



# Identifying migrants in Roman London using lead and strontium stable isotopes



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## ABSTRACT

The ancient settlement of *Londinium* (London) has long been characterized as a major commercial and bureaucratic centre of the Roman province of Britain (*Britannia*). Primary source information indicates that people were drawn to the city from around the Empire. Mortuary and archaeological material evidence also attest to its cosmopolitan nature and have long been used to characterize the people who are buried in *Londinium* and identify where they may have originated. Within the past decade, researchers have successfully applied isotopic analyses of strontium and oxygen to human remains from various settlements in Roman Britain in order to identify the migrant status of the inhabitants. Recent studies have highlighted the utility of lead isotopes for examining past mobility, particularly for the Roman period. The aim of this project, therefore, was to apply lead and strontium isotope analyses to dental enamel samples from twenty individuals excavated from *Londinium*. The results suggest that the geographic origins of the population of Roman London varied, comprising individuals local to *Londinium* and *Britannia*, but also from further afield in the Empire, including Rome. The findings from this study are a valuable addition to the growing stable isotope dataset that is helping to characterize the nature of migration in Roman Britain, and this has broader implications for interpreting the relationship of migration and identity in the province.

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## 1. Introduction

The conquest of Britain (*Britannia*) by Rome in AD 43 initiated the integration of this small territory on the edge of the known Roman world into a vast Empire, whose dominions included much of Europe, the Middle East and North Africa (Mattingly, 2006). Primary sources and archaeological evidence reveal that because of military, enslavement, and other mercantile activities, many people lived and worked in multiple provinces during their lifetime (Adams and Laurence, 2001; George, 2013). In recent years, stable isotope analysis has been used to independently establish the presence of migrants and their likely place of origin (Montgomery, 2002; Molleson et al., 1986; Leach et al., 2009; Chenery et al., 2010, 2011; Montgomery et al., 2010, 2011; Eckardt et al., 2009; Müldner et al., 2011). These analyses have added value to the epigraphic and archaeological evidence and enabled new perspectives on the

construction of identity in the funerary record (Cool, 2010a; Eckardt, 2010; Eckardt et al., 2014; Pearce, 2010).

In Britain, this integrated approach has reinvigorated Roman studies, with new results showing that migrants, whether free or enslaved, lived in urban and rural settlements from the earliest phases of the conquest. Such findings have informed our understanding and interpretation of post-conquest changes in burial practices, in addition to underlining the important role that migrants had in determining the nature and make-up of settlements and communities during this period (Cool, 2010a; Eckardt et al., 2010, 2014; Pearce, 2010). London (*Londinium*) is ideally placed to investigate these changes, because it was founded in an area without an existing indigenous settlement, and established itself from the outset as a social and economic hub of the province (Marsden, 1986; Perring, 1991, 2015; Perring and Pitts, 2013). The limited epigraphic evidence from *Londinium* provides some insights into the geographical origins of its people, as this information was often included in people's funerary epitaphs. The epigraphic evidence suggests that *Londinium* was inhabited by people from France, Germany, the Mediterranean, and North Africa (Mattingly,

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2011; Millett, 1996a, 1996b). To date, there have only been a limited number of small-scale isotope analysis studies for individuals recovered from *Londinium* to corroborate this (Montgomery et al., 2010; Millard et al., 2013). This study represents the first to examine population mobility using strontium and lead stable isotopes from individuals buried in its cemeteries. Twenty individuals were selected, whose burial dates span the beginning and decline of *Londinium* (1st to 5th centuries AD) in order to investigate population origins, the extent to which an individual's origins were expressed in the funerary record, and how the correlation between a person's origins and funerary context might influence our understanding of their identity.

### 1.1. Roman London

There is no pre-Conquest evidence for an indigenous settlement, such as an oppida (Pitts, 2010) in the location of the City and Greater London area. Rather, archaeological excavations have found evidence for the ritual use of the landscape and River Thames, and some isolated late Iron Age farmsteads (Marsden, 1986; Powell, 2012; Sidell, 2008). Recent discoveries have shown that the settlement of *Londinium* was established in c. AD 48 (Hill and Rowsome, 2011). The main settlement was situated on the north bank of the River Thames, with a suburb on the south bank that was linked by a river crossing at the lowest bridgeable point. Both of these areas were well placed for connecting land, river and sea traffic (Brigham, 1996) and the degree of organization and forethought in the early city planning demonstrates military involvement in the construction of *Londinium*. Archaeological and primary source evidence indicates that from the outset, the growing urban centre functioned primarily as a planned, but unofficial, centre of commerce and focus for goods traded from the surrounding region and Continent (Rowsome, 1996; Tomlin, 2006; Perring and Pitts, 2013; Wallace, 2014; Perring, 2015).

*Londinium* underwent an undulating pattern of growth and decline throughout Roman occupation. Archaeological evidence from the earliest phases (48–60 AD) highlights the mercantile nature of the settlement and the presence of migrant inhabitants, as evidenced by the many houses that had shop-fronts (Hill and Rowsome, 2011). Additionally, there is evidence for imported foods and material culture from Europe, particularly the southern and eastern Mediterranean (Hill and Rowsome, 2011). This evidence confirms the writings of Tacitus (Annals 14.33.1), who described the settlement as 'a busy centre through its crowd of merchants and stores.' However, much of *Londinium* was burnt and destroyed during the Boudican revolt of AD 60 (Marsden, 1986; Hill and Rowsome, 2011; Wallace, 2014).

After the rebellion, a programme of major public building work (i.e. a port) was begun and the settlement rebuilt. Archaeological evidence shows that the military were responsible for much of the construction work (Millett, 1996a, 1996b). By AD 100, the administrative centre of the province (*Britannia*) had shifted from the original capital at Colchester to *Londinium*, making it the base for Imperial and military activities (Marsden, 1986; Tomlin, 2006).

The third and fourth centuries are characterised by periods of decline, with abandonment of some areas, followed by evidence of brief episodes of revitalisation. These fluctuating fortunes mirror the wider political unrest in the Empire. During the later phase of Roman occupation, *Londinium* was given the honorary title of 'Augusta' and remained the financial hub and administrative centre of *Britannia* until AD 410. After this time, the population size appears to have decreased, as only the walled settlement on the north bank and the area on the southeast bank continued to be occupied, but there is evidence for its continued wealth in the form of luxury imports from the Continent (Marsden, 1986; Mattingly, 2006;

Millett, 1996a, 1996b; Perring, 1991).

### 1.2. The people of Roman London

From its inception, *Londinium* was created and inhabited by people from across the Empire: military and civilian, enslaved and free, local and foreign. Epigraphic evidence from *Londinium* provides some insights into the geographical origins of its people. These refer to serving soldiers and army veterans, a sailor, merchants from Antioch (Turkey) (RIB 29) and Athens (Greece) (RIB 9) (see Holder, 2007). There is also evidence for connections to North Africa, with adult and child migrants identified by stable isotope analyses (Millard et al., 2013), funerary inscription evidence such as the partial inscription commemorating Tullia Numidia (RIB 23 cited in Wheeler, 1928; see also Holder, 2007), and a range of material culture depicting sub-Saharan people corresponds to notions of the 'exotic' in the Roman world (Eckardt, 2014, 79–81).

The importance of the settlement as a centre of commerce and administration is also documented in the inscription evidence. An incomplete inscription by *Tiberinius Celerianus* (RIB 3014), which dates from the AD 160s, identifies him as being a Roman citizen from northern France and as a *moritix*, a Celtic word for seafarer (Dondin-Payre and Loriot, 2008). There also exists a writing tablet concerning the sale of a Gaulish slave girl called *Fortunata* – 'Lucky' (Tomlin, 1993). Other examples include the *procurator* Julius Clasicianus who is suggested to have been from *Gallia Belgica* near Trier (Germany); and Lucius Pompeius Licetus Da(...) from *Arretium* (Italy) (RIB 3004) (Pearce, 2010). It is clear from the above that the populace of *Londinium* represented communities from a variety of different geographic areas of the Empire.

Isotope analysis-based mobility data for individuals from *Londinium* is currently sparse, particularly lead and strontium isotope data, although three small-scale studies have identified migrants from North Africa, Europe and other locales in Britain (Budd, no date; Millard et al., 2013; Montgomery, 2002; Montgomery et al., 2010). This study represents the first large-scale application of lead isotope analysis to address the geographical origin of individuals in Roman Britain.

### 1.3. Using lead and strontium to track mobility in Roman Britain

The use of isotopes in archaeological studies is based on the premise that humans tend to incorporate isotopic compositions that correspond to those of locally sourced resources (Schwarz et al., 2010:337). Strontium and oxygen isotopes have long been used to identify non-locals based on geological and climatic differences during childhood (Evans et al., 2006a, 2006b; Budd et al., 2001). However, due to the rise in the anthropogenic use of lead during the Roman period, lead (Pb) isotope analyses, coupled with strontium (Sr) isotope analyses, provide a unique opportunity for tracing migration during this period (Montgomery, 2002). The rise in anthropogenic Pb exposure in Roman Britain is acknowledged as a significant post-conquest change (Boulakia, 1972; Montgomery et al., 2010). In the Roman world, the industrial uses of the metal were multiple, including in plumbing, cooking, dyeing, cosmetics, tableware, and coffins (Boulakia, 1972; Durali-Müller, 2005). Its widespread use in the province can be explained by the natural occurrence of the ore in the north and southwest of England and Wales (Boulakia, 1972).

The increased use of Pb in Roman Britain provides a unique investigative tool with which to identify people from this period. In pre-metallurgical societies the Pb in the skeleton will reflect the geology from which the Pb originated and is present only in small concentrations (<0.8 ppm) (Millard et al., 2014; Montgomery, 2002; Montgomery et al., 2010). In contrast, in metallurgical

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