

Centuriated landscapes in Italy and the Iberian peninsula: between methodological innovation and new historical insights

A two-day workshop held at the KNIR, 28-29 June 2022, organised by Anita Casarotto, Tymon de Haas & Tesse Stek, with the generous support of the Prins Bernhard Cultuurfonds and the KNIR.

The phenomenon of centuriation played a crucial role in Rome's Imperialistic expansion. These large-scale land division systems drained and parceled out the lands conquered by Rome, and transformed thousands of square kilometers throughout the Mediterranean into rationally ordered, agricultural landscapes. As such, they are considered one of the most powerful symbols of Rome's triumph over indigenous peoples, and nature itself.

On closer inspection, however, many questions regarding the function and historical context of centuriations remain unanswered. This is largely the result of a persistent scholarly focus on the *reconstruction* of these systems; this rightly highlights the massive scale of centuriations and their role in the evolution of cultural landscapes, but tells us little about their chronology and impact on settlement and land use. Moreover, few attempts have been made to draw together the evidence from the many regional reconstructions into a broader synthetic framework.

Several methodological innovations (e.g., GIS applications, remote sensing techniques, geo-archaeological work, field survey, excavations and environmental studies) contribute to advance the study of centuriated landscapes. In various contexts, scholars now combine the morphological reconstruction of centuriations with the archaeological study of their physical remains (roads, ditches) and associated settlements. Such more integrated approaches may provide important new insights into the context in which centuriations were laid out and the actual impact they had on, amongst others, environment, settlement and economy.

This workshop seeks to bring together some of the leading research groups working on centuriated landscapes in Italy, Portugal and Spain. Its aim is twofold: first, to exchange ideas by comparing methodologies and approaches of these different groups and reviewing the historical insights they have generated; and second, to establish a common research agenda and explore possibilities for future collaborations between different research groups. To this end, the first day will present a series of papers highlighting recent work on centuriations in Italy and the Iberian peninsula by the various research teams; this is followed on day 2 by two keynotes that forms the starting point for a roundtable discussion to establish a common research agenda and discuss potential collaborations.

Program

Tuesday 28 June

- 9:30-10:00 Coffee/Tea Break
- 10:00-10:15 Welcome (*Dr. Tesse Stek*)
- 10:15-10:30 Introduction (*Dr. Casarotto/ Dr. de Haas*)

Session 1: Centuriation research in Italy

- 10:30-11:00 Centuriated Luceria: past, present and future research
(*Yeong-chei Kim, Seoul National University*)
- 11:00-11:30 Centuriated landscapes and early Roman Imperialism in central Tyrrhenian Italy: an integrated archaeological approach
(*Tymon de Haas, University of Groningen*)
- 11:30-12:00 Coffee/Tea Break
- 12:00-12:30 Centuriated landscapes of the Middle Adriatic area. The land division of Picenum and Gallic countryside
(*Enrico Giorgi, Università di Bologna*)
- 12:30-13:00 “It’s a great game of chess that’s being played”. The moves across the centuriations of the Decima Regio
(*Jacopo Turchetto, Università di Padova*)
- 13:00 – 13:30 What happens after the Romans to a centuriated landscape: examples from the hinterland of Ravenna
(*Michele Abballe, Ghent University/University of Verona; Marco Cavalazzi, University of Bologna/Michigan University; Celeste Fiorotto, University of Verona/Ghent University*)
- 13:30-15:00 Lunch Break

Session 2: Centuriation research in the Iberian peninsula

- 15:00-15:30 The archeomorphological analysis of centuriated landscapes: the case studies of Valentia, Saguntum and Saetabis
(*Maria Jesús Ortega, Josep Maria Palet Martínez, Catalan Institute of Classical Archaeology*)
- 15:30-16:00 The centuriated landscape of *Libia* (Herramelluri, Spain): Intensive survey on the Valpierre plain
(*Enrique Ariño Gil, University of Salamanca*)
- 16:00-16:30 The centuriated landscape of *Augusta Emerita* through LiDAR technology
(*Tomás Cordero Ruiz, Universidade NOVA de Lisboa*)
- 16:30-17:00 Coffee/Tea Break
- 17:00-17:30 The Bracara Augusta territory: aspects of a centuriated landscape (Hispania Citerior Tarraconensis)
(*Helena Carvalho, Universidade do Minho*)
- 17:30-18:00 The centuriated landscape of Pax Ivlia from an archaeogeographical perspective
(*Maria da Conceição Lopes, Universidade de Coimbra*)
- 18:00-18:30 Concluding remarks
(*Tesse Stek, KNIR*)

Conference dinner

Wednesday 29 June

- 9:30-10:00 Coffee/Tea Break
- 10:00-10:45 Keynote 1: Divided Landscapes in Ancient Italy
(*Jeremia Pelgrom, University of Groningen*)
- 10:45-11:30 Keynote 2: Centuriated landscapes in North-Eastern Hispania Tarraconensis. Conception and perspectives from Landscape Archaeology approaches
(*Josep Maria Palet Martínez, Catalan Institute of Classical Archaeology*)
- 11:30-12:00 Coffee/Tea Break
- 12:00-15:00 Roundtable discussion

Abstracts

Centuriated Luceria: past, present and future research

Yeong-chei Kim, Seoul National University

The extensive traces of Roman centuriation and its associated farms identified from aerial photographs near Lucera, ancient Luceria, in the plain of northern Apulia, were the subject of study by John Bradford and Barri Jones. Although their excavations at Luceria in 1949–50 and 1963–4 respectively were never properly published, these land divisions have been widely cited as evidence for the Gracchan agrarian reforms of the 130s/120s BC. This paper summarises the results of the re-analysis of the scattered records and dating evidence from the excavations of seven farms of Bradford and Jones and three other sites surveyed by Bradford in the *ager Lucerinus*. The findings suggest that the farms and associated grids in fact belong to Rome's establishment of a Latin colony at Luceria in 326 or 315/314 BC during the Second Samnite War, giving us, therefore, the earliest archaeologically attested Roman centuriation for colony, and that the farms were abandoned due to the Hannibalic War. This paper concludes by making suggestions for further research on the territory of Luceria with a view to future collaboration.

Centuriated landscapes and early Roman Imperialism in central Tyrrhenian Italy: an integrated archaeological approach

Tymon de Haas, University of Groningen

While the study of cartography and aerial photography has resulted in the identification of many ancient field systems in central Tyrrhenian Italy, archaeologically these field systems remain poorly understood, and their reconstruction, chronological context and historical significance remain hotly debated. To set the discussion on these systems on a firmer archaeological footing, this paper discusses recent fieldwork in the Pontine region that applied a range of (geo-)archaeological approaches to reconstruct and date one such centuriation and to assess its impact on environment and land use. This case study is subsequently placed within a broader historical and socio-economic context to argue for an important economic role of these land management projects in the context of mid-Republican Roman expansionism.

Centuriated landscapes of the Middle Adriatic area. The land division of Picenum and Gallic countryside.

Enrico Giorgi, Università di Bologna

The study of the Roman land settlement in the mid-Adriatic sector of the peninsula is a relatively recent field of research and still full of opportunities that deserve further investigation. Despite this, it is already possible to propose some preliminary remarks useful for framing the main themes that have emerged from these studies.

The first topic concerns farming techniques, which are necessarily conditioned by a geography that rarely offers large flat areas, but is instead characterised by hilly areas and short river terraces that follow the course of the rivers. This leads to the presence of centuriated blocks that follow one another along the valley, changing their orientation in order to facilitate surface draining. But this also explains the extension of large centuriated areas even on the low hillsides delimiting the low river valleys.

A second point is of a methodological nature and concerns the lack of trust placed by scholars on aerophotographic analyses and field surveys and the greater productivity of studies based on historical cartography. This choice is partly dictated by the strong river dynamism that determines profound changes in the landscape, but it also depends on precise methodological choices linked to the research directions of the various scholars.

Finally, a last question concerns the interpretation of the Roman centuriation as a historical phenomenon that marks the times of the conquest of the territory but that, in the case of the Picenian city of Ascoli, could anticipate these times and represent a form of adherence to a dominant political and cultural model, just like what is found in the study of material culture.

“IT’S A GREAT HUGE GAME OF CHESS THAT’S BEING PLAYED”. THE MOVES ACROSS THE CENTURIATIONS OF THE DECIMA REGIO

Jacopo Turchetto, Università di Padova

Within the framework of the researches on Roman centuriations, the north-eastern sector of the Italian peninsula has always been considered as a ‘case study’, due to the good state of preservation of the traces related to that landscape, which resembles a chessboard. Since the middle of the 19th century, indeed, the whole area has represented the focus of several studies aimed at detecting and reconstructing the dimensions, extensions, and modular units of all those centuriated grids, and, during the last decades, such a tradition has been maintained and carried on by the activities of the chair of Ancient Topography of the University of Padova. More recently, the interest towards the ancient territorial planning on the plains of the Veneto Region has been renewed, with the aim of approaching the question from a diachronic perspective and through a multi/inter-disciplinary collaboration among different expertise. In this context, the early stages of the research have been allowing to go beyond the traditional

schemes and to critically face some of the assumptions which have characterised the analysis of those landscapes so far, with reference to territorial exploitation, expropriation, relationship between Romans and local populations and, more generally, to the human and social values of the centuriations.

In this sense, the workshop will represent a fruitful opportunity to make the next 'move' and further reflect on those aspects, by comparing the preliminary results and the applied methodologies with similar experiences and practices developed in other contexts.

What happens after the Romans to a centuriated landscape: examples from the hinterland of Ravenna

Michele Abballe, Ghent University/University of Verona; Marco Cavalazzi, University of Bologna/Michigan University; Celeste Fiorotto, University of Verona/Ghent University

The idea that the centuriation is something more profound than a colossal infrastructure is slowly becoming more and more established, thanks also to the integration of several methods of investigation in addressing the topic. Moreover, in recent years, we are finally moving away from the dualistic view of what the fate of a centuriation may be: whether or not it has been preserved to the present day. In fact, more studies are giving importance to the impact these structures had on the landscape since they were created and then used, and finally, their fate once the Roman period was over. Focusing primarily on the latter aspect, we would like to present some results from the multidisciplinary research we have been conducting on the hinterland of Ravenna in the last few years. Integrating field surveys with remote sensing, geoarchaeological and environmental studies, we were able to shed more light on what happened here after the Roman period. The area is undoubtedly exceptional because of the continuity of use of the centuriation system and the creation of new field systems in the medieval period (perhaps as early as Late Antiquity). These works bore in mind the heritage left behind, maybe also in terms of knowledge, but especially considering the original infrastructure's preservation. This approach indeed paid off, ensuring the success of these new systems that still characterize the present landscape.

The archeomorphological analysis of centuriated landscapes: the case studies of Valentia, Saguntum and Saetabis

Maria Jesús Ortega & Josep Maria Palet Martínez, Catalan Institute of Classical Archaeology

Recent works have revealed that the origin of present Valencian cultural landscape is the implementation of several centuriated systems during the Roman period. The characterization of past settlement patterns and land-use through the application of various techniques in GIS has been essential for understanding the human impact in the Valencian plain, whose analysis presents great difficulties due in great part to the intense historical occupation and to the geomorphological processes typical of the Mediterranean alluvial plains. Likewise, a high degree of reliability in the results has been achieved by correlating the archeomorphological and historical-archaeological analysis in a GIS environment. Also the archaeological and

archaeomorphological survey and the analysis of the historical documentation have allowed verifying the hypotheses formulated through the archaeomorphological analysis in GIS.

These works have proved that road and field systems implemented in Valencia during the Roman imperial period have been determinant for the evolution of this landscape morphology and also that settlement location is due to multifactorial purposes, for settlements are linked to roads but also taking into account hydrology and topography.

The great extension of the centuriation linked to the city of Valentia allows us to propose a non-materialist interpretation of these systems and explore the symbolic conception of the Roman landscape and how centuriation was an example of this ideal.

This case study is similar to another Mediterranean territories like that ones' linked to the cities of Tarraco, Emporion and Barcino, where pollenological analysis have proved that the greatest part of the centuriation areas were not linked to agricultural exploitation but most of the areas remained forested.

The centuriated landscape of Libia (Herramelluri, Spain): Intensive survey on the Valpierre plain

Enrique Ariño Gil, University of Salamanca

Valpierre is a wide plain located on the right bank of the Oja -or Glera- river, in the Rioja region. It was probably a part of the territory of Libia, a Celtiberian and Roman city situated in Cerro del Piquillo (Herramelluri), about 4.5 km west of the Oja riverbed. This area was heavily occupied by humans in the medieval period –it was crossed by Saint James Way- and the written documentation of the region is especially abundant from the second half of the 11th century onwards. The archaeological-morphological study, combined with medieval documentation which includes toponyms associated with landscape structures, allows us to detect in Valpierre a regular grid of roads with an orientation of around 11° E, especially well preserved in the peripheral areas. In the western area of the plain, several kardines are preserved, although the decumani are almost completely missing. An intensive survey specifically aimed to detect off-site material has been carried out in the plain. The research has identified a first sequence dating from the Palaeolithic (Middle and Upper), with scattered finds of flint, associated with a workshop. The following documented sequence corresponds to the Chalcolithic period, although it is of little importance. Despite the significant Celtiberian and Roman occupation attested in the survey carried out in the site of Libia, no pottery associated with these phases has been detected in Valpierre. Settlement traces during these sequences are also absent. Four points of concentration of pottery with the sequence dated between the end of the Roman period and the early Middle Ages have been recorded. Neither has off-site material from the medieval period been recovered, despite the fact that the written documentation evidences intense exploitation of the plain during this time. The bulk of ceramic material is made up of traditional earthenware, industrial earthenware and porcelain from modern and contemporary times. Apparently, the great contribution of ceramic waste to the fields of cultivation occurred from the middle of the 20th century and was associated with the mechanization of the field.

The centuriated landscape of Augusta Emerita through LiDAR technology

Tomás Cordero Ruiz, Universidade de Lisboa

The foundation of Augusta Emerita (Mérida, Spain) and the establishment of the province Hispania Ulterior Lusitania are two interconnected events. Moreover, they are linked to the new territorial policy developed by the Roman State in the west of the Iberian Peninsula during the last quarter of the 1st century BC. In this sense, the establishment of a new colony in a region, the current middle basin of the Guadiana River, scarcely integrated within the Roman administrative structures, could be pointed out as one of its fundamental pillars.

The knowledge of centuriation of Mérida is remarkable due to the quantity and quality of the epigraphic and, especially, textual fonts available for its study. The mentions of the *ager emeritensis* included in the texts of Agenius Orbicus, Frontinus and Hyginus Gromaticus, compiled in the *Corpus Agrimensorum Romanorum*, allow us to know the length of the *pertica*, the size and extension of the *centurias*, the existence of *praefecturae* and a *lucus* consecrated to the divinity *Feronia*. An exceptional situation in comparison with the rest of the known cases in ancient Roman Hispania.

Archaeological research has revealed part of the reality described by the Latin agronomists, especially the layout of the centuriated grid and its inclusion in an *ager* that stands out for its enormous extension. The parcelling and distribution of land carried out from the foundation of the colony until at least 69 AD would constitute the foundations on which both rural settlements and the starting point a new system of property were organised. This framework is characterized by the establishment of the *villae* system and the Romanisation of the landscape. Recently, a new line of work has been opened, interested in the analysis of the emeritense centuriated grid employing LiDAR, to provide new data that allow us to obtain a better understanding of the Roman implantation in the middle Guadiana basin. In this paper, we will present the results obtained so far and the possibilities offered by this method in the study of the Roman centuries.

The Bracara Augusta territory: aspects of a centuriated landscape (Hispania Citerior Tarraconensis)

Helena Carvalho, Universidade do Minho

The aim of this work is to present and discuss the results of a study concerning the cadastral land organization in the territory around *Bracara Augusta* (Braga, North of Portugal). The systematic *actus* modulation and its articulation with the city layout and the main road axes put forward the suggestion of a centuriation connected to the *Bracara Augusta* foundation and the development of the road network in the Augustan and Julio-Claudian times.

The centuriated landscape of Pax Iulia from an archaeogeographical perspective

Maria da Conceição Lopes, University of Coimbra

Without ignoring the morphohistorical studies of Vasco Mantas, from the 80s of the 20th century, on the Roman centuriation of Pax Iulia, we set out to study the landscape of the vast territory of the Roman colony of Pax Iulia, from an archaeogeographic perspective. This allowed us to trace the general profile of the dynamic processes that animate its evolution and the hybrid nature of the causes that originated the transformation and transmission of its forms in the long term.

The construction of a compiled map, as a basis for the morphological study, allowed us to streamline and associate elements from various sources and with different scales in a single document and to combine "fossil" forms - that is, considered as having no longer any role in the landscape with forms active and mobilize for the study all the societies that produced what can be observed today.

From the relevant conclusions, which include the planimetric realities that structure the proto-historical landscape and reflect on their interaction with the new forms of occupation (centuriation, towns, etc.), a detailed presentation will be made here.

Keynote 1: Divided Landscapes in Ancient Italy

Jeremia Pelgrom, University of Groningen

Over the last decades, enormous progress has been made in the field of rural history in general, and ancient land division strategies in particular. Especially the introduction of a series of new remote sensing techniques has resulted in the discovery of an impressive myriad of ancient land division systems in almost all areas of the Italian Peninsula. Nevertheless, this paper will argue that our understanding of the function and chronology of these discovered grids is very limited and strongly biased by traditional paradigms on ancient rural organization and evolution. Focusing especially on Central-Southern Italy in the Classical and Hellenistic periods, this paper will address these biases and propose alternative scenarios worth considering when studying these systems.

Keynote 2: Centuriated landscapes in North-Eastern Hispania Tarraconensis. Conception and perspectives from Landscape Archaeology approaches

Josep Maria Palet Martínez, Catalan Institute of Classical Archaeology

Current researches on centuriated landscapes are based on diachronic and interdisciplinary perspectives. They include geoarchaeology, geophysics, survey, historical written documents or palaeoenvironmental analyses which can offer important insights on the effects a deductio had on the landscape. The few cases in which environmental data have been applied to the study of centuriations show a complex relationship between

Roman field systems, settlement and landscape change. These new perspectives are presented by assessing three case-study areas located in the ancient cities of Tarraco (Tarragona), Barcino (Barcelona) and Emporion (Ampurias). Centuriated networks stress the existence of a remarkable landscape organization of these areas, which are also characterized by both, a complex human occupation and land-use systems. Results suggest that centuriations does not always necessarily imply intensive and wide landscape exploitation. These data reinforces the symbolic and representational meaning of the centuriation model and show the interest of studying socio-environmental interactions in order to address different cultural patterns of ancient landscape shaping. In this sense, landscape archaeology offers new ideas about the conception of Roman centuriations, in which interpretation has moved from economic or materialistic approaches to more social and cultural focused explanations.