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# Quaternary International

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## Environmental evidence from early urban Antwerp: New data from archaeology, micromorphology, macrofauna and insect remains



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### ARTICLE INFO

#### Article history:

Received 18 December 2015

Received in revised form

8 July 2017

Accepted 28 August 2017

Available online 21 September 2017

#### Keywords:

Medieval Antwerp

Urban archaeology

Micromorphology

Insect remains

Zooarchaeology

### ABSTRACT

Recent excavations along the Jordaenskaai, in the medieval burg area in central Antwerp, have provided a unique opportunity to explore the archaeology, economy, and environmental context of early medieval Antwerp. This multidisciplinary project examined structures and features that are radiocarbon dated to 760–970 CE in order to gain a better understanding of the use of human and environmental resources and the use of space at the dawn of this trade town. By combining micromorphology and the analyses of both the insect and the vertebrate fauna, we explore both the local environment of early medieval Antwerp and its connections to the wider hinterland surrounding the town.

Excavations in the Antwerp burg have revealed remarkably well preserved wooden trackways, houses, fences, and numerous finds, often related to artisanal activities, including bone, antler and metal working. Around 900 CE, a D-shaped earthen rampart was erected; it was subsequently fortified by a stone wall. The Antwerp burg area is considered a nucleus and catalyst for the urban development. Like many contemporary early urban sites, the macrofaunal remains are dominated by bones of domestic cattle and pigs. However, the presence of sizable numbers of wild mammals, including red deer, wild boar, and beaver, distinguishes the Antwerp burg sites from other contemporary sites such as Ipswich.

A number of house structures were excavated within the D-shaped rampart area. A micromorphological analysis of micro-laminated layers of one of these structures was performed, revealing the evolution of its use within a single location. On top of the oldest ash deposit, a thick stabling horizon containing leaves, grass, wood fragments and animal dung was identified. The insect analysis from the stabling horizon confirmed that this deposit was primarily comprised of dung or stable manure, with stored hay or other plant matter also indicated. A high percentage presence of natural woodland indicators was also noted, suggesting that timber and wattle for buildings and trackways was sourced from such woodlands in close proximity to the early town. This is a virtually unique aspect for insect faunas from early towns in north and west Europe, with closest parallels coming from Novgorod, in Russia. The upper part of the sequence shows the presence of floors related to a more domestic use of space.

This combined archaeological, macrofaunal, insect and micromorphological study suggests that early Antwerp already had a thriving market and artisanal quarter by the 10th century, with domestic animals stabled within the town for butchery or export, and wild resources being brought in for processing and craft working.

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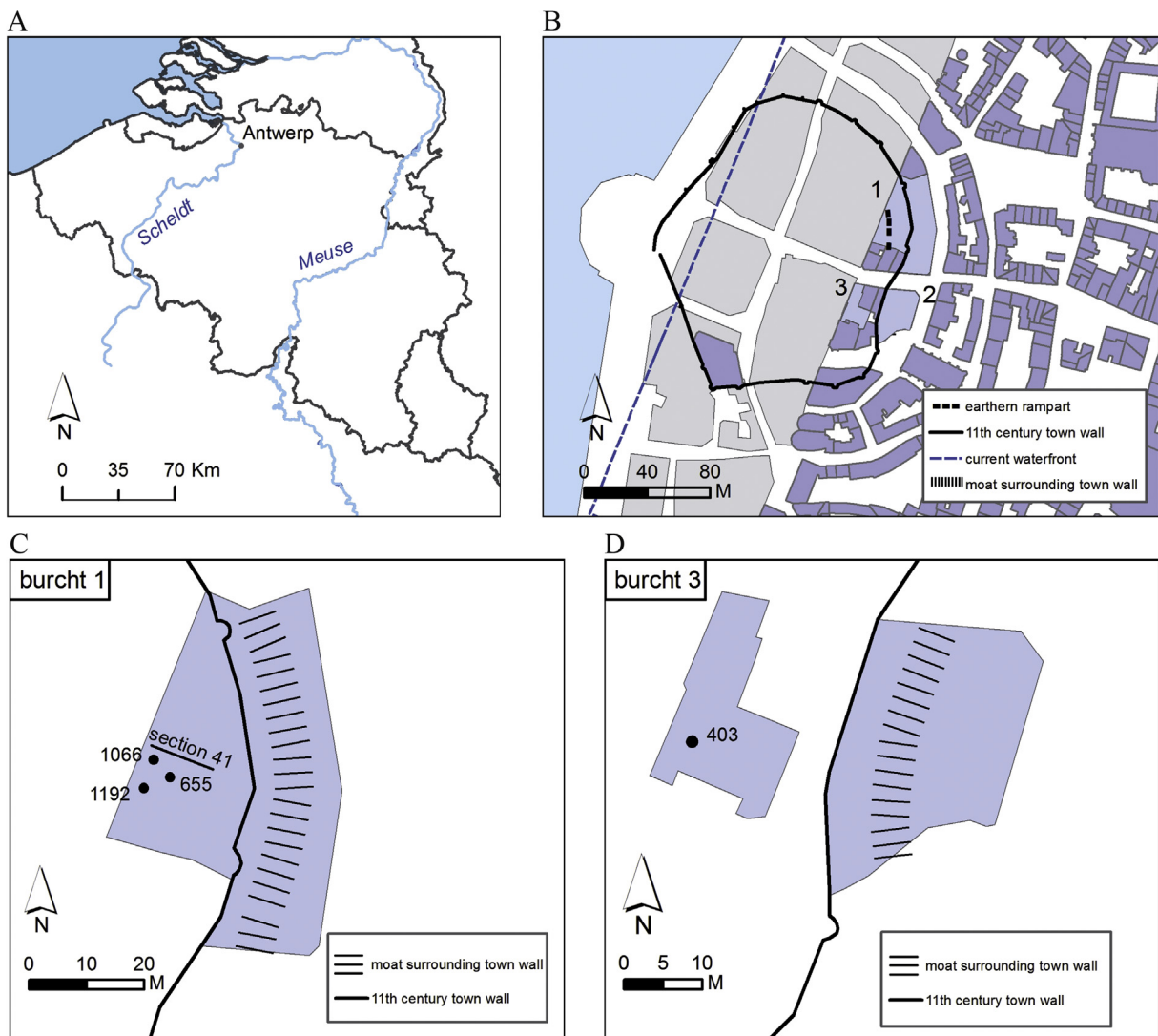
## 1. Introduction

The origin of medieval cities in northwest Europe has been a question that has interested historians and archaeologists since the days of Henri Pirenne (1925). In particular, studying the early medieval location and development of Antwerp has been a challenge since written evidence predating the 9th century is very limited. Van de Walle's (1961) 1952–61 excavations provided some evidence for 9<sup>th</sup>- and especially 10<sup>th</sup>-century Antwerp, including the discovery of a wooden trackway and three adjacent houses. These excavations, however, were conducted before the advent of modern archaeological methods such as microstratigraphy and systematic sampling for the recovery of insect and vertebrate faunal remains.

The 2008–9 excavations at the Burcht sites in central Antwerp (Bellens et al., 2012) allowed archaeologists to explore the 8<sup>th</sup>–10<sup>th</sup> century foundations of medieval Antwerp (Fig. 1A). Much of the area within the town's original walls was lost during the straightening of the Scheldt quays in the 19th century. The excavations at the Burcht sites allowed archaeologists to explore about 60% of the remaining built environment *intra muros*, excluding the Steen and the 19<sup>th</sup>-century hangars and elevated terraces. Antwerp was

surrounded by a D-shaped rampart at around 900 CE that was subsequently fortified by a stone wall outside the foot of the rampart. The archaeological evidence shows that Antwerp was a thriving centre of commerce and industry by the 10th century, revealing evidence for a range of craft activities, including wood-, bone-, and antler-working, as well as shoe-making.

The Burcht 1 site (Fig. 1B) is located on the right bank of the river Scheldt, and the early medieval layers are situated about 4–5 m above sea level. The site has been radiocarbon dated to 760–970 CE. Apart from the earthen rampart and the underlying so-called dark earth layer (dark-colored, humic, and poorly stratified units, often formed over several centuries, frequently rich in anthropogenic remains and occurring over large surfaces in urban contexts) which covers pits and postholes from Roman times, several structures and related layers were unearthed. Construction wood, corduroy trackways, wattle fences, walls and/or floor mats, a wooden square well or stove and several floor levels dated mainly to the 10th century illustrate the character and physical appearance of the late Carolingian and early Ottonian fortified settlement. As spatial analysis and site interpretation are still ongoing, interdisciplinary research helps to identify some of the recorded structures and



**Fig. 1.** A) The location of Antwerp; B) The Antwerp burg area: (1) "Burcht 1", (2) "Burcht 2", (3) "Burcht 3"; C) The location of the studied section 41 (containing contexts 391–393; 412–414 and 418; and contexts 655, 1066 and 1192 all from "Burcht 1"); D) The location of context 403 (from "Burcht 3") (drawing: Urban Archaeology Department, City of Antwerp). **Note:** the finds recovered from the Burcht 2 site were of uncertain origins and were not included in this study.

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