdoc to study in detail a sample of the small protohistoric sites recorded in southern Italy by the RAP and HL projects. For the post-doc position, geophysicist K.L. Armstrong was employed. So far, only preparatory work has been done and no results can yet be reported.

***The International Francavilla Project (P.A.J. Attema & J. Jacobsen)***

Due to bureaucratic problems the planned excavations under the concession for 2010 could only be partially carried out, and the research concentrated on the Area Rovitti on the lower parts of the slope. Here, remains of a domestic structure dating to the 8<sup>th</sup> century BC were investigated. Part of the ceramic inventory of this structure is characterized by pottery of Greek (Euboean) inspiration and by imports. Two 8<sup>th</sup> century BC phases of occupation of the structure could be established by the team. In the storerooms at Sybaris further work was carried out on the artefacts from the 2008–2009 excavations in the sanctuary on top of the Timpone della Motta and on those from the 2009 excavation in the Area Rovitti. The University of Basel (Prof. M. Guggisberg and team), working under the GIA concession, continued the excavation of tombs in the necropolis of Macchiabate in the area Tomba della Strada. Part of the GIA team concentrated on an intensive survey of a Hellenistic site in the area of Lauropoli under the supervision of Van Leusen and Attema.

PhD research within the International Francavilla Project

*A study of the impasto pottery from the Timpone della Motta di Francavilla Marittima (Calabria, Italy) (C. Colelli)*

The dissertation aims for the full publication of the handmade Iron Age pottery from the settlement of Timpone della Motta. In 2010 the classification of the pottery was completed and the first interpretive chapters were written.

*Subsistence and social stratification in the Sibaritide during the Middle Bronze Age – Early Iron Age (Calabria, Italy) (S. Elevelt)*

On the basis of a comparative study of animal bones from various sites in the Sibaritide, including the Timpone della Motta, a reconstruction of the role of animals in local subsistence strategies is being evaluated. The chapters for this dissertation are due to be completed during the summer of 2011.

*The production of Oinotrian geometric pottery in southern Italy (Calabria, Basilicata and Campania) during the Iron Age (M. Fasanella Masci)*

This dissertation examines the techniques of the production of matt-painted pottery from key sites in the Sibaritide, including Timpone della Motta. To this end, specimens from museum collections are being studied from a technological point of view. The dissertation is still in the data collection phase.

*Hellenistic pottery and Hellenistic sites in the Sibaritide (Calabria, Italy) (N. Oome)*

Many Hellenistic rural sites were recorded in the surveys of the Raganello Project. This dissertation aims to closely study the pottery provenient from these sites in order to classify the sites and to characterize the economic network in which they functioned.

*Archaic terracotta votive offerings from the Athenaion in Francavilla Marittima (Calabria, Italy) (E. Weistra)*

This study examines the iconography and ritual function of archaic terracottas from ritual contexts on the Timpone della Motta at Francavilla Marittima.

***Radiocarbon results and the absolute chronology of Iron Age Italy (A.J. Nijboer, P. Von Eles, (Soprintendenza Archeologica dell'Emilia Romagna), J. Jacobsen (GIA, director excavations Francavilla Marittima)***

Some radiocarbon results became available for the Iron Age at Bologna. These were presented at the 'Riunione Scientifica dell' Istituto Italiano di Preistoria e Protostoria' congress, which was held in Emilia Romagna from 25 to 31 October. The title of the paper is 'La Necropoli villanoviana di Borgo Panigale, via della Salute' (authors: T. Caironi, P. von Eles, A. Mazzeo, A. Nijboer & E. Ziveri). Furthermore, a paper is in preparation on a pre-colonial phase at Francavilla Marittima (c. 800–750 BC) in relation to a context with a relatively large number of imitation Euboean ceramics. These data will hopefully be published in 2010–2011. The radiocarbon results from both sites together with their contexts will be published in 2011–2012.

***Teleology and colonisation in antiquity and in recent Times (A.J. Nijboer)***

This article was written this year at the request of the editors of the *Ancient West & East* journal. It is scheduled to be published in 2011. The same article was reworked and translated into Italian as 'Leggere la colonizzazione greca antica nel XX e XXI secolo d.C' for the IX Giornata Archeologica at Francavilla Marittima, 27 November 2010.

### **2.2.2. Social and cultural change in prehistoric Greece**

#### ***Middle Helladic Argolid Project*** (S. Voutsaki & E. Milka)

Voutsaki co-edited the proceedings of the MESOHELLADIKA Conference, which were published in 2010. Voutsaki co-authored the introduction and conclusion of the proceedings, an article on <sup>14</sup>C analysis and an article on DNA analysis, and was the sole author of an article on the domestic economy in Asine. She also published two peer-reviewed articles, in *Archaeological Dialogues* and in *Opuscula*. Two chapters were published in the *Oxford Handbook for Aegean Archaeology*, one on the Argolid and one on the Middle Bronze Age period. Another article on the Argolid appeared in the peer-reviewed volume *Political Economies in the Aegean Bronze Age*. Voutsaki also submitted an article on the notion of value (peer-reviewed volume), and two more articles, on diet, economy and society in Lerna and Asine (peer-reviewed volume). One more co-authored article on Asine is in press. Several co-authored articles as well as articles of which Voutsaki is the sole author are in preparation. Two co-authored talks were given at the Conference on Diet, Economy, Society in the Ancient Greek World in March 2010. The talks will be published in the Proceedings (see below). Voutsaki gave a talk at a Conference on the Mycenaean Argolid in November 2010, which will be published in the proceedings.

#### ***Argos Tumuli Project*** (S. Voutsaki & E. Milka)

Voutsaki received a Replacement Grant from NWO to work on the final publication of the Argos Tumuli Project, to be published by INSTAP Academic Press. One co-authored article on the Argos Tumuli is in press entitled 'Ancestral landscapes: Burial mounds in the Copper and Bronze Ages'.

#### ***Ayios Vasilios Excavations*** (S. Voutsaki)

Voutsaki participated in the excavation of the Mycenaean palatial complex at Ayios Vasilios. She also co-authored the reports to INSTAP and to the Archaeological Society at Athens, and co-wrote grant applications for next year's season.

#### ***Diet, Economy, Society in the Ancient Greek World*** (S. Voutsaki)

Voutsaki co-organised the 'Diet, Economy, Society in the Ancient Greek World' Conference. She selected the papers and posters, worked out the programme, gave two (co-authored) talks and chaired the discussion in a Round Table on 'The Institutional Framework of Archaeological Science in Greece'. This will result in four contributions in the proceedings (all co-authored): the introduction, two articles, and a paper on the institutional framework. The editing of the papers for the proceedings (co-edited) was completed in March 2011.

#### ***Mycenaean Ritual Action in the 21<sup>st</sup> century*** (S. Voutsaki)

Voutsaki received a *Broedbonus* grant in order to work on an application for an NWO Free Competition grant on the topic of *Mycenaean Ritual Action in the 21<sup>st</sup> century*. The application will be submitted in the summer of 2011.

#### PhD research within the Shifting Identities Project

##### *Transitional periods in Bronze Age Mainland Greece. A household perspective of the development of social differentiation from EH3 to LH1* (C.W. Wiersma)

Wiersma finished the fourth chapter of her PhD research, which was about house architecture and house assemblages in the northwestern Peloponnese.

### **2.2.3. Urban life in Hellenistic Greece**

#### **Halos** (*H.R. Reinders & W. Prummel*)

During the field campaign of 2010 the excavation of the House of the Tub was completed. The focus of the campaign was on preparing an accurate plan of the House of the Tub, investigating stratigraphy and foundations, excavating the courtyard to check for the presence of a garbage pit, cleaning part of the street north of the house and cleaning the plot for taking an aerial photo. Whilst cleaning the plot, part of the adjacent House of Agnostos was uncovered. In November and December the artefacts of the House of the Tub were documented (grindstones, polishing stones and artefacts of bronze, iron and lead).

### **2.2.4. Economy and living standards in the Roman World**

#### *Stature and the standard of living in the Roman Empire* (*G.M. Klein Goldewijk*)

The database on Roman stature has been consolidated this year. It now includes approximately 10,800 people. A trial run performed in May 2010 suggests a decline in living standards in the 3<sup>rd</sup> century AD, and a rise thereafter. In the Western part of the Mediterranean, however, the standard of living for women continued to decrease up to the first half of the 5<sup>th</sup> century AD.

#### *Roman consumption of bronze and iron: a case study of Pompeii, Herculaneum and the surrounding villas* (*M.L. Ratliff*)

At the request of the PhD student this promotion trajectory was stopped.

### **2.2.5. Interaction in the margins of the Graeco-Roman World**

#### **Džarylgač Survey Project** (*P.A.J. Attema* (director), *P. Guldager Bilde* (director, Aarhus University, T.C.A. de Haas, *W. de Neef & C.G. Williamson*)

The results of this project, the fieldwork of which was concluded in 2008, were further prepared for publication in the Black Sea Studies series of Aarhus University Press. The publication is now in the final editing stage but has been put on hold whilst funding is sought for the full-colour publication of the two envisaged volumes.

#### **Roman activities beyond the northern Frontier** (*M.C. Galestin*)

Material culture, both written and non-written sources, has provided much information on the relations between the Roman Empire and the people living beyond the frontiers. Evidence from written sources, especially writing tablets, has recently been investigated or reinvestigated, for instance the Tolsum document. Other writing tablets, from the Rhine region, may also provide new evidence on these relations in the first century AD. A tablet excavated in Alphen aan den Rijn, *castellum Albaniana*, has been studied with the hope to be able to read the Roman cursive writing. However, it turned out that after the conservation of this friable wooden object the written text could not be read. Expertise on Roman bronze objects from the Netherlands has been given on several occasions. Ranging from a bronze oil lamp and a possibly Roman statuette discovered south of the Rhine. Two other possibly Roman statuettes discovered in the *terpen* area, turned out to be decorative statuettes from (copies of?) 17<sup>th</sup> century Dutch spring-driven pendulum clocks.

### **2.2.6. The classical past in the present**

#### **Uses of the past in modern Greece** (*S. Voutsaki*)

Voutsaki proofread the volume *Ancient Monuments and Modern Identities: towards a critical history of archaeology in 19<sup>th</sup> and 20<sup>th</sup> century Greece* that is due to be published. She has been invited to present a paper and chair a session at the Conference on 'Antiquity and the Modern Greek Culture' to be held in Birmingham in 2011.

### **2.3. ARCTIC ARCHAEOLOGY**

More than in any other region on earth, in the Polar Regions man is limited in the development of opportunities. Whereas in early days these regions could only support a limited number of inhabitants, resource development has meant that the number of inhabitants is now beyond all original bounds. The regions are used as resource frontier regions most of the time, producing raw materials and energy sources for the rest of the world. Therefore, the exploration and exploitation of resources in Polar Areas are more important for the rest of the world than for the inhabitants of the Polar Regions themselves. Although most of the economic activities are limited in these regions, their footprint on the natural landscape is mostly substantial. It is, in fact, the first stage in the development of a cultural landscape and that is why it fits very well into the research programme of the GIA. The environmental change caused by climate change makes the regions more accessible and it has economic, scientific and political consequences.

The research group Arctic and Antarctic Studies has two research fields:

1. Exploration and resource development in polar areas
2. Environmental change and pollution in the Arctic

#### **2.3.1. Exploration and resource development in polar areas**

##### ***Large scale historical exploitation of polar areas (LASHIPA)***

*LASHIPA-8 (L. Hacquebord, D. Avango, G. Rossnes (Norway), U.I. Gustafsson & J. Labohm)*

Fieldwork was carried out at the Falklands, South Orkney Islands and the Antarctic Peninsula from 5 to 31 March as part of the IPY-LASHIPA project. The team conducted an archaeological survey, documenting and mapping several whaling and research stations in the region mentioned above. The expedition was organised in cooperation with the Swedish Polar Research Secretariat and the Royal Institute of Technology in Stockholm, Sweden. The expedition was funded by the Swedish Research Council and ALW/NWO.

*LASHIPA-9 (F. Kruse, D. Avango, P. Leminen, C. Botman & H.R. de Haas)*

Fieldwork was carried out on the southwest and southeast coasts of Spitsbergen from 29 July to 16 August as part of the IPY-LASHIPA project. The team conducted an archaeological survey by registering, documenting and mapping the material remains of prospecting, mining and early whaling. The expedition was funded by ALW/NWO.

##### **Research projects within the LASHIPA Project**

*Green Harbour, Spitsbergen and the international history of exploitation of the polar areas (L. Hacquebord & D. Avango)*

The objective of this LASHIPA sub-project is to produce general explanations for the development of industry in the polar areas from an international comparative perspective. In 2010, Hacquebord and Avango focused their research on the role of industrial sites in the polar areas after they were closed and abandoned, both as assets for other activities (e.g. tourism, science, military) and as cultural heritage sites. The aim is to analyze their role in contested Polar Regions. The research has therefore focused on South Georgia (incl. Malvinas / Falkland Islands), the Antarctic Peninsula and Spitsbergen (Svalbard). What has been the role of historical industrial sites in the strategies of the actors who have been competing for influence over these areas? What histories have been ascribed to the sites by the competing actors and why, and what have been the consequences (geopolitically and for the interpretation of the historical remains)?

The research has shown that the competing actors have often enrolled historical places and remains as actants in their actor networks by using and producing historical narratives. The contents of these narratives have naturally differed but have been related to broader genres about nation, discovery, science

and technology, giving them strength and legitimacy. The historical narratives and actors have been used for different purposes, such as defending national prestige, creating a sense of connectedness to distant polar places and increasing influence over territories and natural resources.

#### PhD research within the LASHIPA Project

*The exploitation of natural resources in Green Harbour, Spitsbergen (78 N) during the pre-industrial whaling and hunting period (Y.I. Aalders)*

Draft versions of chapters two and three of the dissertation have been handed in. The study of the archaeological collection of the Pomor Museum in Longyearbyen has been completed. Some indications were found in the archaeological data for contacts between European whalers and Russian hunters on Spitsbergen. An analysis of the bone material of two Russian sites was also carried out and showed clearly that walrus and reindeer were the main targets of the hunters. The Russian hunting was opportunistic in character and other resources were exploited when possible.

*British Prospecting, Mining and Geopolitics on Spitsbergen, 1904-1953 (F. Kruse)*

Kruse carried out important archival research in Oslo and Tromsø in June and took part in the LASHIPA 9 archaeological fieldwork on Spitsbergen in August 2011. This led to a greater appreciation and understanding of a number of British prospecting and mining companies active on Spitsbergen. The new information is currently being assessed.

*Coal exploitation by the NV Nederlandsche Spitsbergen Compagnie on Spitsbergen in its national and international context, 1919-1932 (H.R. de Haas)*

In 2010 industrial archaeological fieldwork at Recherche Fjorden, Spitsbergen was carried out. All fieldwork has now been completed and the results have been catalogued and published in the LASHIPA fieldwork reports 4 (2007), 5 (2008), 7 (2010) and 9 (2011). Furthermore, two chapters of the thesis were written and discussed with promotor L. Hacquebord. They were also discussed and commented upon at various other platforms.

*Development and Decay: a comparative study of four former whaling stations in the Arctic and Antarctic 1904-1931 (U.I. Gustafsson)*

During the period of 5 to 31 March an archaeological survey was executed in the Antarctic (*South Orkney Islands, South Shetland Islands and the Antarctic Peninsula*), funded by the Swedish Research Council, Stockholm, Sweden and ALW/NWO. This LASHIPA-8 field campaign included registering, documenting and mapping the whaling and research stations. Special attention was paid to Signy Island and Deception Island. In addition, important archival data was compiled at the British Antarctic Surveys, the Scott Polar Research Institute (Cambridge/UK) and the Falkland Islands Museum and archival services (The Falkland Islands/Malvinas). Finally, four chapters of the thesis were written, discussed and commented upon by the promotor and fellow PhD students at a seminar designed by and held at the Arctic Centre.

#### ***Science and politics in polar areas***

The LASHIPA-8 expedition to the Antarctic Peninsula was devoted to a large extent to this subject. Hacquebord and Avango spent some time publishing the first results of this research theme.

#### PhD research within Science and Politics in Polar Areas

*The footprint of tourism: Tourist behaviour on cultural heritage sites in Antarctica and Svalbard (R.M. Roura)*

This PhD project was finished in 2010. The thesis was reviewed and approved and the defence of the thesis will take place in April 2011. This research answers two questions: What are the effects of tourism on historic sites in Antarctica and Svalbard?, and What are the management implications of the effects of tourism on historic sites? The tourism 'footprint' consists of an assemblage of behavioural traces on historic features and the surrounding environment. Tourism is part of a sequence of site formation processes that creates and modifies the archaeological record. Tourism traces, in turn, are modified by other processes. The effect on historic sites of organised tourist visits is minor in relation to the effect of natural processes on those sites, albeit focused on significant features that often embody the value of the



sites and from which these are protected. Information (instructions, narratives) influences tourist behaviour and the resulting effects. The overall footprint is multi-scalar and affects historic sites in a region: individual sites and individual components of a site. Tourism is linked to other contemporary activities that take place at historic sites, and so are their combined effects.

*Polyphonic dialogue about experienced social impacts caused by sustainable tourism development in the region of Sapmi (M. Cornelisse)*

This project is a study of the perception of sustainable tourism held by indigenous peoples. It started in 2010 and will be developed further in 2011.

### **2.3.2. Environmental change and pollution in the Arctic**

***Arctic environmental cooperation (F. Steenhuisen, M.J.J.E. Loonen & T.K. Terpstra)***

The Arctic Centre team has participated in several working group meetings of the Arctic Council. Steenhuisen participated in the meetings of the Arctic Monitoring Assessment Programme (AMAP) working group, M.J.J.E. Loonen in the Conservation of Arctic Flora and Fauna (CAFF) meetings and T.K. Terpstra in the meetings of the Sustainable Development working group.

***Arctic mercury pollution (F. Steenhuisen)***

In 2010 Steenhuisen took part in the AMAP working group meeting. He worked on mercury pollution in the Arctic, the Radioactivity Assessment 2009 and the Oil and Gas Assessment. Steenhuisen worked on the development of a scenario module and the execution of three scenarios for 2020. He also worked on the development of a module to compare historical data (1990–2000). Some literature study was done on historical mercury emissions. He collected information about small-scale gold production.

### ***Birdhealth in the Arctic***

*How do geese adapt to arctic warming? (M.J.J.E. Loonen, C.A.M. Sandström, J.T. Oudman & E. Biersma)*

The data set with individual information on barnacle geese and their survival, breeding phenology, moult phenology and breeding success spans 23 years now and is part of the longest continuous biological monitoring series on Spitsbergen. Supplemental data on vegetation change, grass growth and grazing intensity provide an ecological context. Density dependence follows food depletion, but top-down control by arctic foxes reduces population numbers. Adaptation to earlier in spring has only been observed since 2007. In 2010, we continued studying the timing of the spring migration. From the three previous years, we discovered new stop-over strategies during the spring migration, which are also successful. In order to study disease risk in arctic breeding birds (BIRDHEALTH) we sampled birds on Spitsbergen, but also replicated an experiment raising goslings in captivity (previously on Spitsbergen, now in the Netherlands). The goslings grazed on vegetation grazed by wild geese. According to our hypothesis, disease risk in the Arctic is much lower than in temperate regions.

### ***Adaptation and migration***

Adaptation and migration are both important strategies for indigenous peoples in dealing with environmental change.

#### PhD research within Adaption and Migration

*Social structure and architecture of the Thule culture in relation with climate change (M.E. van Kruining)*

In this project a database was created of archaeological sites in Greenland. In addition, the habitation history of the Eastern Arctic and the history of the Thule culture was studied.

*Transnational ties, urban networks and identity information among Inuit migrants in Denmark and southern Canada (T.K. Terpstra)*

The work for this PhD project concentrated on conducting anthropological fieldwork in Denmark and Greenland. In addition, further literature on the topic was collected and read.

### 3. RESEARCH ACTIVITIES

#### 3.1. FIELDWORK

##### 3.1.1. Prehistoric and Protohistoric Archaeology

###### 3.1.1.1. *The Netherlands*

**Opende, Landgoed Opende**, 2-9 March. Investigation of a suspected barrow location with coring and test-trenches.

Director : S. Arnoldussen  
Staff : S. Arnoldussen, H.A. Groenendijk  
Participants : I. Woltinge, M. Schepers, I. van der Velde, J. Mendelts  
Cooperation : H.A. Groenendijk (Province of Groningen), J. Molema (Gemeente Grootegast), Y. van der Velde (Landgoed Opende)

**Zeijen, Noordse veld**, 4 May – 6 July. Excavation of Celtic Field ridges and plots.

Director : S. Arnoldussen  
Staff : S. Arnoldussen  
Participants : I. Woltinge, M. Schepers, I. van der Velde, J. Mendelts, R. Fens, S. Dresscher  
Cooperation : J. Wolf (SBB), M. Huisman (Gemeente Tynaarlo), B. van Os (RCE)

**Epse-Olthof**, 7 May – 28 July. Excavation of an Early Mesolithic site.

Director : J.H.M. Peeters  
Staff : J.H.M. Peeters, D. Kastelein, I. Hermsen, M. van der Wees (all three from Gemeente Deventer)  
Participants : Students from Saxion, volunteers from Archeologische Werkgemeenschap Nederland  
Cooperation : S. Verneau

**Tynaarlo**, 7-11 July. Geophysics and 3D-scanning at Hunebed D6.

Director : A.L. van Gijn  
Staff : E. Bolhuis (technical support)  
Participants : J. Wiersma, J. Geuverink

**Kraggenburg, Noordoostpolder**, 5-23 July. Excavation of a medieval shipwreck.

Director : A.F.L. van Holk  
Staff : D. Velthuisen, J. Vermeersch, G. Schreurs, F. Dallmeijer, S. Tiebackx, E. Bolhuis  
Participants : S. van Haelst, S. Cousin, K. Radloff, C. Visser, D. Zwart, K. Blok, M. van der Storm, M. van der Linden, volunteers from Archeologische Werkgroep Nederland (Department Flevoland)  
Cooperation : D. Velthuisen (Nieuw Land), G. Schreurs, J. Vermeersch, F. Dallmeijer (RCE-Lelystad)

**Swifterbant**, 9 August – 2 September. Excavation of Middle Neolithic settlement site Swifterbant S25.

Director : D.C.M. Raemaekers  
Staff : R.T.J. Cappers, W. Prummel, M. Schepers, I. Woltinge  
Participants : Various students from the University of Groningen, Leiden University, VU University Amsterdam, Saxion, volunteers from Archeologische Werkgemeenschap Nederland  
Cooperation : D. Velthuisen (Nieuwland Lelystad)

**Jelsum**, 9 August – 10 September. Excavation of an Iron Age to Medieval *terp* site at the village of Jelsum (Friesland).

Director : J.A.W. Nicolay

Staff : J.A.W. Nicolay, S. Tiebackx, E. Bolhuis, R. Kusters, J. van Gent

Participants : T. Varwijk, M. Bakker, J. Rap, P. Schrijver, J. Bloem

Cooperation : P.C. Vos (Deltares), H. Huisman (RCE), E. Kramer (Fries Museum)

### **3.1.1.2. England**

**Colchester, Essex**, 12 November – ongoing. Analysis of metalwork from a Late Bronze Age hoard from Burnham-on-Crouch, Essex.

Director : S.G. Matthews

Participants : S. Sealey (Colchester Museum), L. McLean (Essex Finds Liaison Officer, Portable Antiquities Scheme, British Museum)

Cooperation : Colchester Castle Museum (Colchester, Essex), Portable Antiquities Scheme, British Museum

### **3.1.1.3. Egypt**

**Saqqara**, 1-5 February. Excavation of temple complex (Late Period).

Director : M. Raven, H. Hays

**Fayum, Egypt**, 7-22 November. Epipaleolithic, Neolithic and Roman sites.

Director : R.T.J. Cappers, W.Z. Wendrich, S. Holdaway

Staff : A. Austin, J. Batcheller, J. Bos, R.T.J. Cappers, T. de Wit, S. Gupta-Agarwal, E. Guttman-Bond, S. Holdaway, S. Lehner, G. Mac Donald, S. Morris, P. Nicholson, L. Andrew, C. Vermeeren, W. Wendrich

Participants : *Scientific Staff*: N. Abanavas, T. Barker, H. Barnard, A. Caldwell, E. Cole, L. Diboyan, K. Ditchfield, L. Emmitt, F. Fantone, *Field School Students*: F. Heinrich, F. Herbin, M. Jacobson, D. Jones, M. King, L. Klerkx, Koopman, S. Menchen, L. Mimms, N. Mohsen, M. Naesborg, S. Nasoordeen, K. Olesen, R. Ormeling, S. Palmer, R. Phillipps, N. Phillips, L. Seldenthuis, K. Simon, B. Simpson, A. Stewart, E. Sullivan, A. Susak, P. van Pelt, D. Vazquez, S. Villalobos

Cooperation : University of Groningen, University of California, Los Angeles, University of Auckland

### **3.1.1.4. Syria**

**Sabi Abyad**, 15 May – 7 June. Excavation of Sabi Abyad tell 3.

Director : D.C.M. Raemaekers, R.T.J. Cappers

Staff : H. Qi

Participants : H. Qi, M. Bruning (National Museum of Antiquities, Leiden)

### **3.1.1.5. Turkey**

**Gökceada**, 29 July – 7 August. Fieldwork (pollen coring) in relation to the excavation of Neolithic Ugurlu (6000-4500 cal BC).

Director : H. Woldring, M. Schepers

Cooperation : B. Erdogu (Dept. of archaeology, University of Thrace, Edirne)

### **3.1.2. Mediterranean Archaeology**

#### **3.1.2.1. Italy**

##### ***Crustumerium***

**Crustumerium (Rome)**, 24 June – 1 August. Excavation of tombs on Iron Age-Archaic necropolis Monte Del Bufalo.

Director : P.A.J. Attema, A.J. Nijboer

Staff : P. Attema, S. Boersma, B. Nijboer, G. van Oortmerssen, S. Willemsen

Participants : H. Arima, M. Bakker, M. Bannink, L. Barresi, R. Bronkhorst, M. Crudo, C. van Driel, M. Fasanella Masci, E. Holmes, S. Huizing, P. Kalkman, T. Kauling, T. Lanjouw, A. Pätzold, H. Seymour, C. de Waal, L. Werner, O. Woldring, J. Wubs

Cooperation : F. di Gennaro (SSBAR: Soprintendenza Speciale per i Beni Archeologici di Roma), B. Belevi (SSBAR), W. Pantano (SSBAR), P. Bassanelli (SSBAR), G. Ceroli (SSBAR)

##### ***Pontine Region***

**Nettuno, Borgo Le Ferriere**, 15 January – 1 April. Study of the artefacts of votive deposit 'Laghetto del Monsignore' (Campoverde).

Director : P.A.J. Attema, F. di Mario

Staff : T. van Loon

Participants : M. Bakker, E. Davide, T. van Loon, Y. van Popta, S. Scarfi, G. Tol, T. Trienen

Cooperation : F. di Mario, E. Davide, S. Scarfi (Soprintendenza per i beni Archeologici del Lazio)

##### ***Calabria***

**Francavilla Marittima**, 3-24 July. Material studies, site survey Q130, geoarchaeological and geophysical studies.

Director : P.A.J. Attema, J. Jacobsen, P.M. van Leusen

Staff : N. Oome, H. Bouter, W. de Neef, D. van Tienhoven (survey of Hellenistic site)  
M. d'Andria, G. Mittica, C. Colelli, N. Perrone (excavations Timpone della Motta)

Participants : D. van Tienhoven, T. Roovers (students), K. Kusters, N. van den Berg, B. Gilding,  
M. Wilson, H. el-Helo (University of Ottawa), R. Tessier

Cooperation : Soprintendenza per i Beni Archeologici della Calabria, B. Ulrich, R. Kniess

**Francavilla Marittima**, 1-6 November. Material campaign of Hidden Landscapes / Rural Life Projects.

Director : P.M. van Leusen

Staff : W. de Neef

Participants : F. Ippolito

Cooperation : P.A.J. Attema

### **Lazio**

**Monti Lepini – Villafranca – Pontinia – Segni**, 28-31 October. Material campaign of the Hidden Landscapes Project.

Director : P.M. van Leusen

Staff : W. de Neef, F. Ippolito

Cooperation : A. Cocchieri (Museo di Pontinia), F. Colaiacomo (Museo di Segni), S. Luppino (Museo di Sibari), C. Anastasia (local archaeologist and GIA liaison)

### **3.1.2.2. Greece**

**Ayios Vasileios**, Sparta, 25 July – 8 August and 21-29 September. Excavation of Mycenaean palatial complex, excavation of early Mycenaean chamber tomb, excavation of MH III – LH I cemetery, study of finds, and geophysical survey.

Director : A. Vassilogamvrou

Staff : S. Voutsaki, V. Aravantinos, S. Raftopoulou

Participants : Archaeologists of 5<sup>th</sup> Ephorate, Sparta, volunteers

Cooperation : Prof. G. Tsokas (Dept. of Geology and Geophysics, University of Thessaloniki), National Museum, Department of Conservation

**Argos Tumuli Project**, 2-9 November. Museum work.

Director : S. Voutsaki

Staff : K. Sarri, O. Dickinson, S. Triantaphyllou, E. Milka

Cooperation : 4<sup>th</sup> Ephorate, Nauplion

**Halos**, 5 July – 5 August. Excavation House of the Tub and House of Agnostos.

Director : H.R. Reinders

Staff : H.R. Reinders, J.P. de Roever, E. Bolhuis (technical support)

Participants : R.E. Brandhoff, T. Dijkstra (field director), M.M. Feenstra, F.G. Hitzert, M. Post, P. Swart, T. Verlaan, E.M. Witmer

Cooperation : 13<sup>th</sup> Ephorate of Prehistoric and Classical Antiquities (Volos), V. Rondiri, D. Gouliotis, I. Koutsokeras, T. Papadoyiannis, M. Skoupou

**Halos**, November – December. Study of grindstones and metal artefacts (House of the Tub).

Staff : H.R. Reinders, J.P. de Roever

### **3.1.3. Arctic Archaeology**

#### **3.1.3.1. The Netherlands**

**Haringvliet bij Dirksland (Z.H.),** 20 May – 1 June. BIRDHEALTH: Experiment raising barnacle goose goslings.

Director : M.J.J.E. Loonen  
Staff : C.A.M. Sandström  
Participants : N. Jensen  
Cooperation : Staatsbosbeheer, Natuurmonumenten en lokale boeren

#### **3.1.3.2. The Polar Regions**

**Antarctica,** 27 February – 11 April. LASHIPA 8: Documentation of the material remains of modern whaling and of scientific research (including interviews with research station personnel)

Director : D. Avango  
Staff : U.I. Gustafsson, L. Hacquebord  
Participants : J. Labohm, G. Rossnes  
Cooperation : Swedish Polar Research Secretariat, Stockholm; British Antarctic Surveys and Norwegian Cultural Heritage Directorate, Oslo

**Ny-Ålesund, Spitsbergen,** 14 June – 17 August. BIRDHEALTH and Barnacle Goose Ecology.

Director : M.J.J.E. Loonen  
Staff : T. Oudman  
Participants : E. Biersma  
Cooperation : Norwegian Polar Institute

**Spitsbergen, Norway,** 29 July – 16 August. LASHIPA 9: Documentation of material remains of prospecting, mining and early modern whaling.

Director : D. Avango  
Staff : H.R. de Haas, F. Kruse  
Participants : C. Botman, P. Leminen  
Cooperation : KTH – Royal Institute of Technology, Stockholm

**Jutland, Denmark,** 1 April – 15 May. Anthropological fieldwork: Greenlanders in Denmark.

Director : T.K. Terpstra  
Staff : T.K. Terpstra

**Copenhagen, Denmark,** 30 July – 2 August. Anthropological fieldwork: Greenlanders in Denmark.

Director : T.K. Terpstra  
Staff : T.K. Terpstra

**Greenland,** 15 September – 4 October. Sustainable Development Working Group Meeting and fieldwork in Greenland.

Director : T.K. Terpstra

### 3.2. LECTURES AND POSTER PRESENTATIONS

#### **Aalders, Y.I.**

- 7-12 June, Oslo (Norway): IPY Open Science Conference, 'The importance of the walrus hunt for Russian hunters on Spitsbergen in the 18<sup>th</sup> century: a study of the animal remains from an 18<sup>th</sup> century Russian hunting station in Green Harbour'.
- 25 November, Groningen (Netherlands): WBPI Scientific Symposium 'Arctic Chance', 'Sustainability of the Russian walrus hunt on Spitsbergen in the 18<sup>th</sup> century'.

#### **Arnoldussen, S.**

- 10 December, Groningen (Netherlands): Annual meeting GIA, 'Van de wal in het veld. Hernieuwd onderzoek aan celtic fields'.

#### **Attema, P.A.J.**

- 1 April, Groningen (Netherlands): Opening of Poster and Book exhibition in the University Library, 'Archaeological Investigations into the ancient Greek colonization of the Crimea, the Dzarylgach Survey Project'.
- 3 October, Provadia (Bulgaria): Humboldt-Kolleg, Salz und Gold: die Rolle des Salzes im preahistorischen Europa (30 September - 4 October), 'Salt production on the Tyrrhenean coast in South Lazio (Italy) during the Late Bronze Age, its significance for understanding contemporary society.'
- 13-17 October, Göttingen (Germany): Scientific congress 'Griechen in Ubersee und der historischen Raum' (Universitäten Messina (Sizilien) und UBC Vancouver (Canada) und internationaler Fachkollegen), 'Indigenous and Greek space in the Sibaritide (S. Italy), recent fieldwork results of the Groningen Institute of Archaeology at Francavilla Marittima' (keynote lecture).
- 20 October, Groningen (Netherlands): Gronings-Griekse Vereniging, 'Een Griekse episode, de verre 'chora' van Chersonesos'.
- 10-12 November, Ravenstein (Netherlands): ESF Exploratory Workshop on Roman colonization under the Republic: towards a new interpretive framework, 'The Pontine region, laboratory of Roman colonization?' (keynote lecture).
- 16-17 December, London (UK): British Museum Classical Colloquium Ceramics, Cuisine and Culture: the Archaeology and Science of Kitchen pottery in the Ancient Mediterranean World, 'Late Bronze Age Production and Storage Practices in the Sibaritide (northern Calabria, Italy): the evidence for 'doli cordonati' in Rural Contexts'.

#### **Avango, D.**

- 20 April, Ånn (Sweden): Swedish Polar Research Secretariat Conference The Polar Week (April 19-23), 'Human- and social scientists in the field, from the Swedish high north to Antarctica: industry, geopolitics and indigenous peoples'.
- 11 June, Oslo (Norway): IPY Open Science Conference (June 8-12), 'Cultural heritage as actants in the struggle over the Polar Areas and their natural resources'.
- 12 June, Oslo (Norway): IPY Open Science Conference, 'The essence of the adventure. Narratives of Arctic work and engineering in the early 20th century' (with A. Houltz).
- 12 June, Oslo (Norway): IPY Open Science Conference, 'Industrial heritage in the Polar areas as sources for historical research' (with U.I. Gustafsson, B. Basberg and G. Rossnes).

#### **Beckerman, S.M.**

- 10 April, Leiden (Netherlands): Vlaardingsymposium, 'Vormvariatie van Vlaardingen-aardewerk'.

#### **Cappers, R.T.J.**

- 9 February, Leiden (Netherlands): Archaeological Forum, 'Archaeobotanical research and archaeological contexts' (keynote lecture).
- 9 March, Amsterdam (Netherlands): Presentation Digital atlas of economic plants, 'Digital atlas of economic plants' (keynote lecture).
- 22 June, Frankfurt (Germany): 'The reconstruction of ancient agricultural practises' (keynote lecture).

**Gijn, A.L. van**

10 December, Groningen (Netherlands): Annual meeting GIA, 'De speciale rol van vakkundig gemaakte vuurstenen voorwerpen uit Scandinavië in Neolithicum en Bronstijd'.

**Groenendijk, H.A.**

10 December, Groningen (Netherlands): Annual meeting GIA, 'Karolingische veenkolonisatie in Groningen' (with P. Vos).

**Gustafsson, U.I.**

7-12 June, Oslo (Norway): IPY Open Science Conference, 'Management versus workers in a Polar Industry: Strategies for social control in the modern whaling industry'.

7-12 June, Oslo (Norway): IPY Open Science Conference, 'Industrial heritage in the Polar areas as sources for historical research' (with D. Avango, B. Basberg and G. Rossnes).

25 November, Groningen (Netherlands): WBPI Scientific Symposium 'Arctic Chance', 'The modern whaling industry in the Arctic: diffusion and adaptation of a technical system'.

**Haas, H.R. de**

21 May, Leiden (Netherlands): Posthumus PhD Conference, 'High-Arctic mining on Credit. How and to what results NESPICO shaped its relations with its financiers, 1919-1932'.

25 May, Groningen (Netherlands): GIA research seminar, 'Explaining the activities of the Hollandsch-Noorsche Mijnbouw Mij. on Spitsbergen. An introduction to a PhD project' (keynote lecture).

12 June, Oslo (Norway): IPY Open Science Conference, 'Business Opportunity or Speculative Bubble? Explaining the Dutch Mining interest in the international Run for Spitsbergen, 1900-1932'.

13 August, Longyearbyen (Spitsbergen): University of Svalbard, UNIS: Guest lecture, 'Business Opportunity or Speculative Bubble? Explaining the Dutch Mining interest in the international Run for Spitsbergen, 1900-1932' (keynote lecture).

20 October, Groningen (Netherlands): Minor series Arctic Exploitation, 'Nederlandse mijnbouw op Spitsbergen. Ondernemers, steenkool & geopolitiek'.

21 December, Groningen (Netherlands): Poolnacht Symposium Lunch lecture, 'De belofte van het Zwarte Goud' (keynote lecture).

**Hacquebord, L.**

21 April, Oost-Vlieland (Netherlands): Annual meeting Cultuurhistorische Vereniging, 'Gevangen in het ijs.'

28 April, Groningen (Netherlands): Vrienden van de Senioren Academie, 'Klimaatsveranderingen in het Noordpoolgebied'.

17 May, Haren (Netherlands): Genootschap Nederland-Engeland, 'Who owns the North Pole'.

26-31 May, Edmonton (Canada): Geopolitical and legal aspects of Canada's and Europe's Northern Dimensions. CCI, 'The history of the exploitation of the Atlantic Arctic: the untold story' (keynote lecture).

7-12 June, Oslo (Norway): IPY Open Science Conference, 'Antarctic Field Stations and their functions in the political arena' (keynote lecture).

21-28 June, Spitsbergen (Norway): Klimaatacademie NRC Reizen. Three keynote lectures: 'Klimaatsveranderingen in het Noordpoolgebied'; 'Geopolitieke verhoudingen in het Noordpoolgebied'; 'Nederland en het Noordpoolgebied'.

8 October, Groningen (Netherlands): NS Try-out festival, 'Op Walvisvangst naar Spitsbergen.'

13 November, Groningen (Netherlands): Opening Poolnacht Symposium, 'Noordpool en poolonderzoek' (keynote lecture).

18 November, Zwolle (Netherlands): ROEZ Gemeente Groningen/VNO bijeenkomst, 'Van wie is de Noordpool'.

3 November, St. Petersburg (Russia): Netherlands Institute Petersburg (NIP), 'Who owns the North Pole'.

5 November, Moskou (Russia): Politechnisch Museum, 'Who owns the North Pole'.

21 November, De Rijp (Netherlands): Museum In 't Houten Huis, 'Op walvisvangst naar Spitsbergen'.

21 December, Groningen (Netherlands): Poolnacht Symposium, 'Bidden om te overleven. Zeventiende eeuwse Europese Overwinteringen' (keynote lecture).



**Holk, A.F.L. van**

- 30 January, Vlaardingen (Netherlands): Schervendag LWAOW, 'Vis en voorspoed voor Holland. Het waterschip als drijvende visvijver en sleepboot'.
- 27 April, Groningen (Netherlands): Inaugural speech (oratie), 'Schepen als schakels. Verbondenheid in ruimte en tijd' (keynote lecture).
- 27 May, Lelystad (Netherlands): Meeting Almere civil servants, 'Vergane Schepen'.
- 24 August, Groningen (Netherlands): Introduction first year students, 'Maritime archaeology in Flevoland'.

**Klein Goldewijk, G.M.**

- 15-17 March, Athens (Greece): the Max Planck Institute for Demographic Research at the American School in Athens, 'Stature, gender, and the standard of living in the Roman Empire'.

**Kruse, F.**

- 12 June, Oslo (Norway): IPY Open Science Conference, 'The influence of two British mining companies'.
- 26 October, Groningen (Netherlands): GIA Research Seminar, 'Oh, my darling Clementine (archaeology of mineral prospecting)'.
- 30 November, Groningen (Netherlands): De Poolnacht van Groningen, 'Archaeology on permafrost'.
- 10 December, Groningen (Netherlands): Annual meeting GIA, 'British prospecting, mining and geopolitics on Spitsbergen, 1904-53'.

**Leusen, P.M. van**

- 12-13 November, Gent (Belgium): Survey Workshop, 'Hidden Landscapes Project 2010: results and plans'.
- 15-17 December, London (England): British Museum Classical Colloquium Ceramics, Cuisine and Culture: the Archaeology and Science of Kitchen pottery in the Ancient Mediterranean World, 'Late Bronze Age Production and Storage Practices in the Sibaritide (northern Calabria, Italy): "Dolii Cordonati" in Rural Contexts'.
- 2-3 December, Gent (Belgium): Spatial Analysis Symposium, 'Hidden Landscapes Project: selected problems and preliminary results'.

**Lindenhout, E. van 't**

- 29 January, Groningen (Netherlands): HOVO, 'Ab Urbe Condita'.

**Loonen, M.J.J.E.**

- 11 January, Haren (Netherlands): Vogelclub Glimmen, 'Vogels kijken in de Poolgebieden'.
- 18 January, Groningen (Netherlands): Visit committee Terlouw on Dutch Polar Research. Two lectures: 'Nederlands Poolstation' and 'Conservation Arctic Flora and Fauna'.
- 11 March, Paterswolde (Netherlands): Elementary School lecture, 'Mijn onderzoek op Spitsbergen'.
- 26 April, Groningen (Netherlands): Willem Lodewijk Gymnasium, 'Beroepenvoorlichting wetenschapper'.
- 27 May, Paterswolde (Netherlands): Startup Meeting Anser Group bussiness people, 'Gedrag en leefwijze van de Grauwe Gans'.
- 23 June, Spitsbergen: Klimaatacademie NRC. Three lectures: 'Aanpassingen van pooldieren', 'Ganzen', and 'Poolonderzoek'.
- 6 August, Ny-Ålesund (Spitsbergen): University Course UNIS AB201, 'Arctic Goose Ecology' (keynote lecture).
- 9 August, Ny-Ålesund (Spitsbergen): Svalbardkurset (Noorse ambtenaren), 'Arctic Goose Ecology'.
- 6 October, Amsterdam (Netherlands): Music by Klas Tortensson, 'Geluiden in het Noordpoolgebied'.
- 17 November, Groningen (Netherlands): De Poolnacht DvhN lezing, 'Overleven in de koude'.
- 18 November, Quebec (Canada) via Skype from Groningen: Final Arctic Wolf Conference, 'Top-down control of a local barnacle goose population?'.
- 25 November, Groningen (Netherlands): WBPI Scientific Symposium 'Arctic Chance', 'Animal health in a changing Arctic'.
- 28 November, Lauwersoog: Poolnacht van Groningen, trekvoegelexcursie, 'Waarom trekken ganzen naar Spitsbergen?'.
- 14 December, Haren (Netherlands): Elementary School lecture, 'Wat voor kleren draagt een eskimo?'.
- 15 December, Bakkeveen (Netherlands): Vrijwilligersdag Natuurmonumenten, 'Ganzen op Spitsbergen'.

**Matthews, S.G.**

2 December, Rennes (France): Séminaire archéologique de l'Ouest: L'âge du Bronze dans l'Ouest de la France. Et si on parlait de métal? Lecture 'Wrapping bronzes: pottery encased metalwork in southern England and northern France during the Late Bronze Age'.

**Nicolay, J.A.W.**

3 December, Anjum (Netherlands): Book presentation, 'Archeologisch onderzoek naar een middeleeuwse terp bij Anjum'.

**Nijboer, A.J.**

1-5 September, Den Haag (Netherlands): 16<sup>th</sup> Annual Meeting European Association of Archaeologists. Two lectures: 'Banquet, Marzeah, Symposion and Symposium during the Iron Age: disparity and mimicry' and 'Approaches to Alcohol Consumption in Bronze and Iron Age Europe: theory and practice'.

**Nobles, G.R.**

15 October, Groningen (Netherlands): GIA lecture, 'Keinsmerbrug.'  
7-8 October, Barcelona (Spain): Guest lecture series, 'Intra-site analysis in Archaeology'.

**Peeters, J.H.M.**

10 March, York (UK): 1<sup>st</sup> SPLASHCOS meeting, 'North Sea Prehistory Research and Management Framework and activities on the Dutch continental shelf'.

**Prummel, W.**

22-24 March, Athens (Greece): The Netherlands Institute at Athens (NIA) and the Hellenic Society of Archaeometry (EAE) Conference 'Subsistence, Economy and Society in the Greek World. Improving the integration of archaeology and science'. Poster presentation: 'The Southeast Gate of Hellenistic Halos (Thessaly, Greece): animal husbandry, hunting, shell fishing, olive and legume cultivation' (with R.T.J. Cappers and H.R. Reinders).  
1 April, Zwolle (Netherlands): Koninklijke Nederlands Natuurhistorische Vereniging (KNNV), afdeling Zwolle, 'Archeozoölogie: wat vertellen resten van dieren over het leven van de vroegere mens?'  
21 May, Wijnaldum (Netherlands): Vlaams-Nederlandse Ecologendag, 'Dierlijke resten uit Wijnaldum-Tjitsma' (with E. Esser and J.T. Zeiler).  
25 August, Paris (France): 11<sup>th</sup> ICAZ conference, 'The animals of Wijnaldum-Tjitsma (The Netherlands), Roman period - Early Middle Ages: indicators for a high status society in the Early Middle Ages?' (with E. Esser and J.T. Zeiler).  
10 September, Wijnaldum (Netherlands): Meeting organised by the Archeologisch Steunpunt Wijnaldum en de Historische Vereniging Barradeel, 'De dieren van de terp Wijnaldum-Tjitsma' (with E. Esser and J.T. Zeiler, within the framework of the NWO Odyssee Programme).  
22 September, Leeuwarden (Netherlands): Historisch Centrum Leeuwarden, 'Van koe tot kat. Dieren in de Romeinse tijd en vroege middeleeuwen op de Oldehove-terp te Leeuwarden'.  
13 November, Utrecht (Netherlands): 100<sup>th</sup> Meeting of the Nederlandsch Natuur- en Geneeskundig Congres, 'Enkele fundamentele vragen over domesticatie van dieren en hun herkenning in het archeologisch archief'.

**Raemaekers, D.C.M.**

13 February, Hamburg (Germany): Ceramic workshop, 'On the brink of something new. From technological to functional analysis of Dutch Neolithic ceramics'.  
10 April, Leiden (Netherlands): Vlaardingen symposium, 'De Vlaardingen-groep. 'Eenheid in verscheidenheid?''  
13 April, Groningen (Netherlands): GIA Research Seminar, 'SAY WHAT? You want to excavate a hunebed for the sake of tourism.....!'  
13-15 May, Kiel (Germany): International Symposium on Megaliths and Identities, 'Current affairs in Dutch TRB research. Identities - monuments - landscapes'.  
26 May, Amersfoort (Netherlands): RCE meeting on National Archaeology, 'Uit de ivoren toren'.

**Schepers, M.**

1 June, Wilhelmshaven (Germany): 15<sup>th</sup> Conference of the International Work Group for Palaeoethnobotany, 'The identification of past plant communities using modern relevées: a case study from Swifterbant'.

**Steenhuisen, F.**

25 November, Groningen (Netherlands): WBPI Scientific Symposium 'Arctic Chance', 'Global mercury emissions and their impact on the Arctic: The need for a geospatially distributed emissions model'.

**Terpstra, T.K.**

7 and 10 December, Groningen (Netherlands): Minor Arctic Studies, 'Arctic Indigenous People'.

**Voutsaki, S.**

23 March, Athens (Greece): Conference 'Diet, Economy, Society in the Ancient Greek World'. Two lectures: 'Diet, Economy, Society in MH Lerna' and 'People, animals and social diversity in MH Asine'.  
13 November, Athens (Greece): Mycenaean Argolid Conference, 'Social change in the MH Argolid'.

**Wiersma, C.**

7 December, Groningen (Netherlands): Bronnenonderzoek KMA, 'Bouwstenen en sociale differentiatie in Bronstijd Griekenland. Een casestudy van Olympia' (guest lecture).  
10. December, Groningen (Netherlands): Annual meeting GIA, 'Bouwstenen en sociale differentiatie in Bronstijd Griekenland'.

**Willemsen, S.L.**

15 February, Groningen (Netherlands): Crasis Ancient World Seminar, 'Een veranderend grafitueel te Crustumerium (Rome). Verarming of verschuiving?'  
23 March, Rome (Italië): Meeting Koninklijk Nederlands Instituut te Rome, 'Sobere graven te Crustumerium. Een weerspiegeling van de Twaalf Tafelen?'

**Woldring, H.**

3 November, Assen: Drents Prehistorische Vereniging, 'The establishment and the decline of a Late Boreal Scots pine forest near Roderwolde'.

**Woltinge, I.**

2 September, Den Haag (Netherlands): Annual meeting European Association of Archaeologists, 'Human influence on the Late Mesolithic/Early Neolithic landscape in Southern Flevoland (NL)' and co-organiser of the session 'Socio-sedimentary dialectics'.  
16 December, Amersfoort (Netherlands): NOA lezing RCE, 'Archeologische relevantie van een geologisch fenomeen: wat te doen met de pingoruïne?'

### 3.3. WORKING VISITS

#### **Aalders, Y.I.**

11-21 October, Longyearbyen (Svalbard): Study Archaeological Pomor Collection Museum.

#### **Attema, P.A.J.**

4 February, Nijmegen (Netherlands): Workshop 'Merging Traditions in Roman society and Culture'.

25-30 March, Rome and Reggio Calabria (Italy): Meeting with Dr G. di Gennaro of the Soprintendenza Speciale per i Beni Archeologici di Roma (SSBAR) and with dott. ssa Bonomi of the Soprintendenza dei Beni Archeologici della Calabria (with Dr J. Jacobsen).

17 April, Groningen (Netherlands): Exhibition 'Goud uit Georgië'.

20 April, Assen (Netherlands): Drents Museum, visit with students exhibition 'Goud uit Georgië' in the context of the Džarylgač Survey Project.

30 August-3 September, Francavilla Marittima (Italy): Meetings with mayor P. Munno of the Comune di Francavilla Marittima and inspector of the Soprintendenza Archeologica della Calabria dott. ssa S. Luppino on the GIA excavations at Timpone della Motta and field director of GIA excavations Dr J. Jacobsen.

26 September-5 October, Rome and Francavilla Marittima (Italy): Royal Dutch Institute at Rome (KNIR), meetings with Dr Francesco di Gennaro of the Soprintendenza Speciale per i Beni Archeologici di Roma (SSBAR) and Dr B. Bellelli. Visit of GIA excavations in the area Rovitti at Timpone della Motta led by Dr J. Jacobsen, meeting with inspector of the Soprintendenza per i Beni Archeologici della Calabria S. Luppino. Export of Crustumerium tomb inventories from Rome to Groningen.

10 December, Groningen (Netherlands): GIA Annual meeting.

#### **Cappers, R.T.J.**

18-23 July, Geraki (Greece): Workshop 'Archaeobotany of the Bronze Age'.

9-20 August, Barcin Höyük, Demirce and Tepecik (Turkey): Neolithic and Chalcolithic excavations.

26 August, Jelsum (Netherlands): *Terp* excavation.

27 August, Schiermonnikoog (Netherlands): Visit salt marshes.

1 September, Swifterbant (Netherlands): Excavation site.

10 December, Groningen (Netherlands): GIA Annual meeting.

#### **Galestin, M.C.**

17-20 January, Oxford (UK): Oxford University, bringing a wax tablet from Albaniana (Alphen aan den Rijn) for photography by C. Crowther and careful examination and study by R. Tomlin (both Oxford University).

16 September, Utrecht (Netherlands): Meeting Nederrijnse Limes.

#### **Gijn, A.L. van**

10 December, Groningen (Netherlands): Annual meeting GIA, session leader.

#### **Gustafsson, U.I.**

1-7 February, Cambridge (UK): British Antarctic Surveys and the Scott Polar Institute.

#### **Haas, T.C.A. de**

19-28 January, Rome (Italy): Library research at the KNIR.

21 January, Borgo le Ferriere (Italy): Saticum to discuss Roman ceramics with M. Gnade, M. Louwaard, E. Stanco, G. Tol.

4 February, Nijmegen (Netherlands): Workshop 'Merging traditions in Roman society and culture'.

2-4 September, Den Haag (Netherlands): EAA conference.

15 October, Groningen (Netherlands): Research day NWO Geesteswetenschappen.

19 October, Groningen (Netherlands): RUG Veni information meeting.

12-13 November, Ghent (Belgium): International Mediterranean Survey Workshop.

2-3 December, Ghent (Belgium): Workshop 'Spatial analysis applied to archaeological sites from

protohistory to the Roman period'.  
10 December, Groningen (Netherlands): Annual Meeting GIA.

**Hacquebord, L.**

8 January, Den Haag (Netherlands): Interdepartmental meeting.  
18 January, Groningen (Netherlands): Evaluation meeting Terlouw Commission.  
20 January, Zeist (Netherlands): WNF Workgroup Arctica.  
16 April, Den Haag (Netherlands): Interdepartmental meeting Polar research.  
7 June, Oslo (Norway): IASC, Workshop 'Future of the Human and Social Sciences in the Arctic'.  
21-24 September, Moscow (Russia): Lomonosov University of Moskou, invitation to the International Arctic Forum.

**Hao Qi**

4 March, Leiden (Netherlands): University of Leiden, presentation of the raw data of archaeobotanical analysis.  
19 March, Leiden (Netherlands): The 8.2 ka Climate Event and Archaeology in the ancient Near East.  
27 November, Leiden (Netherlands): Workshop 'Abrupte klimaatverandering en culturele transformatie in Syrië in de late Prehistorie'.

**Holk, A.F.L. van**

27 January, Lelystad (Netherlands): 'Modellendag', to collect information on shipmodels from the Rijksmuseum in relation to the construction of waterships.

**Kruining, M.E. van**

2 February, Leiden (Netherlands): Steentijddag (Stone Age Archaeology).  
19-21 April, Groningen (Netherlands): WBPI writing week.  
29 August–3 September, Copenhagen (Denmark): SILA, the Arctic Centre in the National Museum and University of Copenhagen.  
27 November, Groningen (Netherlands): Public days Polar Night of Groningen.

**Kruse, F.**

8-12 June, Oslo (Norway): IPY Open Science Conference.

**Leusen, P.M. van**

26-28 January, Amsterdam (Netherlands): Landscape Archaeology Conference 2010.  
19-20 November, Münster (Germany): CAA DE/NL meeting on 'Remote Sensing and Geophysics'.  
10 December, Groningen (Netherlands): Annual Meeting GIA.

**Lindhout, E. van 't**

10 February, Amsterdam (Netherlands): Satricum excavation results.  
1 March, Amsterdam (Netherlands): Lectures by A. Sommella Mura and G. Bartoloni.

**Matthews, S.G.**

6 March, St.-Germain-en-Laye, Paris (France): Annual meeting 'Association pour la Promotion des Recherches sur l'Age du Bronze (APRAB)'.  
17-19 December, Bristol (UK): Annual meeting, Theoretical Archaeology Group (TAG).

**Neef, W. de**

12-13 November, Ghent (Belgium): International Mediterranean Survey Workshop.  
2-3 December, Ghent (Belgium): Workshop 'Spatial Analysis of Protohistoric and Roman Sites'.  
10 December, Groningen (Netherlands): Annual meeting GIA.

**Nicolay, J.A.W.**

19 March, Amsterdam (Netherlands): Preparation Conference 'Vroege Middeleeuwen'.  
19 March, Utrecht (Netherlands): Conference 'Vroege Middeleeuwen', theme *Frisian kingdoms*.  
25 June, Groningen (Netherlands): Conference 'Vroege Middeleeuwen', theme *Burial fields and migration*.

26 November, Amersfoort (Netherlands): Conference 'Vroege Middeleeuwen', theme *Central places*.  
10 December, Groningen (Netherlands): GIA Annual meeting.

**Nieuwhof, A.**

12 January, Leeuwarden (Netherlands): Fries Museum.  
27 May, Dorkwerd/Wierum (Netherlands): Opening restored *wierde*.  
25 June, Groningen (Netherlands): Meeting researchers Early Middle Ages.  
26 August, Jelsum (Netherlands): GIA excavation.

**Prummel, W.**

22-24 March, Athens (Greece): The Netherlands Institute at Athens (NIA) and the Hellenic Society of Archaeometry (EAE) Conference, 'Subsistence, Economy and Society in the Greek World. Improving the integration of archaeology and science'.  
23-28 August, Paris (France): 11<sup>th</sup> ICAZ conference.  
10 December, Groningen (Netherlands): Annual Meeting GIA.

**Raemaekers, D.C.M.**

20 January, Oldenburg (Germany): Meeting with Dr J. Fries.  
27 January, Zeewijk (Netherlands): Meeting Single Grave Project.  
28 May, Lelystad (Netherlands): Meeting with D. Velthuis (Nieuw Land).  
15 June, Amersfoort (Netherlands): Expert meeting compensatieprogramma Hanzelijn.  
10 December, Groningen (Netherlands): Annual meeting GIA, Opening and Presentation GIA publications.  
15 December, Lelystad (Netherlands): Meeting with D. Velthuis (Nieuw Land).

**Roura, R.M.**

2-14 May, Punta del Este (Uruguay): 33<sup>rd</sup> Antarctic Treaty Consultative Meeting.  
24 July, Turin (Italy): International Association of Antarctica Tour Operators - Tourism Roundtable.  
9-12 July, Oslo (Norway): IPY Oslo Science Conference, a poster and paper presentation.

**Schepers, M.**

30 September–1 October, Buurse (Netherlands): Palynology days.

**Terpstra, T.K.**

7 February, Amsterdam (Netherlands): Interview with the Greenlandic author O. Korneliussen at the exhibition 'Bardot Proviant Klub on Greenland'.  
1 March-4 April, Copenhagen (Denmark): Meeting of the Sustainable Development Working Group of the Arctic Council.  
19-21 April, Groningen (Netherlands): Willem Barentsz Polar Institute Writing week.  
4-5 May, Strib (Denmark): SUS-Netværksdage, Networking days for people working with socially vulnerable Greenlanders in Denmark.  
5-6 June, Roskilde (Denmark): Arctic Social Indicators Workshop.  
1-4 October, Ilulissat (Greenland): Meeting of the Sustainable Development Working Group of the Arctic Council.  
25 November, Groningen (Netherlands): Willem Barentsz Polar Institute Symposium.  
26-27 November, Groningen (Netherlands): Public Days Polar Night of Groningen.

**Voutsaki, S.**

14-18 May, Athens (Greece): Research meeting Argos Tumuli Project.  
16-26 June, Sparta (Greece): Research visit Ayios Vasilios excavations.  
14-18 September, Hague (Netherlands): Association of European Archaeologists Meeting.  
16 November, Leiden (Netherlands): Byvanck lecture.  
10 December, Groningen (Netherlands): Annual meeting GIA, session chair.

**Willemsen, S.L.**

5-11 January, Rome (Italy): Export of archaeological objects to the Netherlands.

1-28 March, Rome (Italy): Consultation of literature in Italian libraries and meetings with Italian colleagues.

17-27 October, Rome (Italy): Preparation export of archaeological objects to the Netherlands.

10 December, Groningen (Netherlands): Annual meeting GIA.

**Woltinge, I.**

6 February, Leiden (Netherlands): Steentijddag (Stone Age archaeology).

26 March, Amsterdam (Netherlands): Kroonlezing KNAW.

19-21 April, München (Germany): Returning artefacts from Mauern to the Archäologische Staatssammlung.

15 June, Amersfoort (Netherlands): Expert meeting compensatieprogramma Hanzelijn.

1-5 September, Den Haag (Netherlands): Annual Meeting of the European Association of Archaeologists.

19 November, Amersfoort (Netherlands): Study day 'Bodem en Archeologie' NBV (Nederlandse Bodemkundige Vereniging).

### **3.4. WORKSHOPS AND EXHIBITIONS (co-organized by GIA staff)**

- 20 January, Zeist (Netherlands): Arctic Workgroup, organised by M.J.J.E. van Loonen & G. Potel.
- 9 February, Groningen (Netherlands): Lecture by and interview with the Greenlandic author O. Korneliussen, organised by T.K. Terpstra, Arctic Centre, Department of Scandinavian Languages and Cultures, and Publishing House Wilde aardbeien.
- 15-26 February, Istanbul (Turkey): Workshop archaeobotany, organised by R.T.J. Cappers in collaboration with the Netherlands Institute in Turkey.
- 22-23 March, Athens (Greece): Conference 'Diet, Economy, Society in the Ancient Greek World', organised by S. Voutsaki in collaboration with the Netherlands Institute at Athens and the Hellenic Society of Archaeometry.
- 22-25 March, Athens (Greece): Conference 'Subsistence, Economy and Society in the Greek World. Improving the integration of archaeology and science', organised by J. Bintliff, R.T.J. Cappers, V. Kilikoglou, W. Prummel, C. Tytgat, S. Valamoti & S.Voutsaki.
- 24 March, Athens (Greece): Round Table Discussion on the 'Institutional Framework of Archaeological Science in Greece', organised by S. Voutsaki.
- 1 April, Groningen (Netherlands): Exhibition 'The Džarylgač Survey Project. Archaeological investigations into the ancient Greek colonization of the Crimea (Ukraine)', organised by P.A.J. Attema, T.C.A. de Haas, U. Kooystra & A. Bijker.
- 1 April – 30 May, Groningen (Netherlands): Poster and Book Exhibition at the University Library, 'The Džarylgač Survey Project. Archaeological investigations into the ancient Greek colonization of Crimea (Ukraine)', organised by P.A.J. Attema, T.C.A. de Haas & students of the Masterclass 'Thematic Literature research'.
- 12-13 April, Copenhagen (Denmark): NySMAC research planning Ny-Ålesund, organised by M.J.J.E. van Loonen in collaboration with NySMAC.
- 19-21 April, Groningen (Netherlands): WBPI Writing workshop, organised by the Willem Barentsz Polar Institute (WBPI).
- 19-23 April, Ånn (Sweden): Swedish Polar Research Secretariat Conference, working group for human- and social sciences in polar research, organised and chaired by D. Avango.
- 17-21 May, Groningen (Netherlands): LASHIPA Database workshop, organised by Y. Aalders and D. Avango.
- 31 May – 5 June, Wilhelmshaven (Germany): Conference of the international workgroup for palaeoethnobotany, organised by F. Bittmann, H. Jöns, S. Wolters, W. Kirleis, A. Kreuz, W. Dörfler & M. Rösch.
- 5-7 June, Oslo (Norway): APECS Early Career Development, organised by Y. Aalders and APECS.
- 6-7 June, Oslo (Norway): Workshop 'APECS Early Career Scientists', organised by H.R. de Haas, APECS and the University of Oslo.
- 8-12 June, Oslo (Norway): IPY Oslo Science Conference, session 'Natural resource exploration and utilization', organised and chaired by D. Avango.



- 18 June, Wijnaldum (Netherlands): NWO Odyssee Programme Exhibition, 'De dieren van Wijnaldum: landschap, voedselvoorziening en ambacht', organised by E. Esser, J.T. Zeiler & W. Prummel.
- 25 June, Groningen (Netherlands): Workshop 'Vroege middeleeuwen', theme burial fields and migration, organised by J.A.W. Nicolay.
- 13-15 October, Oslo (Norway): Kick-off meeting and research planning SIOS, organised by M.J.J.E. van Loonen and the Norsk Forkningsrådet.
- 28 October, Groningen (Netherlands): LASHIPA seminar, organised by L. Hacquebord and others.
- 8-10 November, Groningen (Netherlands): MA workshop 'Wetland Archaeology', organised by J.H.M. Peeters.
- 12 November – 16 January 2011, Groningen (Netherlands): Photo Exhibition 'Faces from the Scoresby Sund', organised by A.J.M. Scheepstra, WBPI/Arctic Centre.
- 13 November – 15 January 2011, Groningen (Netherlands): Poolnacht van Groningen, organised by A. J.M. Scheepstra & F. Rijpma.
- 19 November – 16 January 2011, Groningen (Netherlands): Exhibition at the University Library 'Het Arctisch Centrum, 40 jaar fascinatie voor de Poolgebieden', organised by H.R. de Haas, U. Kooystra & A. v.d. Leij.
- 24 November, Groningen (Netherlands): Literary Polar Night (literary evening), organised by T.K. Terpstra, A.J.M. Scheepstra, J.B. Boschman and Staff Department of the Scandinavian Languages and Cultures.
- 25 November, Groningen (Netherlands): Symposium 'Arctic Change', organised by A.J.M. Scheepstra & L. Hacquebord.
- 26-27 November, Groningen (Netherlands): Public days 'Poolnacht van Groningen', organised by Staff WBPI/Arctic Centre.
- 26-27 November, Groningen (Netherlands): Poolmarkt, organised by F. Kruse, A.J.M. Scheepstra & F. Rijpma.
- 28 November – 15 January 2011, Groningen (Netherlands): Book exhibition at the University Library '40 jaar fascinatie voor de Poolgebieden', organised by H.R. de Haas & A.J.M. Scheepstra.
- 28 November – 15 January 2011, Groningen (Netherlands): Photo Exhibition 'Groningse Poolonderzoekers aan het werk', organised by F. Steenhuisen & A.J.M. Scheepstra.
- 9 December, Oslo (Norway): Workshop EU-project SIOS, research planning, organised by M.J.J.E. van Loonen and the Norsk Forskningsradet.
- 10 December, Groningen (Netherlands): GIA Research Day, organised by N.D. Maring-Van der Pers, J.A.W. Nicolay, P.M. van Leusen & R.T.J. Cappers.
- 16-19 December, Groningen (Netherlands): Polar film festival 'Frozen Images', organised by T.K. Terpstra, A.J.M. Scheepstra & ForumImages.
- 25 December – 9 January 2011, Groningen (Netherlands): Noorderlicht Festival and Photo Exhibition 'Nomadslife', organised by A.J.M. Scheepstra, WBPI/Arctic Centre.

### **3.5. VISITING SCHOLARS**

Bell, M. Prof. (University of Reading (Reading, UK)): Speaker at the Workshop 'Wetland Archaeology'.

Bigras, S. Dr (Canadian Polar Commission (Ottawa (Canada)): Preparing talks about organizing a workshop in the Netherlands.

Bond, E. Prof. (VU University Amsterdam (Amsterdam, Netherlands)): Cooperation geoarchaeology.

Coles, B. Prof. (University of Exeter (Exeter, UK)): Speaker at the Workshop 'Wetland Archaeology'.

Gerdes, R. Prof. (Alfred Wegener Institute Bremerhaven (Bremerhaven, Germany)): Lecture Symposium 'Arctic Sea ice changes and consequences'.

Hurmuzlu, B. Dr (University of Isparta (Isparta, Turkey)): Meeting on student exchange and lecture at the GIA on the University of Isparta fieldwork project.

Lam, F.P. Dr (TNO Delft (Delft, Netherlands)): Lecture Symposium 'Sonar exposure on marine mammals'.

Loeng, H. Prof. (Institute of Marine Research Bergen (Bergen, Norway)): Lecture Symposium 'Physical and biological changes in the Arctic Ocean'.

Menn, I. Dr (Greenpeace (Hamburg, Germany)): Lecture Symposium 'The arctic Ocean in Peril'.

Palsbøll, P.J. Prof. (Harvard University (Boston, USA)): Lecture Symposium 'The effects of past climate changes on abundance and migration of marine mammals in Polar regions'.

Urban, B. Prof. (Leuphana University, (Lüneburg, Germany)): Study of the pollen reference collection.

Wiethold, J. Dr (Institute Nationale de Recherches Archéologiques Preventives (Paris, France)): General visit.

Willemse, K. Prof. (TU Delft (Delft, Netherlands)): Lecture Symposium 'Design of fixed and floating structures for arctic seas'.

### 3.6. EDITORSHIPS AND REPRESENTATION ON BOARDS AND COMMITTEES

**Arnoldussen, S.**

Editorial Board Journal of Archaeology in the Low Countries ([www.jalc.nl](http://www.jalc.nl))

**Attema, P.A.J.**

Head of the Department of Archaeology  
Director of Studies of the Research Master in Art History and Archaeology  
Chairman of the GIA Advisory Board  
Coordinator Chair Classical and Mediterranean Archaeology  
Member of the GIA Management Team  
Member of the VENI committee of NWO  
Member of the Editorial Board *Paleohistoria*  
Member of the Editorial board *Groningen Archaeological Studies (GAS)*  
Member of the Advisory Board *Journal of Mediterranean Archaeology (TMA)*

**Avango, D.**

Chairman of the board of the Swedish section of TICCIH (The International Committee for the Conservation of Industrial Heritage)  
Chairman of the working group 'The Human and Social Sciences in Polar Research', Polar Forum, Swedish Polar Research Secretariat  
Member of the Board of Trustees of TICCIH (The International Committee for the Preservation of Industrial Heritage)  
Member of the lecture committee of the journal *Patrimoine de l'Industrie*  
Member of the Editorial Board of *Bebyggelsehistorisk tidskrift*  
Reviewer for the Journal of Northern Studies

**Cappers, R.T.J.**

Member of the GIA Management Team  
Member of the Scientific Committee of the Netherlands School of Archaeological Research (ARCHON)  
Member of the Curatorium of the Netherlands Institute for the Near East (NINO)  
Member of the Stichting Berenike  
Member of the Groningen Roman Economy Group  
Member of the Editorial Board e-journal of *Indian Medicine*  
Member of the Editorial Board Groningen Archaeological Studies (GAS)

**Galestin, M.C.**

Chairman of the Educational Advisory Board Research Master Art History and Archaeology  
Member of the GIA Advisory Board  
Member of the Faculty BSA committee  
Member of the Faculty committee for the appointment of a Professor of Archaeology of the Terpen  
Secretary of the Examination committee of the Study of Archaeology

**Groenendijk, H.A.**

Member of the Editorial Board *Historisch Jaarboek Groningen*

**Gustafsson, U.I.**

Member of the International Arctic Social Sciences Association (IASSA)  
Member of SCAR Action Group on the History of Antarctic Research  
Member of the International Network for Whaling Researchers (INWR)

**Haas, T.C.A. de**

Member of the PhD Council of the Research School ARCHON  
Member of the Editorial Board *Journal of Mediterranean Archaeology (TMA)*

**Hacquebord, L.**

Director Willem Barentsz Polar Institute  
Executive Secretary Willem Barentsz Foundation Groningen  
Interim chair of the Science Standing Committee on Social System of IASC  
Council member and delegate for the Netherlands in IASC  
Leader of the IPY-LASHIPA project ([www.LASHIPA.nl](http://www.LASHIPA.nl))  
Core member of the National Committee International Polar Year 2007-2008  
Member of the GIA Management Team  
Member of the Board of the Centre for Canadian Studies  
Member of the International Polar Heritage Committee ICOMOS  
Member of the Editorial Committee *Circumpolar Studies*  
Member of the Editorial Board *Groningen Archaeological Studies (GAS)*  
Member of the Editorial Board *Journal of the North Atlantic*  
Member of the National Polar Committee

**Holk, A.F.L. van**

Member of the Glavimans Symposium Board  
Member of the committee preparing the International Symposium on Boat and Ship Archaeology in 2012, 2015, 2018, and 2021  
Member of the Scientific Committee 'Doeler Cog' (Belgium)

**Kruse, F.**

Member of the GIA Advisory Board  
Member of the PhD Council of the Humanities

**Leusen, P.M. van**

Member of the GIA Advisory Board  
Member of the Faculty of Arts Advisory Board on ICT  
Member of the Educational Advisory Board Archaeology

**Loon, T. van**

Member of the Editorial Board *Journal of Mediterranean Archaeology (TMA)*

**Loonen, M.J.J.E.**

Netherlands representative Ny-Ålesund Science Managers Committee (NySMAC)  
Netherlands representative for Conservation of Arctic Flora and Fauna (CAFF)  
Member of the Willem Barentsz Polar Institute  
Member of the planning group for EU-FP7 project SIOS  
Member of the Scientific Advisory Committee of SOVON bird research  
Station leader Netherlands Arctic station  
Treasurer and secretary Underwater Biology Foundation  
Webmaster Netherlands Ornithological Union ([www.nou.nu](http://www.nou.nu))  
Webmaster international journal ARDEA ([www.ardeajournal.nl](http://www.ardeajournal.nl))

**Nieuwhof, A.**

Secretary of the *Vereniging voor Terpenonderzoek*  
Editor of the Annual Reports of the *Vereniging voor Terpenonderzoek*

**Nijboer, A.J.**

Member of Department of Archaeology  
Coordinator GIA Library  
Member of GIA Educational Advisory Board  
Member of the FEWI (Facultaire Expertisegroep Wetenschappelijke Informatie)  
Member of the diocesane Kunstcommissie

**Peeters, J.H.M.**

Member of the Advisory Board UK Maritime and Marine Historic Environment Research Framework  
Member of the Management Committee of SPLASHCOS (EU Cost Action TDo209)  
Member of the Scientific Advisory Board Dronten-N23 Excavation  
Chief Editor journal *Archeologie*

**Prummel, W.**

Member and chair of the GIA Educational Advisory Board  
Member and chair of the jury W.A. van Es-award of Erfgoed Nederland (The Netherlands Institute for Heritage)  
Member of the scientific committee of the National Reference Collection Bibliography Groningen  
Member of the International Council for Archaeozoology (ICAZ)  
Member of the Editorial Board *Groningen Archaeological Studies* (GAS)  
Member of the Editorial Board *Palaeohistoria*  
Member of the Editorial Board Artes Letterenmagazine

**Raemaekers, D.C.M.**

Director GIA  
Secretary of the Department of Archaeology  
Member of the Archaeology Exam Committee  
Member of the Board of the Research Master in Art History and Archaeology  
Secretary of the Exam Committee Research Master Art History and Archaeology  
Chair of the Board of the National Research School ARCHON  
Member of the NWO Committee Vrije Competitie Geesteswetenschappen  
Member of the Advisory Board ARCHIS (Dutch Heritage Agency)  
Member of the Advisory Board ADC Projecten  
Member of the Advisory Board *Groningen Archaeological Studies* (GAS)  
Editor GIA digital series *Grondsporen*  
Member of the Editorial Board of *Offa*

**Roura, R.M.**

Reviewer of articles submitted to scholarly journals

**Terpstra, T.K.**

Member of the Research Group Circumpolar Cultures  
Member of the Groningen Research Group on Migration and Culture  
Representative for the Netherlands in the Sustainable Development Working Group of the Arctic Council  
Member of the Centre for Canadian Studies

**Voutsaki, S.**

Member of the Advisory Board *Hesperia*  
Member of the Advisory Board *Archaeological Dialogues*  
Member of the Advisory Board *Pharos*, Journal of the Netherlands Institute at Athens  
Member of the Advisory Board *BABesch*  
Secretary of the Board of the foundation 'Archaeological Dialogues'  
Member of the Editorial Board *Groningen Archaeological Studies*  
Member of the Letteren PhD Prize Committee

**Wiersma, C.**

Member of the Editorial Board *Journal for Mediterranean Archaeology* (TMA)

**Willemsen, S.L.**

Chief editor of the Editorial Board *Journal of Mediterranean Archaeology* (TMA)  
Member of the committee organizing the international conference 'Pre-roman burial grounds'

**Woltinge, I.**

Member of the Externe Gebruikersgroep Archis2

## 4. PHD PROJECTS

In September 2008 the Graduate School for the Humanities opened its doors for the first group of PhD students. The Graduate School provides a 20 ECTS training programme encompassing multidisciplinary and monodisciplinary courses. This last group of activities is carried out as part of the Posthumus Research School (PhD's Arctic archaeology) or in close cooperation with Research School ARCHON (all other PhD's).

### 4.1. PHD DEFENSES 2010

#### **15 April: J.M. Grimm**

*Animal keeping and the use of animal products in medieval Emden (Lower Saxony, Germany)*

Promotor: Prof. H.R. Reinders

Co-promotor: Dr. W. Prummel

Members of the board of examiners: Prof. D.C.M. Raemaekers, Prof. L.P. Louwe Kooijmans, Prof. D.E.H. de Boer

#### **20 May: B.I. Smit**

*Valuable flints: research strategies for the study of early prehistoric remains from the pleistocene soils of the Northern Netherlands*

Promotors: Prof. D.C.M. Raemaekers, Prof. H.A. Groenendijk

Members of the board of examiners: Prof. P.A.J. Attema, Prof. J.G.A. Bazelmans, Prof. L.P. Louwe Kooijmans

#### **18 November: E. van 't Lindenhout**

*Bouwen in Latium in de archaische periode*

Promotor: Prof. P.A.J. Attema

Members of the board of examiners: Prof. E.M. Moormann, Prof. M. Gnade, Prof. D.G. Yntema

#### **16 December: D. Gerrets**

*Op de grens van water en land*

Promotor: Prof. H.R. Reinders

Members of the board of examiners: Prof. H.A. Groenendijk, Prof. D.C.M. Raemaekers, Prof. H. Zimmermann

#### **23 December: M. Haagsma**

*Domestic economy and social organization in New Halos*

Promotors: Prof. P.A.J. Attema, Prof. H.R. Reinders

Members of the board of examiners: Prof. E.M. Moormann, Prof. O. van Nijf, Prof. V. Stissi

## 4.2. GIA/NWO FUNDED PHD PROJECTS

### **Aalders, Y.I.**

*Exploitation of natural resources and cross cultural contacts of Russian Furhunters and European Whalers on Spitsbergen in the 18<sup>th</sup> century*

Promotor: Prof. L. Hacquebord

### **Beckerman, S.M.**

*Ceramic analysis of Late Neolithic settlements in the province of Noord-Holland (The Netherlands) and interregional comparison*

Promotor: Prof. D.C.M. Raemaekers

Co-promotor: Dr S. Arnoldussen

### **Devriendt, I.I.J.A.L.M.**

*Flint and other stone material from Swifterbant*

Promotor: Prof. D.C.M. Raemaekers

Co-promotor: Dr J.H.M. Peeters

### **Feiken, H.**

*Geo-archaeological approaches to the hidden landscapes of Italy*

Promotor: Prof. P.A.J. Attema

Co-promotor: Dr P.M. van Leusen

### **Gustafsson, U.I.**

*The exploitation of natural resources by the early 20<sup>th</sup> century whaling industry; its impact on the environment and the geo-political situation in the Polar Regions*

Promotor: Prof. L. Hacquebord

Co-promotor: Dr D. Avango

### **Haas, H.R. de**

*The coal exploitation of the Dutch Spitsbergen Coal Company (NESPICO) Green Harbour in its national and international context*

Promotor: Prof. L. Hacquebord

Co-promotor: J.W. Veluwenkamp

### **Haas, T.C.A. de**

*The Romanization of the Pontine region*

Promotor: Prof. P.A.J. Attema

Co-promotor: Dr P.M. van Leusen

### **Ippolito, F.**

*Settlement dynamics in the hinterland of the Sibaritide (Calabria, Italy)*

Promotor: prof. P.A.J. Attema

### **Klein Goldewijk, G.M.**

*Standard of living in the Roman Empire*

Promotor: Prof. P.A.J. Attema

Co-promotors: Dr W.M. Jongman, Dr J.P.A.M. Jacobs

### **Kruining, M.E. van**

*Surviving change by migration or adaptation*

Promotor: Prof. L. Hacquebord

**Kruse, F.**

*British exploration, mining and diplomacy on Spitsbergen, 1898-1952*

Promotor: Prof. L. Hacquebord

Co-promotor: Dr D. Avango

**Loon, T. van**

*Defining the ritual, analyzing society. The social significance of material culture in pre-Roman cult places of central Italy (ca. 900-400 BC)*

Promotor: prof. P.A.J. Attema

**Matthews, S.G.**

*Techniques and Society: A use-wear analysis of the metalwork from the Middle Bronze Age of North-western Europe*

Promotor: Prof. D.C.M. Raemaekers

Co-promotores: Dr S. Hamilton, Dr S. Arnoldussen

**Milka, E.**

*Mortuary differentiation and social structure in the Middle Helladic Argolid*

Promotor: Prof. P.A.J. Attema

Co-promotor: Dr S. Voutsaki

**Neef, W. de**

*Rural life in Protohistoric Italy: relating sub-surface remains to archaeological survey data*

Promotor: prof. P.A.J. Attema

Co-promotor: dr P.M. van Leusen

**Niekus, M.J.L.Th.**

*Stone Age Occupation of the northern Netherlands, Time, Space, Location and Subsistence*

Promotor: Prof. D.C.M. Raemaekers

**Nieuwhof, A.**

*Ritual deposits in the northern Netherlands coastal area – Iron Age until Christianization*

Promotores: Prof. D.C.M. Raemaekers, Prof. J. Bazelmans

**Nobles, G.R.**

*Spatial analysis of Late Neolithic settlements in the province of Noord-Holland (The Netherlands) and interregional comparison*

Promotor: Prof. D.C.M. Raemaekers

Co-promotor: Dr J.H.M. Peeters

**Ratliff, M.L.**

*Roman consumption of bronze and iron: a case study of Pompeii, Herculaneum and the surrounding villas*

Promotor: Prof. P.A.J. Attema

Co-promotor: Dr W.M. Jongman

**Roura, R.M.**

*Polar cultural heritage: policies, management, and change in Spitsbergen and Antarctica*

Promotor: Prof. L. Hacquebord

**Satijn, O.**

*A socio-economic and political landscape archaeology of transition: southern Lazio from the Late Roman period to incastellamento*

Promotor: Prof. P.A.J. Attema



**Schepers, M.**

*Coastal culture: a methodological palaeobotanical study on land use and landscape development in two distinct coastal areas*

Promotores: Prof. D.C.M. Raemaekers, Prof. R.T.J. Cappers

**Terpstra, T.K.**

*Transnational ties, urban networks and identity formation among Inuit migrants in Southern Canada and Denmark*

Promotor: Prof. L. Hacquebord

**Thilderqvist, J.G.M.**

*Ritual bones or common waste? A study of bone deposits in northwestern Europe*

Promotor: Prof. D.C.M. Raemaekers

Co-promotor: Dr W. Prummel

**Wiersma, C.W.**

*Transitional periods in Bronze Age mainland Greece. A household perspective of the development of social differentiation of EH3 until LH1*

Promotores: Prof. P.A.J. Attema, Prof. S. Voutsaki

**Willemsen, S.L.**

*The Iron Age necropolis of the Latin site Crustumarium*

Promotor: Prof. P.A.J. Attema

Co-promotor: Dr A.J. Nijboer

**Woltinge, I.**

*What lies beneath? The value of buried Stone Age landscapes*

Promotor: Prof. D.C.M. Raemaekers

### 4.3. SELF AND OTHER FUNDED PHD PROJECTS

**Colelli, C.**

*A study of the impasto pottery from the Timpone della Motta di Francavilla Marittima (Calabria, Italy)*

Promotor: Prof. P.A.J. Attema

**Comis, S.**

*Het textiel van Spitsbergen*

Promotor: Prof. L. Hacquebord

**Drenth, E.**

*The Beaker Cultures in Northwest Europe*

Promotor: Prof. D.C.M. Raemaekers

**Elevelt, S.**

*Subsistence en sociale stratificatie in de Sibaritide in de periode Midden-Bronstijd – Vroege IJzertijd*

Promotor: Prof. P.A.J. Attema

**Hao Qi**

*The origin of early agriculture at the middle and lower reaches of the yellow river*

Promotores: Prof. D.C.M. Raemaekers, Prof. R.T.J. Cappers

**Masci, M.F.**

*The production of Oinotrian geometric pottery in southern Italy (Calabria, Basilicata and Campania) during the Iron Age: a comparative study on technological aspects*

Promotor: Prof. P.A.J. Attema

Co-promotor: Dr A.J. Nijboer

**Oome, N.**

*Hellenistisch aardewerk en Hellenitische sites in de Sibaritide*

Promotor: Prof. P.A.J. Attema

**Overmeer, A.B.M.**

*Dutch clinker-built ships in the 15<sup>th</sup> and 16<sup>th</sup> centuries* Prof. D.C.M. Raemaekers, Prof. H.R. Reinders & Dr

Promotor: A.F.L. van Holk

**Tol, G.W.**

*The archaeological map of Nettuno; site classification and analysis of a local settlement system (700 BC – 500 AD) in a regional context*

Promotor: Prof. P.A.J. Attema

**Weistra, E.**

*Archaic terracotta votive offerings from the Athenaion in Francavilla Marittima (Calabria, Italy)*

Promotores: Prof. P.A.J. Attema, Prof. M. Kleibrink

#### 4.4. PHD PROJECTS 2004-2010

This table lists GIA PhD students for the period 2004-2010.

RUG funded:

RUG = Employed PhD student

DPB = Dutch PhD Bursary

UE = Ubbo Emmius bursary

Other funding:

NWO = Dutch Research Council

NWOt = Dutch Research Council toptalent scholarship

B = Begin date, E = End date, D = Defence, S = Stopped

Name		2004	2005	2006	2007	2008	2009	2010
Aalders, Y.I.	NWO				1-8 B			
Abbink, B.P.	NWO	1-1 B			31-12 E		26-11 D	
Alessandri, L.	UE			31-10 E			29-10 D	
Beckerman, S.M.	DPB						1-11 B	
Dam, K.I.M. van	RUG			31-5 E		11-12 D		
Devriendt, I.I.J.A.L.M.	RUG	1-9 B				1-9 E		
Feiken, H.	NWO		1-9 B					31-3 E
Gustafsson, U.I.	NWO				1-3 B			
Haas, H.R. de	NWO				1-4 B			
Haas, T.C.A. de	RUG		1-9 B					28-2 E
Hao Qi	-						1-9 B	
Karstkarel, N.	RUG	1-6 E	9-6 D					
Klein Goldewijk, G.M.	NWOt				28-9 B			
Kruining, M.E. van	DPB						01-12 B	
Kruse, F.	UE					1-6 B		
Loon, T. van	NWOt							1-9 B
Matthews, S.G.	UE				1-9 B			
Milka, E.	NWO				31-10 E			
Mulder, S.A.	RUG	1-9 B	1-2 S					
Mulders, K.E.A.	RUG	31-5 E						
Neef, W. de	NWO							01-10B
Niekus, M.J.L.Th.	RUG				28-2 E			
Nieuwhof, A.	RUG			1-4 B			31-3 E	
Nobles, G.R.	NWO						1-11 B	
Ratliff, M.L.	UE				1-10 B (ICOG)		1-9 (GIA)	31-12 S
Roura, R.M.	UE		1-3 B				28-2 E	
Satijn, O.	NWO			30-4 E				
Schepers, M.	DPB						1-9 B	
Smit, B.I.	NWO	1-1 B			31-12 E			
Tensen, M.A.	RUG	15-8 E						
Terpstra, T.K.	RUG						1-1 B	
Thilderqvist, J.G.M.	UE		1-9 B				31-8 E	
Wiersma, C.W.	RUG							1-11 B
Willemsen, S.L.	DPB					1-9 B		
Woltinge, I.	NWO			1-9 B				

## 5. EMERITI

### **Kleibrink, M.**

#### *Research activities*

During the 'Giornate Archeologiche Francavillese', an annual event hosted by the mayor of Francavilla Marittima, the guidebook on the 'LAGARIA' Archaeological Park (near Francavilla Marittima) was presented together with a trial version of the Virtual Museum Francavilla Website by M. Kleibrink and E. Weistra. The finished edition will be online from 1 April 2011.

Together with L. Barresi, Kleibrink worked on the publication of the protohistoric matt painted pottery (9<sup>th</sup>-8<sup>th</sup> century BC) decorated in the 'Undulating Band Style' and, with M. Fasanelli Masci, on pottery decorated in the 'Crosshatching Band Style', both from excavations at Francavilla Marittima (1991-2004) (both to be published in 2011.). Together with E. Weistra, Kleibrink is preparing a book on the iconography and cults of the Athenaion on the Timpone della Motta at Francavilla Marittima, which will be published in 2011. In June and July as well as from the end of October till mid-December she worked in the Francavilla Marittima excavation storerooms.

#### *Publications*

Kleibrink, M., 2010. *Parco Archeologico "Lagaria" a Francavilla Marittima presso Sibari, Guida*. Rossano, Associazione 'Lagaria' Onlus, 159.

Kleibrink, M., 2010. Paola Zancani Montuoro e la Dea Athena, *Atti VIII Giornata Archeologica Francavillese*. Francavilla Marittima, 13-21

#### *Lectures*

April, Prague (Czech Republic). Charles University, 'The Oinotrian civilisation in Calabria'.

November: Theater City Hall Francavilla Marittima, *Giornata Archeologica*, 'Episodi degli Scavi Stoop 1963-69'.

December, Theater Liceo Scientifico Trebisacce, 'La Dea di Francavilla- *Lagaria*'.

### **Reinders, H.R.**

#### *Research activities*

In 2010 Waterbolk and Reinders continued their study of the habitation history of medieval Pesse (Iron Age until early medieval times). Two articles about the results will be prepared for publication in 2011. Van Westing and Reinders prepared two publications about the Zwartendijksterschans and three small forts in Drenthe.

In July the GIA continued the excavation of the House of the Tub in Hellenistic Halos. A preliminary report about the 2007-2009 field seasons is ready for publication in the periodical *Pharos*. In November Reinders and De Roever studied the grindstones and metal artefacts from the House of the Tub. Preliminary catalogues are available.

In 2010 three PhD theses, supervised by Reinders in cooperation with Zimmermann and Attema, were defended at the University of Groningen by J. Grimm, D. Gerrets and M. Haagsma.

#### *Publications*

Reinders, H.R. 2009. Scheepsarcheologie, reconstructie en replicabouw. In: G. Moeyes, F. Looimeijer & T. Mostert (red.), *Met reconstructie bouwen aan kennis* (Berichten van het Willem Vos Fonds 2). Lelystad, Willem Vos Fonds, 21-31.

Reinders, H.R. 2010. Vergeten erfgoed: de Grieks-Turkse grens van 1832. *Paleo-aktueel* 21, 109-116.

Westing, H. van & H.R. Reinders, 2010. De Zwartendijksterschans. *Waardeel* 4, 28-33.

## **Waterbolk, H.T.**

### *Research activities*

The study of the archaeology and history of the Drenthe village of Pesse was continued with Reinders. A third paper is now in preparation, dealing with its habitation in the early medieval, Roman and late prehistoric periods. For a Festschrift, a paper was written on the discovery of the Palaeolithic and Mesolithic in the Netherlands by amateur archaeologists in the period between the two World Wars. A comparative study was made of early Neolithic house plans in Europe. A paper on the Drenthe landscape in the early medieval period was prepared for a volume to be published by the Drents Praehistorische Vereniging.

### *Publications*

- Waterbolk, H.T., 2010. Wonen op de wadden. 1500 jaar boerderijbouw op onbedijkte kwelders (Lezingenreeks Waddenacademie 1). Leeuwarden.
- Delvigne J.J. & H.T. Waterbolk, 2010. J.F. Steenhuis, A.E. van Giffen en het begin van het wierdenonderzoek. *Jaarverslagen Vereniging voor Terpenonderzoek* 93, 35–62.
- Reinders H.R. & H.T. Waterbolk, 2009. Archeologie en geschiedenis van Pesse. I. De marke van Pesse en de opgravingen in het middeleeuwse oude centrum. *Nieuwe Drentse Volksalmanak* 126, 169–201.
- Reinders H.R. & H.T. Waterbolk, 2009. Archeologie en geschiedenis van Pesse. De middeleeuwse kapel van Bultinge. *Nieuwe Drentse Volksalmanak* 126, 203–213.

## 6. PUBLICITY

### 6.1. DOCUMENTATION

In addition to the regular requests for the use of GIA images, in 2010 attention was paid to the provision of descriptions of present/non-present documentation for a national workflow of non-elaborated excavations for students. For the Odyssee applications, comparable requests were submitted.

### 6.2. PRESS

#### **Attema, P.A.J.**

Fall 2010: *ARTES* (3), article 'NWO honoreert drie onderzoeksprojecten van mediterrane archeologen'.

#### **Avango, D.**

March-April: *Website of the Swedish Polar Research Secretariat*, Blog of LASHIPA 8 at three websites: 1) [www.polar.se](http://www.polar.se) (in Swedish), 2) [www.pooljaar.nl](http://www.pooljaar.nl) (in Dutch) and 3) [www.lashipa.nl](http://www.lashipa.nl) (in English).

December, *Swedish National Radio*, Science radio history programme on mining in the Arctic.

#### **Gustafsson, U.I.**

25 January: *British Antarctic Surveys internal newspaper*, interview on the LASHIPA 8 fieldwork in the Antarctic.

16 December: *Universiteitskrant*, interview 'Two months of darkness'.

#### **Haas, H.R. de**

26 November: *De Poolnacht van Groningen Publieksdagen*, poster presentation and opportunity to be interviewed.

#### **Hacquebord, L.**

7 May: *Dagblad van het Noorden*, interview 'Groningse professor op expeditie naar Antarctica'.

8 May: *Dagblad van het Noorden*, interview 'De mythe van het ongerepte Antarctica'.

10 August: *Hoe? Zo! Radio*, 'De strijd om de Noordpool is begonnen', participation in a scientific special on the geopolitical war caused by the melting of the ice caps.

30 October: *Bionieuws*, interview 'Eeuwenoude voetafdrukken op de polen'.

1 November: *Natura*, article 'In de voetsporen van Willem Barentsz', and article K. de Heer on research in Spitsbergen.

11 November: *UK Wetenschap*, interview 'Ijskoud aan de top'.

21 November: *VPRO (radio) OVT*, interview 'Op walvisjacht naar Spitsbergen'.

1 December: *NRC*, newspaper article 'Minimal poolmuziek' on the publication *Op walvisjacht naar Spitsbergen*.

#### **Holk, A.F.L. van**

12 March: *Scheepsarcheologisch Nieuws*, Vervolgonderzoek IFMAF opgraving.

14 April: *Flevopost*, interview 'Schepen als schakels. Verbondenheid in ruimte en tijd'.

14 April: *Omroep Flevoland*, interview 'Schepen als schakels. Verbondenheid in ruimte en tijd'.

27 April: *VPRO radio programme 'De Avonde'*, interview 'Schepen als schakels. Verbondenheid in ruimte en tijd'.

12 June: *BBC Coast*, interview 'Excavation shipwreck NT 25, Kraggenburg'.

14 June: *Flevopost Dronten*, interview 'Excavation shipwreck NT 25, Kraggenburg'.

7 July: *Stentor*, interview 'Excavation shipwreck NT 25, Kraggenburg'.

15 July: *Archeonet Vlaanderen*, publication 'Excavation shipwreck NT 25, Kraggenburg'.

15 July: *Omroep Flevoland*, interview 'Excavation shipwreck NT 25, Kraggenburg'.

16 July: *Spits*, interview 'Excavation shipwreck NT 25, Kraggenburg'.

19 July: *Stentor*, interview 'Excavation shipwreck NT 25, Kraggenburg'.  
21 July: *Flevopost*, interview 'Excavation shipwreck NT 25, Kraggenburg'.

**Loonen, M.J.J.E.**

4 January: *Bloggende Wetenschapper RUG*, Weblog 'Sneeuw'.  
8 January: *Bloggende Wetenschapper RUG*, Weblog 'Gansologie'.  
11 January: *Bloggende Wetenschapper RUG*, Weblog 'Nederland-België'.  
13 January: *Bloggende Wetenschapper RUG*, Weblog 'Ik zag met eigen ogen'.  
13 January: *Nieuws uit de Natuur*, providing background information for the show 'Pooldieren'.  
19 January: *Bloggende Wetenschapper RUG*, Weblog 'Wie dit schrijft is gek'.  
20 January: *Nieuws uit de Natuur*, providing background information for the show, 'Ganzen'.  
24 January: *Bloggende Wetenschapper RUG*, Weblog 'Die dag verloor ik mijn bewustzijn'.  
28 January: *Bloggende Wetenschapper RUG*, Weblog 'Kwakkelwinter'.  
17 April: *RTV Noord Adams Appel*, interview 'Wat hebben we te zoeken op de Noordpool: ganzen'.  
14 June: *Weblog: www.poolstation.nl*, 47 contributions, final one on 15 August 2010.  
15 June: *Weblog: http://pooljaar.nl/vogels*, 5 contributions, final one on 8 september 2010.  
4 November: *BNR Nieuws Radio*, 'Beheer Oostvaardersplassen.' Participation in discussion in a special on the management of the Oostvaardersplassen.  
5 November: *Fries Dagblad*, newspaper article 'Dieren Oostvaardersplassen geen mensen'.  
12 November: *Dagblad van het Noorden*, lecture 'Poolnacht van Groningen'.  
26-27 November: Poolmarkt: Poolnacht van Groningen.  
15 December: *Lokale omroep Beatrix Kinderziekenhuis UMCG*, interview 'Pooldieren als de kleren van een eskimo'.  
18 December: *Filmfestival Frozen Images*, director of the discussion after a movie on polar bears.

**Nicolay, J.A.W.**

26 April: *Leeuwarder Courant*, newspaper article 'Universiteit graaft bij kerkterp in Jelsum'.  
28 April: *Radio Middelzee*, interview on Jelsum.  
12 August: *Leeuwarder Courant*, newspaper article 'Graven in Jelsumer terp'.  
13 August: *Leeuwarder Courant*, newspaper article 'Archeologische doorsnede van 100 meter in Jelsum'.  
19 August: *Leeuwarder Courant*, newspaper article 'Twee hondenschedels'.  
25 August: *Friesch Dagblad*, newspaper article 'Spectaculair aantal lagen gevonden in terp Jelsum'.  
26 August: *Leeuwarder Courant*, newspaper article 'Stokoude boerderij'.  
26 August: *Omrop Fryslan (radio and TV)*, interview 'Hjoed: Alde berneskedel fûn by opgravings yn Jelsum'.  
27 August: *Telegraaf*, newspaper article 'Romeins schedeltje gevonden'.  
27 August: *Dagblad van het Noorden*, newspaper article 'Kinderschedeltje gevonden'.  
28 August: *Omrop Fryslan (radio)*, interview 'Soad folk by opgraving Jelsum'.  
30 August: *Friesch Dagblad*, newspaper article 'Jelsumer opgraving trekt zo'n duizend bezoekers'.  
2 September: *Leeuwarder Courant*, newspaper article 'Offers aan de goden'.  
10 September: *Leeuwarder Courant*, newspaper article 'Speld van een Friese kolonist'.  
3 December: *Omrop Fryslan (radio)*, interview 'RUG ûndersiket terpen'.  
4 December: *Leeuwarder Courant*, newspaper article 'Anjum was de Lauwerszee zat en pionierde met dijken'.

**Nieuwhof, A.**

26 August: *Omrop Fryslan*, interview 'Hjoed: Alde berneskedel fûn by opgravings yn Jelsum'.

**Prummel, W.**

3 November: *RTV Noord*, interview with three children who found a molar of a woolly mammoth (*Mammuthus primigenius*).

**Terpstra, T.K.**

12 February: *Greenlandic Newspaper Sermitsiaq*, newspaper article 'Ole Korneliussen hollandimiusut/Ole Korneliussen på hollandsk'.  
11 November: *Universiteitskrant*, interview 'Met je rugzak naar het niets'.

**Woltinge, I.**

28 November: Ice Age excursion during the 'Poolnacht van Groningen', together with J. Bongers (De Steekproef).



## 7. AWARDS

### **Haas, H.R. de**

12 June: Oslo International Polar Year, Open Science Conference, *Outstanding Oral Presentation Award*, Free conference attendance in 2012.

## 8. PUBLICATIONS

Number of refereed articles (ra), non-refereed articles (nra), books (b), book chapters (bc), PhD-theses (phd), conference papers (cp), professional publications (pro), popular publications (pop) and other research output (orp).

<i>Department</i>	<i>ra</i>	<i>nra</i>	<i>b</i>	<i>bc</i>	<i>phd</i>	<i>cp</i>	<i>pro</i>	<i>pop</i>	<i>orp</i>
Prehistoric & Protohistoric Archaeology	0	4	3	6	3	5	5	13	5
Mediterranean Archaeology	4	4	3	9	2	4	4	9	4
Arctic Archaeology	4	2	1	6	0	3	1	3	2
<b>Total</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>21</b>	<b>5</b>	<b>12</b>	<b>10</b>	<b>25</b>	<b>11</b>

Total: **109** publications

### 8.1. Refereed articles

#### *Prehistoric and Protohistoric Archaeology*

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#### *Mediterranean Archaeology*

- Galestin, M.C., 2010. Roman artefacts beyond the northern frontier: Interpreting the evidence from The Netherlands. *European Journal of Archaeology* 13 (1), 64–88.
- Nijboer, A.J., 2009/10. The two Radiocarbon dates of Roma, Tenuta Radicicoli Maffei, Bronzo Medio 3. *Bullettino della Commissione Archeologica Comunale di Roma* 109, 51–56.
- Voutsaki, S., 2010. Agency and personhood at the onset of the Mycenaean period. *Archaeological Dialogues* 17 (1), 65–92.
- Voutsaki, S., S. Dietz & A.J. Nijboer, 2010. Radiocarbon analysis and the history of the East Cemetery, Asine. *Opuscula. Annual of the Swedish Institutes in Athens and Rome*, 31–52.

#### *Arctic Archaeology*

- Avango, D., L. Hacquebord, Y. Aalders, H.R. de Haas, U.I. Gustafsson & F. Kruse, 2010. Between markets and geo-politics: natural resource exploitation on Spitsbergen from 1600 to the present day. *Polar Record* 47 (1), 29–39.
- Hübner, C.E., I.M. Tombre, L.R. Griffin, M.J.J.E. Loonen, P. Shimmings & I.S. Jónsdóttir, 2010. The connectivity of spring stopover sites for geese heading to arctic breeding sites. *Ardea* 98, 145–154.
- Roura, R.M., 2010. Monitoring the transformation of historic features in Antarctica and Svalbard: Local processes and regional contexts. *Polar Record* 46 (4), 289–311.
- Stech, M., E. Kolvoort, M.J.J.E. Loonen, K. Vrieling & J.D. Kruijer, 2010. Bryophyte DNA sequences from faeces of an arctic herbivore, barnacle goose (*Branta leucopsis*). *Molecular Ecology Resources* 11 (2), 404–408.

### 8.2. Non-refereed articles

#### *Prehistoric and Protohistoric Archaeology*

- Cappers, R.T.J., B. van Geel, H.A. Groenendijk, J. Streefkerk, I. Stuijts, C. Vermeeren & H. Woldring, 2010. In memoriam Wil Casparie and Bibliography. *Palaeohistoria* 51/52, 1–7.
- Groenendijk, H.A., 2010. Kroniek Cultureel Erfgoed 2009. *Historisch Jaarboek Groningen* 2010, 142–165.
- Matthews, S., 2010. Notes on a typological scheme for Atlantic Rapiers in France. *Bulletin de l'Association pour la Promotion des Recherches sur l'Age du Bronze* 7, 82–85.

Nicolay, J. A.W., 2010. Settlement research and material culture in the northern Netherlands: Herrenhofe and other evidence of socio-political differentiation. *Siedlungs- und Küstenforschung im südlichen Nordseegebiet* 33, 119–132.

### **Mediterranean Archaeology**

Attema, P.A.J., T.C.A. de Haas & G.W. Tol, 2010. The Astura and Nettuno surveys of the Pontine Region Project (2003–2005), 2nd and final report. *Palaeohistoria* 51/52, 169–327.

Galestin, M.C., 2010. Tolsum revisited: how the Frisian ox disappeared. *Palaeohistoria* 51/52, 9–25.

Galestin, M.C., E. Kramer & H.A. Laagland, 2009. Het geheim van Tolsum: Inleiding. *It Beaken* 71 (3/4), 179–198.

Leusen, P.M. van, 2010. Archaeological sites recorded in the Monti Lepini by the GIA Hidden Landscapes survey campaigns in the Monti Lepini (Lazio, Italy), 2005–2009. With contributions by G.W. Tol & C. Anastasia. *Palaeohistoria* 51/52, 329–424.

### **Arctic Archaeology**

Pacyna, E.G., J.M. Pacyna, K. Sundseth, J. Munthe, K. Kindbom, S. Wilson, F. Steenhuisen & P. Maxson, 2010. Global emission of mercury to the atmosphere from anthropogenic sources in 2005 and projections to 2020. *Atmospheric Environment* 44, 2487–2499.

Sjögersten, S., D.P.J. Kuijper, R. van der Wal, M.J.J.E. Loonen, A.H.L. Huiskes & S.J. Woodin, 2010. Nitrogen transfer between herbivores and their forage species. *Polar Biology* 33, 1195–1203.

## **8.3. Books**

### **Prehistoric and Protohistoric Archaeology**

Boon, H., J.N. Bottema-Mac Gillavry, S.Y. Comis, J.T. van Gent, E. Grefhorst, P. de Hengst, I. Joosten, G. de Lange, G.J. de Langen, J.A.W. Nicolay, D. Postma, W. Prummel, P.T.A. de Rijk, J. Tolsma & P.C. Vos, 2010. *Terpbewoning in oostelijk Friesland. Twee opgravingen in het voormalige kweldergebied van Oostergo* (Groningen Archaeological Studies 10) (1<sup>st</sup> ed.). Groningen, Barkhuis Publishing.

Cappers, R.T.J., R. Neef, U. Heussner & H. Woldring, 2010. *Manual of Palaeobotany 1*. Groningen, Barkhuis Publishing.

Prummel, W., J.T. Zeiler & D.C. Brinkhuizen (eds.), 2010. *Birds in Archaeology. Proceedings of the 6th meeting of the ICAZ Bird Working Group in Groningen (23.8-27.8 2008)* (Groningen Archaeological Studies 12). Groningen, Barkhuis Publishing/University Library.

### **Mediterranean Archaeology**

Attema, P.A.J., G.J. Burgers & P.M. van Leusen, 2010. *Regional Pathways to Complexity: settlement and land-use dynamics from the Bronze Age to the Republican period* (Amsterdam Archaeological Studies 13) (1<sup>st</sup> ed.). Amsterdam, Amsterdam University Press.

Attema, P.A.J., T.C.A. de Haas & G.W. Tol, 2010. *Between Satricum and Antium, Settlement Dynamics in a Coastal Landscape in Latium Vetus* (Babesch Supplement 18) (1<sup>st</sup> ed.). Leuven, Peeters.

Philippa-Touchais, A, G. Touchais, S. Voutsaki & J. Wright (eds.), 2010. *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age* (Supplément Bulletin de Correspondance Hellénique). Paris/Athens, De Boccard.

### **Arctic Archaeology**

Hacquebord, L., 2010. *Op walvisjacht naar Spitsbergen. Een hachelijke onderneming in de Noordelijke IJszee, 1774-1778*. Zutphen, Walburg Pers.

## 8.4. Book chapters

### ***Prehistoric and Protohistoric Archaeology***

- Arnoldussen, S. & J.W. de Kort, 2010. A disturbed Iron Age barrow at Rhenen – Elsterberg (Unitas 4). In: D.R. Fontijn (ed.), *Living Near the Dead: The Barrow Excavations of Rhenen-Elst: Two Millennia of Burial and Habitation on the Utrechtse Heuvelrug*, Chapter 8, 119–130. Leiden, Sidestone.
- Grefhorst, E. & W. Prummel, 2010. Dieren van de huisterp Birdaard-Roomschotel. In: J.A.W. Nicolay (ed.), *Terpbewoning in oostelijk Friesland. Twee opgravingen in het voormalige kweldergebied van Oostergo*, Chapter 4 (Groningen Archaeological Studies 10). Groningen, Barkhuis Publishing/University Library, 269–281.
- Nicolay, J.A.W., 2010. Response to case study 1: Power formation and the rise of central places in the Elbe-Weser region and the coastal area of the northern Netherlands - a comparison. In: B. Ludowici, H. Jons, S. Kleingartner, J. Scheschkewitz & M. Hardt (eds.), *Trade and communication networks of the first millenium AD in the northern part of Central Europe: central places, beach markets, landing places and trading centres*. Hannover, Landesmuseum Hannover, 90–100.
- Peeters, J.H.M., 2010. Early Swifterbant pottery from Hoge Vaart-A27 (Almere, The Netherlands). In: B. Vanmontfort, L. Amkreutz, L.P. Louwe Kooijmans & L. Verhart (eds.), *Pots, farmers and foragers. Pottery traditions and social interaction in the earliest Neolithic of the Lower Rhine Area* (Archaeological Studies Leiden University 20). Leiden, Leiden University Press, 151–160.
- Prummel, W. & J.T. van Gent, 2010. Dieren van de middeleeuwse terp Anjum-Terpsterweg. In: J.A.W. Nicolay (ed.), *Terpbewoning in oostelijk Friesland. Twee opgravingen in het voormalige kweldergebied van Oostergo*, Chapter 3 (Groningen Archaeological Studies 10). Groningen, Barkhuis Publishing/University Library, 248–268.
- Woldring, H., P. Cleveringa & D.G. van Smeerdijk, 2010. Taxus vroeger en nu: de veelzijdige naaldboom/ Taxus then and now: the versatile coniferous tree. In: C. Bakels, K. Fennema, W.A. Out & C. Vermeeren (eds.), *Van Planten en Slakken/Of Plants and Snails* (1st ed.). Leiden, Sidestone Press, 247–270.

### ***Mediterranean Archaeology***

- Attema, P.A.J., T. Derks & G.W. Tol, 2010. The ‘Carta Archeologica’ of Nettuno, evidence for late antique and early medieval settlement on the coast of South Lazio near Antium and Torre Astura (Italy). In: M. Pasquinucci, S. Menchelli & S. Santoro (eds.), *LRCW 3: Late Roman coarse wares, cooking wares and amphorae in the Mediterranean: archaeology and archaeometry*. Oxford, Archaeopress, 447–457.
- Kovatsi, L., S. Kouidhou-Andreou, D. Nikou, S. Triantaphyllou, C. Zerner & S. Voutsaki, 2010. Ancient DNA analysis of human remains from Middle Helladic Lerna. In: A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright (eds.), *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age*. Supplément Bulletin de Correspondance Hellénique, 489–494. Paris/Athens, De Boccard.
- Philippa-Touchais, A., G. Touchais, S. Voutsaki & J. Wright, 2010. Introduction. In: A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright (eds.), *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age* (Supplément Bulletin de Correspondance Hellénique), 3–5. Paris/Athens, De Boccard.
- Philippa-Touchais, A., G. Touchais, S. Voutsaki & J. Wright, 2010. Epilogue. In: A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright (eds.), *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age* (Supplément Bulletin de Correspondance Hellénique), 1037–1039. Paris/Athens, De Boccard.
- Voutsaki, S., 2010. The Middle Helladic period. In: E. Cline (ed.), *Oxford Handbook for Aegean Archaeology*, 99–112. Oxford, Oxford University Press.
- Voutsaki, S., 2010. The Argolid. In: E. Cline (ed.), *Oxford Handbook for Aegean Archaeology*, 598–613. Oxford, Oxford University Press.
- Voutsaki, S., 2010. From the kinship economy to the palatial economy: The Argolid in the 2<sup>nd</sup> millennium BC. In: D. Pullen (ed.), *Political Economies in the Aegean Bronze Age*, 86–111. Oxford, Oxbow.
- Voutsaki, S., 2010. The domestic economy in Middle Helladic Asine. In: A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright (eds.), *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age* (Supplément Bulletin de Correspondance Hellénique), 765–779. Paris/Athens, De Boccard.
- Voutsaki, S., A.J. Nijboer & C. Zerner, 2010. The radiocarbon analysis of MH burials from Lerna. In: A. Philippa-Touchais, G. Touchais, S. Voutsaki & J. Wright (eds.), *MESOHELLADIKA: The Greek Mainland in the Middle Bronze Age* (Supplément Bulletin de Correspondance Hellénique), 641–647.

Paris/Athens, De Boccard.

### **Arctic Archaeology**

- Hacquebord, L. & Y. Aalders, 2010. Cross-cultural contacts between European whalers and Russian hunters. In: C. Westerdahl (ed.), *A Circumpolar Reappraisal: The Legacy of Gutorm Gjessing (1906-1979)*, 111–121 (1st ed.). Oxford, Archaeopress.
- Hacquebord, L., 2010. The Netherlands: Beset in the Ice of the Kara Sea. In: S. Bar & C. Lüdecke (eds.), *The History of the International Polar Years (IPYs). From Pole to Pole*, 63–71. Heidelberg, Springer.
- Hacquebord, L., 2010. The Dutch Contribution to the Second International Polar Year 1932-1933. In: S. Barr & C. Lüdecke (eds.), *The History of the International Polar Years (IPYs). From Pole to Pole*, 184–190. Heidelberg, Springer.
- Hacquebord, H., 2010. Noordelijk Zeekleilandschap. In: S. Barends (ed.), *Het Nederlandse landschap. Een historisch geografische benadering*, 16–31 (10th ed.). Utrecht, Matrijs.
- Roura, R.M., 2010. Cultural heritage tourism in Antarctica and Svalbard: Patterns, impacts, and policies. In: C. M. Hall & J. Saarinen (eds.), *Tourism and change in the Polar Regions: Climate, environment and experiences, contemporary geographies of tourism, leisure and mobility*, Chapter 10, 180–203 (1st ed.). London/New York, Routledge.
- Starkov, V.F., L. Hacquebord & D. Avango, 2010. Archaeological Studies at Svalbard Archipelago according to IPY Programme. In: *Changes of Natural Environment and Climate III. Natural and possible consequent human-induced catastrophes*, 301–307 (1st ed.). Moscow, IG Russian Academy of Sciences.

## **8.5. PhD theses**

### **Prehistoric and Protohistoric Archaeology**

- Gerrets, D.A., 2010. *Op de grens van water en land*. PhD thesis University of Groningen.
- Grimm, J.M., 2010. Animal keeping and the use of animal products in medieval Emden (Lower Saxony, Germany). PhD thesis University of Groningen.
- Smit, B.I. 2010. *Valuable flints: research strategies for the study of early prehistoric remains from the pleistocene soils of the Northern Netherlands*. PhD thesis University of Groningen.

### **Mediterranean Archaeology**

- Haagsma, M.J., 2010. *Domestic economy and social organization in New Halos*. PhD thesis University of Groningen.
- Lindhout, E. van 't, 2010. *Bouwen in Latium in de archaische periode*. PhD thesis University of Groningen.

### **Arctic Archaeology**

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## **8.6. Conference Papers**

### **Prehistoric and Protohistoric Archaeology**

- Peeters, J.H.M., 2010. Modelling Mesolithic-Neolithic land-use dynamics and archaeological heritage management: an example from the Flevoland Polders (The Netherlands). In: F. Niccolucci & S. Hermon (ed.), *Beyond the artifact*, 291–295. CAA, Prato 2004. Oxford, Archaeopress/Archaeolingua.
- Peeters, J.H.M., 2010. Breaking down an Early Neolithic palimpsest site: some notes on the concept of Percolation Theory and the understanding of spatial pattern formation. In: F. Niccolucci & S. Hermon (eds.), *Beyond the artifact*, 423–428. CAA, Prato 2004. Oxford, Archaeopress/Archaeolingua.
- Prummel, W. & E. Drenth, 2010. Two tureen-amphorae of the TRB West Group decorated with the caput femoris of a long-eared owl (*Asio otus*). In: W. Prummel, J.T. Zeiler & D.C. Brinkhuizen (eds.), *Birds in Archaeology. Proceedings of the 6th meeting of the ICAZ Bird Working Group in Groningen (23.8-27.8.2008)*, Chapter 19 (Groningen Archaeological Studies 12). Groningen, Barkhuis Publishing/University Library, 197–201.

- Raemaekers, D.C.M. & J.P. de Roever, 2010. The Swifterbant pottery tradition (5000-3400 BC): matters of fact and matters of interest. In: B. Vanmontfort, L. Louwe Kooijmans, L. Amkreutz, & L. Verhart (eds.), *Pots, farmers and foragers. Pottery traditions and social interaction in the earliest Neolithic of the Lower Rhine Area*, 135–149 (Archaeological Series Leiden University 20). Leiden, Leiden University Press.
- Salisbury, R.B. & I. Woltinge (eds.), 2010. Socio-sedimentary dialectics (session report) (*The European Archeologist* 34), 64–65.

### **Mediterranean Archaeology**

- Attema, P.A.J., T. Derks & G.W. Tol, 2010. The ‘Carta Archeologica’ of Nettuno, evidence for late antique and early medieval settlement on the coast of South Lazio near *Antium* and Torre Astura (Italy). In: M. Pasquinucci, S. Menchelli & S. Santoro (eds.), *LRCW 3: Late Roman coarse wares, cooking wares and amphorae in the Mediterranean: archaeology and archaeometry*, 447–457. Oxford, Archaeopress.
- Leusen, P.M. van, 2010. New approaches to the study of archaeological landscapes. Session introduction. In: F. Niccolucci & S. Hermon (eds.), *Beyond the Artifact*, 121–122. CAA, Prato 2004. Budapest, Archeolingua.
- Nijboer, A.J. & P.A.J. Attema, 2010. Cultural characteristics of the ancient community living at Crustumerium and the excavations of the Groningen Institute of Archaeology at the Monte Del Bufalo Necropolis. *Bollettino di Archeologia on line* ([http://151.12.58.75/archeologia/index.php?option=com\\_content&view=article&id=60&Itemid=60](http://151.12.58.75/archeologia/index.php?option=com_content&view=article&id=60&Itemid=60)).
- Verhagen, P., H. Kamermans, P.M. van Leusen & B. Ducke, 2010. New developments in archaeological predictive modelling. In: T. Bloemers, H. Kars, A. Van der Valk & M. Wijnen (eds.), *The Cultural landscape & heritage paradox. Protection and development of the Dutch archaeological-historical landscape and its European dimension*, 431–444. Amsterdam, Amsterdam University Press.

### **Arctic Archaeology**

- Coulson, S., G.W. Gabrielsen, C.E. Hübner & M.J.J.E. Loonen, 2010. Terrestrial ecosystem, a flagship program for Ny-Ålesund. Concluding document from workshop 6-8 May, 2009. *Brief Report Norwegian Polar Institute* 20, 1–42. Longyearbyen, Svalbard Science Forum.
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- Niekus, M.J.L.T., J.R. Beuker, D.C. Brinkhuizen, L. Johansen, H. Paas & D. Stapert, 2010. Speuren naar Neandertalers: een vuistblijrijke vindplaats op het Drents Plateau bij Assen. *Nieuwe Drentse Volksalmanak* 127, 99–114.
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## **8.8. Publications aimed at the general public (Popular publications)**

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### **8.9. Other research output**

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