

LABOUR MOBILITY IN THE ROMAN WORLD:  
A CASE STUDY OF MINES IN IBERIA \*

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Labour markets have a long history.<sup>1</sup> Indeed, in recent years the presence of free wage labour in pre-capitalist societies has been increasingly recognised, challenging the Marxian idea that the commodification of labour power was primarily a product of eighteenth-century Europe, industrialisation, and capitalism.<sup>2</sup> In the Roman world, for example, there were certainly people who in Marxian terms had only their labour to sell, and the listing of wage rates alongside maximum prices for goods and services in Diocletian's price edict suggests that labour could be classified as a commodity like any other.<sup>3</sup> Workers in the list were paid commensurate with their skills, with a skilled worker such as a figure painter (6.9) earning six times the daily wage of an agricultural labourer (6.1a).<sup>4</sup> Labour contracts also survive from the Dacian gold mines and the quarries at Mons Claudianus, and ancient literature suggests that the hiring of labour was commonplace in the Roman world.<sup>5</sup> Moreover, workers were largely free to change their occupations, as there were few, if any, hereditary limitations or restrictions imposed by guilds, at least before late antiquity.<sup>6</sup> Geographical mobility of workers was also possible. While there were some well-known periodic expulsions of particular groups of 'foreigners' from cities, usually during periods of crisis, together with some controls on the borders and between provinces, there was

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<sup>1</sup> For free wage labour in pre-capitalist societies, see van der Linden 1997; 2008: 40-46.

<sup>2</sup> For Marx and free wage labour: see van der Linden 2008 18-20. Labour as a commodity: Schwimmer 1979: 287; Van der Linden and Lucassen 1999: 8. Different forms of labour commodification beyond free wage labour have also been stressed: e.g. van der Linden 2008: 19-32.

<sup>3</sup> For work and workers as a commodity in antiquity, see also Zuiderhoek 2013: 35. On wages in Diocletian's price edict, see now Groen-Vallinga and Tacoma forthcoming a.

<sup>4</sup> 150 and 25 *denarii* a day respectively, with maintenance (*pastum*).

<sup>5</sup> Labour contracts, see Cuvigny 1996. As agricultural workers: e.g. Var. *R.* 1.17; in a domestic context, see, for example, the hired servant Corax in Petronius' *Satyricon* (see esp. Petr. 117.11; also Dio Chrys. *Or.* 7.114; Marcian. *Dig.* 48.19.11.1); as a porter: Apul. *Met.* 1.7; as muleteers: Fest. p.258M; in construction, see Ven. *Dig.* 45.1.137.3; in a bakery: Plin. *Ep.* 10.74.1; miscellaneous tasks, e.g. guarding a corpse, Apul. *Met.* 2.21-30; throwing dice for a man with gout in his fingers, Hor. *Sat.* 2.7.15-18; see also Plut. *De vitando aere alieno* 6; Epictetus, *Dialogues* 3.26; Holleran forthcoming. On contract labour in general, see Kehoe 2012.

<sup>6</sup> For restrictions in late antiquity, see Jones 1973: 1050-1; but see Sirks 1993 for a slightly different interpretation of the evidence.

relative freedom of movement within the Roman empire.<sup>7</sup> The Roman world thus fulfilled the two conditions which Temin identifies as key to a functioning labour market: workers were free to change their location and their occupation, and were paid relative to their skills.<sup>8</sup>

The geographical mobility of workers is crucial in the development of labour markets, allowing labour supply to respond to labour demand. It enables labour markets to develop beyond a local level, linking local markets to those at a regional or even supra-regional level, depending on the extent of movement. Theoretically, if the mobility of labour is high enough, it should eventually bring about an equalisation of wages for comparable tasks across a wider geographical area, resulting in a unified labour market, although in practice wages are rarely, if ever, completely equal, as there are a number of other factors at work in the setting of wage rates.<sup>9</sup> Even in a unified labour market then, geographical mobility can result in higher wages for an individual, and when labour markets remain primarily local, mobility can be a strong bargaining tool for workers negotiating wages, as demonstrated in England after the Black Death.<sup>10</sup> Consequently, we would expect the level of labour mobility in the Roman world to have had a potentially significant impact on the structure and organisation of the labour market(s).

*Prima facie*, the data relating to wage rates in mines and quarries in the Roman empire could be taken as indicative of levels of labour mobility high enough to bring about the equalisation of wages, since Cuvigny has tentatively suggested that wage levels at the remote quarry at Mons Claudianus in Egypt and the gold mines at Alburnus Maior in Dacia were roughly equal in the mid-second century CE.<sup>11</sup> However, this apparent equalisation could also have been the result of a central administration setting wage rates for free workers in *metalla* (quarries and mines) within the empire, rather than down to a functioning labour market successfully matching labour supply with labour demand.<sup>12</sup> It could also be argued that the setting of wage rates may have curtailed geographic mobility,

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<sup>7</sup> For expulsions, see e.g. Suet. *Aug.* 42.3; for Pliny asking Trajan for a garrison at Juliopolis to control entry into Bithynia (which he was refused), see Plin. *Ep.* 10.77-78. In general, see Moatti 2006: 117-26.

<sup>8</sup> Temin 2013: 115.

<sup>9</sup> See, for example, Temin 2013: 115-16.

<sup>10</sup> See, for example, Dyer 2002: 278-79 for workers in England in the second half of the fourteenth century preferring short-term contracts that enabled them to remain flexible and move around in search of higher wages.

<sup>11</sup> Cuvigny 1996: 142-45. She notes that we do not know if the miners at Dacia received rations in kind, as appears to have been the case in the quarries of Mons Claudianus, making a comparison of the real value of wages difficult.

<sup>12</sup> Cuvigny 1996: 145. For the presence of a central authority directing the exploitation of mines and quarries under imperial control, see, for example, Dusanic 1989; Hirt 2010: 342-43. **See also p.000.**

since moving to a different region would not be rewarded by higher wages, although it is clear that both Mons Claudianus and Alburnus Maior in Dacia attracted labour migrants from some distance away.

Certainly it has become normal, particularly following the publication of Horden and Purcell's influential *The Corrupting Sea* in 2000, to speak of high mobility in antiquity.<sup>13</sup> This reflects a wider trend in late twentieth-century migration studies to emphasise movement in pre-modern societies, a reaction in some ways to the idea of a largely static peasant population. The new paradigm views migration as 'part of the general human pattern, essential for the functioning of families and crucial to the operation of the labour market', and there is much to suggest that the Roman world fits this new paradigm, with mobility appearing commonplace.<sup>14</sup> In the late Republic, for example, Cicero (*Clu.* 40) speaks of an itinerant doctor (*pharmacopola circumforanea*), Lucius Clodius from Ancona, who he claims was paid 2000 sesterces by Oppianicus' grandfather to murder his wife. In the imperial period, Suetonius mentions an itinerant gladiator trainer (*Vit.* 12.1), and while not an economic migrant as such, the apostle Paul supported his missionary work with tentmaking and leatherworking as he travelled over long distances.<sup>15</sup> Dio Chrysostom (*Or.* 35.15) describes the economic pull of an assize centre in Bithynia, and urban centres in general were a draw for economic migrants, not only large cities such as Rome, Alexandria, and Antioch, but also smaller local urban centres.<sup>16</sup> Seasonal mobility was also a fact of life.<sup>17</sup>

Furthermore, although fictional, the narratives of novels such as those of Petronius and Apuleius, take place against a backdrop of regional mobility, and the motivation for much of this movement was economic. Eumolpus, the protagonist of Petronius' work, travels around Southern Italy with his companions, while Apuleius' protagonist, Lucius, is also highly mobile; at one point (while an ass) he even becomes part of a *circumforaneum mendicabulum* or 'travelling beggar's show' (*Apul. Met.* 9.4), joining a group of Syrian

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<sup>13</sup> Horden and Purcell 2000: 377-400. For the Classical Greek world, see, for example, Osborne 1991, and Taylor 2011, who highlighted the potential for high rates of mobility, primarily, but not exclusively, within Attica. For Republican Italy, see Isayev forthcoming. For the Roman empire, see, for example, Eckardt 2010. For the limits of mobility, see Woolf, in this volume.

<sup>14</sup> Lucassen and Lucassen 1997: 9. In general, see Moch 2003, who emphasises the mobility of pre-industrial peasantry, although focusing primarily on the period from 1650 onwards.

<sup>15</sup> For example, *Acts* 21.1-7; Hock 1980. cf. Lucian, *Somn.* 7, where one of the benefits of learning a trade is that the person who has received such a training will never have to leave his country and go wandering abroad.

<sup>16</sup> For migration to Rome, see Noy 2000; Ricci 2005. For the economic opportunities offered by urban centres, see Holleran 2011. For a detailed study of migration to Augusta Emerita from its foundation in 25 BCE to 250 CE, see Edmondson 2004. For migration to towns in Lusitania in the imperial period, see Stanley Jr 1990.

<sup>17</sup> For seasonal mobility in Republican Italy, see Erdkamp 2008: 424-33. See also Suet. *Vesp.* 1.4.

priests moving around the Greek countryside.<sup>18</sup> Elsewhere, Lucius meets a man from Aegium who claims to make a living trading in honey, cheese, and the like with innkeepers, journeying through Thessaly, Aetolia, and Boeotia (Apul. *Met.* 1.5). Material culture also indicates the movement of both goods and people around the Roman empire. Inscriptions commemorating *negotiatores* and *mercatores* testify to economic migration. Whenever there are indications that such people took up residence in a city or locality different from their place of origin for some considerable time, they may reasonably be called ‘migrants’. The groups of Tyrians resident in Rome and Puteoli provide a well-known illustration.<sup>19</sup>

The literary, epigraphic and archaeological material, scattered and anecdotal as it is, testifies at the very least to a world in which economic mobility was commonplace, particularly within regions.<sup>20</sup> Many of these workers appear to be independent, but Suetonius’ comment that Vespasian’s great-grandfather may have been a ‘labour contractor’ (*manceps operarum*) involved in the annual movement of agricultural workers from Umbria to the Sabine district indicates that labour also moved in order to take advantage of specific opportunities for paid work.<sup>21</sup> The demand for labour in agriculture is hardly surprising given that this was primarily an agrarian economy, but other sectors, such as mining, also had a high demand for labour, particularly shaft mining of the type common in Iberia.<sup>22</sup> Furthermore, since mines are often located in isolated places, mining

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<sup>18</sup> A link is made here between itinerancy and begging or vagrancy, a connection also made by John Chrysostom in the fourth century, when he repeatedly pairs itinerant traders and beggars (*Κάπηλος* and *ἀγύρτης*; *De confessione Pretiosae Crucis* (PG 52. 843); *Hom. In Matt.* 54 (PG 58. 538); *Eclogae i-xlviii ex diversis homiliis* (PG 63. 850). This is a link which continued to be made until relatively recently, with a distinction between ‘subsistence’ and ‘betterment’ migration, that is, between those who are so poor that they have to move to avoid dying from hunger and destitution, compared with those who are motivated to move in order to better their situation (Lucassen and Lucassen 1997: 9; 18).

<sup>19</sup> See, for example, the *negotiator Britannicianus* who dedicated an altar to a local deity in Germania Inferior (*AE* 1983, 722); the *negotiator ex provincia Dacia*, a decurion at Patavissa, who commemorated himself and his wife in Dalmatia (*CIL* 3, 2086); or the *negotiator celeberrimus suariae et pecuariae* from Misenum in Rome (*CIL* 6, 33887). For Tyrian groups, see *IG* 14, 830, lines 1-19 (= *OGIS*, no. 595 = *IGRR* 1, 421); Lewis and Reinhold 1990: 109-10; Sosin 1999. For further examples, see Holleran forthcoming.

<sup>20</sup> Movement between regions did take place, but much of this was either forced (slaves) or military, rather than free migration: Scheidel 2007a: 49, for example, argues that in contrast to later Han China, there was no mass migration between different parts of the empire, a point supported by the material discussed here.

<sup>21</sup> Suet. *Vesp.* 1.4. Although Vespasian’s great-grandfather’s role is to be dated to the second half of the first century BCE, Erdkamp 2008 426, points out that Suetonius speaks as though this practice was still on-going. For the complementary role of slaves and free seasonal labour in agriculture in Republican Italy, see Rathbone 1981. For longer-term agricultural wage labour in Roman Egypt, see Kehoe 2012: 121-23.

<sup>22</sup> Silver 2011: 137.

has historically been dependent on migrant labour, and the sector thus provides an excellent opportunity for an exploration of labour mobility.

This paper will, therefore, use mining as a case study to explore economic migration and labour mobility in the Roman world, since labour had to be moved to the mines, whether this was the forced relocation of slaves, convicts, and conquered peoples, or the voluntary movement of free workers. This will be done through a study of the epigraphic record and will focus on the Iberian Peninsula, a region particularly rich in metal resources and one of the most important sources of gold, silver, copper, tin and lead in the Roman empire, particularly in the first century BCE and into the first two centuries CE.<sup>23</sup>

### *Organisation and the labour force*

The Roman state retained active control over the exploitation of mines, although the level of involvement varied. Some mines were exploited directly by the state, particularly in the early years of conquest, while the mining rights of others were leased out to private contractors or ‘corporations’ (*conductores* and *societates*), overseen by the state; still others were left in the control of cities, and some smaller mines on private land remained in private ownership.<sup>24</sup> The diversity of practice presumably reflected a number of concerns, including geological, topographical, and geographical factors, the type of metal being mined, and the local political situation.<sup>25</sup> Strabo (3.2.10) comments that in his day, for example, the silver mines at New Carthage and elsewhere had passed into private ownership (in contrast to Polybius’ time when they appear to have been state-owned). He claims that the majority of goldmines, however, were state property, and the general trend appears to have been for mines to come increasingly into state ownership, even if the mode

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<sup>23</sup> For metals in Iberia, see Craddock 2008: 95; Davies 1935: 94-139; Edmondson 1987: 25-36; Wilson 2012: 133-5. See also Plin. *NH* 3.3.30. For a detailed study of mines in this region, see especially Domergue 1990. The study focuses on inscriptions, but it should be noted that exciting new possibilities are offered by the increasingly sophisticated analytical techniques applied to skeletal and dental data. See, for example, the strontium isotope analysis of a sample of 31 skeletons from the cemetery at the mining camp of Phaeno, which was in use from the third to the seventh century, indicating that all but one were of local origin (Perry *et al.* 2009; cf. Prowse, in this volume). For further references to strontium and oxygen isotope analysis employed in studies of migration in the Roman world, see, for example, Killgrove 2010c: 133 n.3. cf. the discussion of Bruun 2010, who highlights the need to combine this analysis with a consideration of associated inscriptions wherever possible.

<sup>24</sup> On the Iberian mines and Roman administration, see, for example, Domergue 1990: 229-316. On the organisation of mines in the Roman world more broadly, see Hirt 2010. Also Andreau 1989.

<sup>25</sup> Kehoe 2007: 568; Hirt 2010: 365-68.

of exploitation still varied.<sup>26</sup> Hirt argues that the general principle was to keep direct imperial involvement to a minimum without renouncing control; in this scenario, the bulk of work was contracted out, meaning that much of the workforce must also have been employed privately.<sup>27</sup>

Although there were developments in mining technology in Antiquity that may have improved efficiency, it remained a labour-intensive practice.<sup>28</sup> In the mid-second century BCE, Polybius (34.9.8 *apud* Strabo 3.2.10) famously talked of 40,000 workers in the mines at New Carthage, an incredible figure but one which Domergue argues was exceptional but not exaggerated, considering that almost all the excavation here was done by hand.<sup>29</sup> Polybius' claim of high numbers of workers is supported by a Republican ruling of the censors prohibiting the employment of more than 5000 workers in the gold mines at Victumulae in Northern Italy (Plin. *NH* 33.78).<sup>30</sup> Modern estimates also point to high numbers of workers; in the gold mines of Northwest Spain estimates range from 4-6000 workers at Valduerna, 10-15,000 workers at Las Médulas, and as many again in the mining areas of the three tributaries to the Órbigo river.<sup>31</sup> Polybius (34.10.10-14 *apud* Strabo 4.6.12) also talks of the economic pull of mines for migrants in Republican Italy, describing how the discovery of a gold mine in the region of Aquileia drew workers from other parts of Italy, who were subsequently expelled by the local population (the Noric Taurisci) when the price of gold dropped by a third, presumably because of the abundance of gold extracted.<sup>32</sup> Already in the second century BCE then it was possible to mobilise workers within Italy, and there must have been some effective means of transmitting information about economic opportunities.

Furthermore, before the Second Punic War, Diodorus Siculus (5.36.3.4) describes the mines in Southeast Iberia as being worked by “private individuals” (ιδιώται), whoever happened to be there;<sup>33</sup> these workers were able to take away great wealth, since the silver

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<sup>26</sup> See also Strabo (4.6.10) for the comment that while the Taurisci were able to run a gold mine in Northern Italy as a monopoly in Polybius' day, all gold mines were now under the control of the Romans. For the Imperial Fiscus increasingly taking control of mines in the imperial period, see Edmondson 1987: 37; Kehoe 2007: 568. See Domergue 1990: 281 (Table XII) for a list of known imperial mines in Iberia, together with the relevant documentary evidence.

<sup>27</sup> Hirt 2010: 368.

<sup>28</sup> For mining technology, see Craddock 2008: 96-99.

<sup>29</sup> Domergue 1990: 335-36; 358. He also argues that these workers were slaves, although Polybius does not explicitly state this. Not all of these workers were necessarily directly engaged in the extraction and processing of ore. Some may have provided ancillary services: Edmondson 1987: 60.

<sup>30</sup> See also Strabo 12.3.40 for over 200 workers in a sulphur mine in Bithynia.

<sup>31</sup> Andreau 1990: 92. See also Blanco and Luzon 1966: 75.

<sup>32</sup> Cf. Groen-Vallinga and Tacoma forthcoming b who suggest that this passage refers to the exploitation of the mine rather than its workforce.

<sup>33</sup> The verb used is τυγχάνω.

was abundant and easily accessible. Once the territory fell under Roman rule, however, what he calls “a multitude of Italians” (πλῆθος Ἰταλῶν) came to Iberia to profit from the mines. The use of the term πλῆθος here implies a high number of migrants, yet these were not labourers, but overseers or exploiters, as Diodorus clearly states that these Italians purchased slaves as a workforce; in a later passage (5.38) he describes the miserable conditions in which these slaves worked. The names on lead ingots linked to mines at New Carthage in the Republic also indicate that the exploiters were largely Italian, but the workforce may well have been purchased locally.<sup>34</sup> Diodorus points here to a largely slave workforce, which may have been the case in these particular mines in the second and first centuries BCE, but the general impression that emerges from our sources in the imperial period is of a more mixed workforce, comprising of forced labour from slaves, condemned criminals, prisoners of war, and conquered peoples, together with free labour. This reflects the picture of a mixed labour force of slaves, free, and freed workers that is increasingly emerging in studies of many other sectors of the Roman economy.<sup>35</sup>

A mixed workforce is implicit in the *Lex Metallī Vipascensis* (CIL 2, 5181) and the *Lex Metallī Dicta* (FIRA<sup>2</sup> 1, 104) of the second century CE from Vipasca (Aljustrel), where silver, copper, and iron mines were under the overall control of an imperial *procurator metallorum*, but with the actual mining rights leased out to contractors. These documents detail the concessions granted to private individuals to perform a series of activities as a monopoly, and some of the leasing arrangements for the exploitation of the mines.<sup>36</sup> The *Lex Metallī Vipascensis* dictates in particular that anyone who wishes to exploit the slag heaps and rock deposits must make a declaration to the lessee of the number of slaves (*servi*) and hired labourers (*mercennarii*) sent for the task. The regulations for the maintenance of the baths included in this document also point to a diverse community of women, children, free men, imperial freedmen and slaves, and soldiers. Furthermore, among the details of leasing arrangements and organisation of mining in the *Lex Metallī Dicta*, different penalties are imposed on slaves and free men who steal ore or contravene regulations.

Just as there does not appear to have been a single model for ownership or organisation of Roman mines, the composition of workforces appears to have varied, reflecting a similar range of factors linked to the chronology of the mine, its location, topography, geography, and geology, and the type of metal mined, as well as the particular local political

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<sup>34</sup> Domergue 1990: 321-26. For local labour force, see Domergue 1990: 335; Fear 1996: 47.

<sup>35</sup> For example, in the construction industry: DeLaine 2000: 121-23.

<sup>36</sup> For a detailed discussion of these texts, see Domergue 1983.

circumstances. We might, for example, expect the more widespread use of convict or forced labour in those mines directly exploited by the state, although convict labour may also have been available to hire.<sup>37</sup> Furthermore, in the early years of conquest newly-acquired subjects were sometimes put to work in the mines. Following the Cantabrian wars in the late first century BCE in Northwest Spain, for instance, both the Cantabri and the Astures were forcibly resettled from the mountains to the plain and ordered to mine for gold and pigments (Florus, 2.33.59-60; also 2.33.52; Dio Cass. 54.11.5). A change in settlement patterns has also been identified in the region; from the early first century onwards, the number of 'castros' not only increased in number and density, but more importantly, were now found clustered around areas of metallurgical activity.<sup>38</sup> Similar policies of resettlement and labour exploitation are attributed to Augustus' general C. Vibius Postumus in Dalmatia (Florus, *Epitome* 2.25.12), and are hinted at by the speech that Tacitus puts into the mouth of Calgacus, who asks the Britons if they would prefer to follow him into battle or to submit to taxation, labour in the mines, and all the other punishments of slavery (Tac. *Agr.* 32.4).<sup>39</sup> More directly, enslaved prisoners of war were put to work in the mines (Jos. *BJ.* 6.418), as they were in other public works, such as the digging of a canal through the Isthmus of Corinth under Nero (Jos. *BJ.* 3.540). Such measures were probably used primarily in the initial stages of conquest to get mines up and running, with a more mixed workforce developing soon afterwards. Soldiers could also be used to open up a mine (Tac. *Ann.* 11.20.3). The presence of soldiers in Roman mines is in fact well-attested; they were probably typically utilised for logistical purposes and to supervise and provide security, rather than to provide labour as such, although some were skilled specialists.<sup>40</sup>

A different policy appears to have been employed following the conquest of Dacia. According to Eutropius (8.6.2), Trajan moved large numbers of people to Dacia *ex toto orbe Romano*, as the region had been depopulated by the war with Decebalus.<sup>41</sup> Eutropius claims only that people were brought in to inhabit the countryside and the cities (*ad agros et urbes*), but at least part of Trajan's motivation may have been to provide workers for the newly-acquired gold mines in the region. Certainly epigraphic material and the names on wax tablets taken from Alburnus Maior testify to the presence of Illyrians in Dacia, who may

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<sup>37</sup> Groen-Vallinga and Tacoma forthcoming b.

<sup>38</sup> Hirt 2010: 229. See also Andreau 1990: 91 for archaeological indications that the population of these settlements was indigenous; Domergue 1990: 347 for discussion of the status of these workers.

<sup>39</sup> In general, see Hirt 2010: 334-35.

<sup>40</sup> See Andreau 1990: 92-93; Edmondson 1987: 70; Hirt 2010: 358.

<sup>41</sup> See Mihailescu-Bîrliba 2011: 38 for the argument that this was not due to depopulation but to a naturally low population density in the area even before the war.

well have been moved there as part of Trajan's relocations, bringing with them skills in mining acquired in their places of origin.<sup>42</sup> Hirt highlights the Pirustae in particular, who came from the mining region of the Upper Drina valley, and formed a new community in the *Vicus Pirustarum*.<sup>43</sup> Whether these Illyrians were moved here as part of a deliberate policy by Trajan, or were voluntary migrants (and the latter was almost certainly the case after the Trajanic period), they were free, salaried workers.<sup>44</sup> Both the epigraphic record and the literary testimony of Eutropius also indicate that many of these migrants were Roman citizens.<sup>45</sup>

Convict labour was also utilised in Roman mines, possibly on a larger scale than has been previously recognised.<sup>46</sup> Ulpian (*Dig.* 48.19.8.4) talks of punishments that take away freedom, such as condemnation to the *metalla* or to the *opus metalli*, claiming that those provinces that did not have mines sent convicts to those that did.<sup>47</sup> Such punishments were largely reserved for those of lower social status, that is, for slaves, non-citizens, and non-elites. Since convicts may have been chained, the presence of fetters in mines is ambiguous, as these could be taken as evidence of either slave or convict labour.<sup>48</sup>

It appears clear then that since the supply of metals was so important to the Roman state, it took an active interest in ensuring a sufficient supply of manpower, utilising forced labour from conquered peoples, enslaved prisoners of wars, and convicts, as well as on occasion organising the relocation of individuals or communities to mining regions.<sup>49</sup> This concern with the labour force, and particularly the redistribution of manpower resources

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<sup>42</sup> Mihailescu-Bîrliba 2011: 13-19; 37. For the wax tablets, Andreau 1990: 90.

<sup>43</sup> Hirt 2010: 335. He also notes that pre-conquest workings of the Dacian mines make the use of local, experienced labour a possibility. Also Andreau 1990: 90-91. For mining in Roman Illyricum (here defined as the area containing the provinces of Noricum, Pannonia, Dalmatia, and Moesia Superior), see Dusanic 2004.

<sup>44</sup> Domergue 1990: 347. See also Oltean 2009: 93-94 for the policy of relocation ending with Trajan.

<sup>45</sup> Eutropius (8.6.2) comments that Hadrian was unable to pull out of Dacia because Trajan's policy of planned relocation to the region would mean abandoning many Roman citizens to the barbarians. Hadrian's motivation for remaining in Dacia was most likely the mining wealth of the province.

<sup>46</sup> Groen-Vallinga and Tacoma forthcoming b argue for the more widespread use of convict labour in the Roman empire than hitherto realised. See Plin. *Ep.* 10.31-32 for convicts who had been sentenced to service in the mines or the arena being used as public slaves in Nicomedia and Nicaea, receiving an annual salary for their work.

<sup>47</sup> The movement of convict labour over long distances may have been more about punishment than economics; *C.Th.* 14.24.1 (Constantine 328 CE) implies that being set further away was an additional punishment (Groen-Vallinga and Tacoma forthcoming b). See also Hirt 2010: 333 for Christians being sent to mines outside of their own province.

<sup>48</sup> See, for example, Philostratus (*V App* 5.19.2) for Musonius Rufus being bound and forced to dig at the Isthmus of Corinth under Nero (Groen-Vallinga and Tacoma forthcoming b). For fetters, see, for example, those found in the mines at Rio Tinto (Domergue 1990: 342).

<sup>49</sup> The supply of precious metals in particular was important for the production of coinage (Mrozek 1989: 163-4).

across regions, may well indicate some central control of mines and quarries; the forcible and sponsored transfer of labour also suggests that the significant labour requirements of mines were not always satisfactorily met by the market. The remote locations of many mines meant that the hinterland could only very rarely, if ever, supply the necessary labour.<sup>50</sup> Recruiting the necessary unskilled workers may have been particularly difficult, as much of the work in mines was difficult and dangerous. In some areas, mining work was also seasonal, and it therefore made sound economic sense to employ free labour rather than maintain a force of slaves year round.<sup>51</sup>

In fact, there is plenty of evidence to indicate that free labour was also a key part of the mining workforce, particularly in the imperial period.<sup>52</sup> As we have seen, the Dacian mining contracts point to the use of free labour in mines, as does the *Lex Metalli Vipascensis* (*CIL* 2, 5181). The latter document also highlights the potential diversity of economic opportunities offered by mining communities aside from actual mining, detailing concessions to bathkeepers, shoemakers, fullers, schoolteachers, and those involved in auction sales.<sup>53</sup> Opportunities were also available in activities linked more directly to the exploitation of the mines, such as the working of slag heaps and rock deposits. In this particular case, the monopolies granted by the regulations must have restricted the opportunities offered to migrants, but the necessity to include, for example, a clause prohibiting any itinerant barber (*circitor*) from practicing rather suggests that free workers could be drawn to the mines by opportunities other than mining.

For quarry workers at Mons Claudianus in Egypt, the wages paid appear to have been higher than those in other parts of Egypt, something perhaps necessary to draw workers to this remote location.<sup>54</sup> Van der Veen's analysis of the food remains also indicates that the workers there ate a rich and varied diet, suggesting a population enjoying a good standard of living, rather than slaves or convicts surviving on a subsistence diet.<sup>55</sup> The same may not necessarily be true of mining sites in Iberia, but since there is some evidence for the relative

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<sup>50</sup> Edmondson 1987: 61.

<sup>51</sup> Las Rubias, for example, on the slopes of Mount Teleno is at an altitude of 1700m and could not be worked in winter (Domergue 1990: 361).

<sup>52</sup> For free labour in the mines, see Mrozek 1989. Andreau 1990: 87-89; 92 argues for a mixed workforce in all periods, but with slave labour playing a more important role in the late Republic. Also Domergue 1990: 335; 350; Haley 1991: 98. For a comparison, see the well-documented free labour force at Mons Claudianus: Cuvigny 1996; Hirt 2010: 206-8; Jackson 2002: 48-49.

<sup>53</sup> See Edmondson 1987: 60 for a comparison with sixteenth-century mines at Potosi in Peru (now modern Bolivia), where just over a third of the workforce were directly involved in the extraction and processing of ore, and the remainder provided ancillary services for the miners.

<sup>54</sup> Cuvigny 1996: 141. See also Mrozek 1989, who argues that the state actively tried to improve conditions for free workers in the mines.

<sup>55</sup> Van der Veen 1998.

standardisation of pay in imperial mines and quarries, wages may well have been high enough to attract free workers.<sup>56</sup> The necropolis at Rio Tinto also included graves containing *sigillata* and glass, indicating a population living above subsistence level, although excavations at the mining settlement of Vipasca suggest a low level of wealth.<sup>57</sup> Nonetheless, the mobility of workers within the Iberian peninsula in the two centuries preceding the Antonine plague is well attested in the epigraphic record, and at least a proportion of this movement – Haley argues the largest economically-driven proportion – can be attributed to the economic attraction of mining regions for free workers.<sup>58</sup> Since mines were, by and large, not situated in particularly arable areas, and were not a great stimulus to urbanisation, the most plausible explanation for the presence of migrants in these regions must be the draw of the mines.<sup>59</sup>

### *The epigraphic record*

#### *(a) Methodology*

A number of inscriptions from Roman Iberia include the place of origin (*origo*) of named individuals, although in relative terms, the number is small. Of over 24,000 inscriptions included in the *Hispania Epigraphica* online database, only 473 record *origo* (i.e. less than 2% of the overall record), and fewer than 20% of these can plausibly be related to mines.<sup>60</sup> Furthermore, the sample of inscriptions selected for analysis here cannot claim to be definitive; it is based solely on those inscriptions included in *Hispania Epigraphica* (*HE*), and although an attempt has been made to be as comprehensive as possible, some inscriptions may have been overlooked. Moreover, given the low numbers of inscriptions that include *origo*, this is hardly likely to provide us with a full record of migration, either to mines or elsewhere. Neither does the inclusion of *origo* necessarily indicate migration; people also

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<sup>56</sup> See n.12.

<sup>57</sup> Blanco and Luzon 1966: 77 (Rio Tinto); Edmondson 1987: 85 (Vipasca). See also Domergue 1990: 361-363.

<sup>58</sup> For mining accounting for the largest proportion of epigraphically-attested *alieni* in Iberia who move for economic reasons, see Haley 1991: 98. For economic mobility in Iberia in general identified through the epigraphic record, see Haley 1991. Also see Stanley Jr 1990, mainly focused on migration to urban areas in Lusitania. For previous studies of inscriptions related to mining, see Blanco and Luzon 1966: 83-84; Domergue 1990: 336-46; Edmondson 1987: 61-67; Hirt 2010: 273-74. For mapping population movement on the basis of inscriptions in the Roman world more broadly, see Carroll 2006: 209-32; Noy 2010.

<sup>59</sup> For mines located in remote, mountainous regions, devoid of good arable land, see Edmondson 1987: 61; Fear 1996: 47. Also see n.73.

<sup>60</sup> Blanco and Luzon 1966: 83 note that the inclusion of *origo* is rare in Latin epigraphy in general but more common in Iberia. See also Noy 2010: 15.

sometimes stated their ethnic when they were commemorated within their own community.<sup>61</sup> Nevertheless, the inscriptions considered here number over eighty and are suggestive of a general trend of labour mobility towards mines within Iberia.

*Origo* is denoted through the adjectival form of a town or city, as for example with Titus Pompeius Fraternus Cluniensis from Clunia (*HE* 546) or Anius Toletanus from Toletum (*HE* 212). Inscriptions with such attestations of *origo* that can plausibly be linked to labour migration to mining centres are catalogued in Table 6.1, organised firstly by province, and secondly by findspot.<sup>62</sup> More problematically, names have sometimes been seen as indicating *origo*. Haley, for example, argues that ethnically derived *cognomina* have a geographic significance; a name such as Arantius Taporus (*HE* 4366) would then indicate an ethnic origin among the Taponi of Lusitania.<sup>63</sup> The *Hispania Epigraphica* database, for the most part, also includes onomastically-derived examples in its catalogue of *origo* inscriptions.<sup>64</sup> However, *origo* derived in this way is less secure and such names may not have any geographical significance.<sup>65</sup> Such inscriptions are, therefore, catalogued separately in Table 6.2.

In order to produce these catalogues, a search was undertaken for *HE* inscriptions that included details of *origo*, yielding 473 results. Slaves, freedmen, and administrative and military personnel were excluded from the selection in the first instance, since these are less relevant for any consideration of free labour mobility. A map was then created in ArcGIS marking the location of mines in Iberia, drawing on a combination of data from the mines database of the *Oxford Roman Economy Project*, the *Barrington Atlas of the Greek and Roman World*, and Domergue's detailed studies of mines in the peninsula.<sup>66</sup> Domergue counts 565 sites, and while not all of these are included in the map, all that are listed as active in the first and second centuries CE are included, since this is the period to which

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<sup>61</sup> See, for example, Quintus Julius Avitus Emeritensis, who was commemorated at Augusta Emerita (*HE* 19251).

<sup>62</sup> Inscriptions are catalogued here by their *HE* number; further details (e.g. *CIL* and *AE* references, images etc.) can be found on the *HE* website (<http://eda-bea.es/>: Last accessed 25/11/2014).

<sup>63</sup> Haley 1991: 22-23.

<sup>64</sup> It is, however, somewhat inconsistent in this. Among inscriptions including the *cognomen* Taporus, for example, some are classified as indicating *origo* (e.g. *HE* 18967; 20297), while others are not (e.g. *HE* 4366; 4367).

<sup>65</sup> Pers. comm. Jonathan Edmondson.

<sup>66</sup> For mines database, see [http://oxrep.classics.ox.ac.uk/databases/mines\\_database/](http://oxrep.classics.ox.ac.uk/databases/mines_database/). The database is not systematic, so was supplemented by data from the *Barrington Atlas of the Greek and Roman World*, which is available as a mapping layer on the Harvard Digital Atlas of Roman and Medieval Civilisation (<http://darmc.harvard.edu/icb/icb.do?keyword=k40248&pageid=icb.page188868>). Domergue 1987 provides a catalogue of mines, while Domergue 1990 is an in-depth study of mining in the Iberian Peninsula more generally.

most of the inscriptions in the database can be dated; 452 mines are mapped in total.<sup>67</sup> As it is difficult to gauge the chronology of a mine, the list cannot be definitive, but in general terms, a move from east to west can be identified, as the mines at New Carthage ceased to function, and mines in the southwest and northwest of Iberia began to be exploited.<sup>68</sup>

The findspots of the *origo* inscriptions were then added to the map in two separate layers, reflecting the different ways of denoting *origo*. Although inscriptions often have a long history of use and reuse, and it is therefore possible that some of those included in this sample were moved from their original location, the place of finding as given by *HE* was used for mapping purposes.<sup>69</sup> The spatial distribution of these inscriptions reflects the general pattern in the exploitation of mines, with notable clusters in the southwest and northwest of the peninsula.

The inscription findspots were then checked against the locations of Roman mines in Iberia, and those with findspots that were located within a 20 km 'bufferzone' of a mining site were noted. Those inscriptions with findspots in mining regions that fell just outside the 20 km radius were then checked against the location of cities and settlements in the map.<sup>70</sup> Inscriptions with findspots that were linked to an urban centre were not included, as the motivation for migration could not clearly be assigned to mining, although it remains a possibility, given the intensive mining in many of these regions.<sup>71</sup> Conversely, those inscriptions located in mining areas that could not reasonably be linked with any urban centre, but were just outside the 20 km radius criterion were included in the sample.<sup>72</sup>

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<sup>67</sup> For 565 sites, see Domergue 1987: I. See Domergue 1990: 201-03 for the list of mines exploited in Roman period; 203-214 for selection criteria.

<sup>68</sup> For the move from east to west, see Domergue 1990: 214; 519, fig. 4e-f. Not all locations were easy to pinpoint exactly on a map, given the general nature of the description (e.g. Algibe, located 15 km to the south of La Aliseda), but every effort has been made to map the location of maps as accurately as possible.

<sup>69</sup> For the reuse of inscriptions, see, for example, Cooley 2012: 320-21, including their use in town defences in Lusitania. Also Carroll 2006: 83-85. Findspots are clearly differentiated on the database from place of custody. A single inscription in the final catalogue was not mapped, as the findspot was the same as the point of origin, but this referred to the repatriation of the remains of one Vegetus from Mons Marianus to Conimbriga by his parents (*HE* 22185).

<sup>70</sup> The cities and settlements mapping layer was taken from the Harvard Digital Atlas of Roman and Medieval Civilisation in turn drawn from the *Barrington Atlas*.

<sup>71</sup> For example, *HE* 23402, found at Serpa; *HE* 21194, found at Beleizão in Portugal, close to Pax Julia, but also Vipasca (Aljustrel); *HE* 21251, close to Vicus Camalocensis; *HE* 22733, close to Castelo de Corregedor and Ammaia; and *HE* 22842, close to Ammaia.

<sup>72</sup> This includes *HE* 7787 and *HE* 18926. *HE* 20469 was also included, given its proximity to the major mining site at Vipasca (Aljustrel), although it could plausibly be linked to the settlement of Arandis also. An exception was also made for *HE* 20424, as according to Haley 1991: 93, this was found roughly equidistant from Vipasca (Aljustrel) and Pax Julia, rather than at Pax Julia as *HE* claims. A minority of inscriptions found within the 'bufferzones' were linked to urban centres, but were

Almost all the inscriptions were found in areas with intensive mining activity, and while the nearest mine to the findspot of the inscription is included in Tables 6.1 and 6.2, numerous other mines were often found within close proximity. It should be noted that none of these individuals claim to be miners (e.g. *metallici* or *fossores*). In fact, none of these inscriptions mention an occupation at all, and the link to mining is made solely on the basis of their location in proximity to mines and mining regions. However, the economy of these areas was dominated by mining, and the most likely explanation for the presence of migrants in these areas is the economic opportunities offered by the exploitation of local mineral resources.<sup>73</sup> These opportunities were broader than just mining itself, and also included ancillary services. Lucius Julius Reburinus (*HE* 24835), for example, a migrant at Rio Tinto, was almost certainly a potter, since twenty-six terracotta lamps from the area bear the initials L.I.R..<sup>74</sup>

The origins of the migrants were then added to the map, again as two separate layers.<sup>75</sup> Some points of origin are uncertain and these are marked with a question mark in Tables 6.1 and 6.2.<sup>76</sup> Inscriptions with *origo* locations that could not be mapped as they are unclear, ambiguous (largely due to multiple locations with similar names), or unknown were removed from the main catalogues and are collected in Table 6.3. Links were then made between the points of *origo* and the findspot locations, expressed as straight lines on the map; these were measured to give some idea of the distances moved, although this was done as straight lines between two points and in reality journeys must have been longer (see Figs. 6.1 and 6.2). This final step resulted in a final catalogue of over 80 inscriptions, collected together in Tables 6.1, 6.2 and 6.3.

### *(b) The limitations of the evidence*

Since these are largely funerary inscriptions, they record only those who died in these places. Many migrants may have returned home, although it should be noted that there are

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included given the close proximity to important mining sites (e.g. *HE* 3969 from Cordoba, and numerous inscriptions linked to Civitas Igaeditanorum).

<sup>73</sup> For the difficulties of proving a direct link between migrant inscriptions and mining, see Domergue 1990: 337; Hirt 2010: 274 n.70. For similar methodology with further discussion of mining and migration, see Haley 1991: 89-99.

<sup>74</sup> Edmondson 1987: 64. Lamps with his initials were also found at Cerro Muriano, Poderosa, and Aljustrel. This could indicate several things: that he was an itinerant potter, that he set up branch workshops at other mines, or that individual miners were moving around with his lamps.

<sup>75</sup> Most *origo* locations were mapped using the co-ordinates given on Pleiades, themselves based on the maps in the *BAGRW*. For points of origin based on tribal affiliation, a central point was selected within the appropriate region for mapping purposes.

<sup>76</sup> See, for example, L. Marcius Rusticus (*HE* 4519), most probably from Victoriacum.

several inscriptions recording individuals aged over sixty, whom we might expect to have returned home if this were indeed the case.<sup>77</sup> Furthermore, the so-called ‘epigraphic habit’ was not common to all; not everybody could afford such commemorations, and since these funerary inscriptions are written in Latin (both those with the ‘Roman’ *tria nomina* and those whose names were expressed in the indigenous form of a single name with a patronymic), erecting such a monument was a specific cultural act.<sup>78</sup> Additionally, mentioning *origo* was clearly not the norm. Those that did so must have made a conscious decision to record this additional information for specific personal or cultural reasons. There was, for instance, a particular predominance of migrants from Clunia in the epigraphic record, which may reflect local Clunian practice rather than testifying to a notable population movement from this urban centre.<sup>79</sup> Chronology is also a problem, since few of these inscriptions can be dated precisely, making it difficult to detect changing patterns in movement across time.<sup>80</sup>

Moreover, it is not clear at what point an individual stopped identifying with a particular *origo* or ethnicity; it is possible that some of the individuals recorded were what we could now categorise as second or even third generation immigrants. The eight month old baby, Lucius Helvius Lupus, for example, commemorated by his parents at Rio Tinto in the first half of the first century CE, and described as *Emeritensis* or from Augusta Emerita, was most likely born at Rio Tinto, unless his parents chose to make the 137 kilometre journey with a small baby (*HE* 560).<sup>81</sup> Other inscriptions that commemorate parents and children, however, attribute a particular *origo* to the parent only; the tombstone of Annia Vegeta, for example, attributes an *origo* of Lancia to the father only (*HE* 24873).<sup>82</sup> It may be that the example of the baby is exceptional, and we are dealing almost exclusively with first-generation migrants here, but certainty is impossible.

### *(c) Skilled or unskilled?*

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<sup>77</sup> See *HE* 422; 802; 3969; 4495; 4519; 12607; 14454; 18642; 18926; 19250.

<sup>78</sup> For setting up a Latin inscription as a distinctly *Roman* cultural act, see Edmondson 2002: 43; Noy 2010: 13. For patterns of naming, see Domergue 1990: 342-43; Knapp 1992. For the cost of funerals and memorials, see Carroll 2006: 77-78.

<sup>79</sup> See n.91. Knapp 1992: 411 notes that people from Clunia show a marked tendency to migrate but it may be that they are more likely to *record* their migration. See Domergue 1990: 345 for the suggestion that the area around Clunia experienced an economic crisis at some point (the date is difficult to fix), perhaps due to overpopulation or disaffection with the traditional local economy.

<sup>80</sup> On this problem, see Haley 1991: 24.

<sup>81</sup> The child takes his name from his mother, Helvia Secundilla, rather than his father, Probus, demonstrating the continuation of a Celtic form of filiation (Fear 1996: 258-9).

<sup>82</sup> See also *HE* 3969; *HE* 18642; 18926. Also *HE* 18926.

Clearly then there are limitations to this evidence, and there are different ways of interpreting this data. It could, for example, be argued that it is indicative of a much larger population movement, with these inscriptions testifying to the small number of migrants who left a record of their move, and representing a whole swathe of undocumented migration. Conversely, this data could be viewed as representing the movement of *skilled* workers or overseers and investors only, those who could afford to leave such monuments and for whom the rewards of moving were high enough to make it worthwhile. As we have seen, the movement of overseers or investors to the mines, rather than workers themselves, is also implied by at least some of the literary sources from the Republican period.<sup>83</sup>

Furthermore, Davies suggested back in the 1930s that the technical similarities in the methods of exploitation between mines in Iberia was the result of a school of mining engineers moving around to take up positions in different mines.<sup>84</sup> The pattern of movement revealed by the inscriptions catalogued in Tables 6.1 and 6.2 could further support this notion of skilled mining workers or exploiters moving around Iberia, since it is clear that migrants did not always simply move to their nearest mine. Ladronus, for example, a Bracaran from Northwest Spain died at Vipasca in Southern Portugal aged 30 (*HE* 20469); his point of *origo* was located in a region of intensive mining in the imperial period, particularly gold mining, yet he moved almost 500 kilometres south to Vipasca, perhaps facilitated by the *sodalitium Bracarorum* attested in Pax Julia (*HE* 23699; discussed further below). Similarly, Fuscus moved from Lancia to the mines at Santa Quiteria, a distance of almost 350 kilometres, rather than go to his more local mines in the northwest (*HE* 24127), and while 2 of the migrants from Clunia went to mines relatively close by, most went much further afield.<sup>85</sup> The place at which these individuals died may not have been their destination but a stop on their journey, and they may have started at their nearest mine and moved around as opportunities arose. The Dacian gold mine contracts, for example, are for a specified length of time (in one case, just over a year (*CIL* 3.2.TC IX) and in another, just less than six months (*CIL* 3.2.TC X)), presumably leaving these workers free to move on at the end of their contracts. All three contracts end on the same date (13

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<sup>83</sup> See, for example, Diod. Sic. 5.36.3.4; also perhaps Polybius 34.10.10-14 apud Strabo 4.6.1; p.000. For inscriptions relating to the upper echelon of mining society, see also Edmondson 1987: 61.

<sup>84</sup> Davies 1935: 130-31, referring here specifically to the technical similarities in modes of exploitation between Rio Tinto and Sotiel Coronada.

<sup>85</sup> *HE* 14390 and *HE* 18764 record migration from Clunia to the cluster of goldmines in Northwest Spain, still a distance of over 200 km, but in close proximity relatively speaking. Gaius Sempronius Aebarus (*HE* 16743), on the other hand, moved almost 480 km from Clunia to the Tage mines in Central Portugal. For more on the inscriptions from Clunia, [see p.000](#).

November 164), which was presumably of significance in the administration or working of the mine; our workers may then have been hired on new contracts after this date, rather than moving on.

The fact that these migrants moved over long distances does not in itself indicate that they were skilled. The demand for both skilled and unskilled labour must have fluctuated over the life course of a mine, and there was almost certainly mobility among unskilled workers too. This is clearly implied by the Dacian mining contracts, where the work to be undertaken is left as unspecified *opera*. However, there was a skill premium in the Roman world, and it was probably more advantageous for skilled workers to move around, particularly when we consider the technical and specialised nature of mining.

#### *(d) Distances, journey patterns, and organisation*

The movement of workers suggests that there was some means of transmitting information about opportunities at other mines. This becomes particularly clear when we consider that some of the migrants moved over substantial distances, although none came from outside Iberia, indicating that migration was largely regional.<sup>86</sup> The average distance moved by the migrants in Table 6.1 was 260 kilometres, but the length of individual journeys ranged from 16.7 (*HE* 20342) to 558.9 (*HE* 562) kilometres.<sup>87</sup> No particular pattern can be discerned in the distances moved, although only eight journeys were longer than 400 km.<sup>88</sup> Not only are the examples of *origo* in Table 6.2 less secure, given that they are derived from the names of the migrants, but the potential distances moved are more difficult to measure, since they must be calculated from an estimated point within a tribal region rather than a single point of origin. Nevertheless, we can determine the order of magnitude of the distances involved. The average journey was 206 kilometres, with journeys ranging from around 36 kilometres (*HE* 20089) to around 580 kilometres (*HE* 12801). Again, no clear pattern can be discerned in terms of distances.<sup>89</sup>

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<sup>86</sup> Stanley Jr. 1990 draws similar conclusions from his study of geographical mobility in Roman Lusitania. See also Edmondson 2004: 327-8.

<sup>87</sup> *HE* 22185 is listed as a journey of 600 km, but this is a rough estimate based on the distance from Conimbriga to the Mons Marianus region (Sierra Morena).

<sup>88</sup> 12 journeys were under 100 km; 8 between 100 and 200 km; 7 between 200 and 300 km; 17 between 300 and 400 km; 4 between 400 and 500 km; and 4 between 500 and 600 km.

<sup>89</sup> 9 journeys were under 100 km; 7 between 100 and 200 km; 8 between 200 and 300 km; 0 between 300 and 400 km; 3 between 400 and 500 km; and 2 between 500 and 600 km. In proportional terms, there were fewer longer migrant journeys in this sample (only 17% were over 300 km, as opposed to 48% of journeys in table 6.1).

If we think of mobility rather than single migrant journeys from one place to another, then the distances involved perhaps become less remarkable. Nevertheless, it remains likely that these journeys were not simply speculative, with individuals moving on the off-chance that work might be available. Rather this movement was the result of a rational choice based on the availability of work, both in the place of origin and the migrant destination. There are, for example, clusters of migrants from the area to the northwest and centre of Spain, including Clunia, Nova Augusta, Uxama (Argaela), Uxama Ibarca, Libia, and Victoriacum, and from central Lusitania, areas characterised by Domergue as poor regions, devoted to agriculture and farming.<sup>90</sup> The decision to move to an area with greater economic opportunities was thus a rational one, leading to focused migration flows, rather than arbitrary or unplanned mobility. This is where information networks are crucial, and these could be linked to a number of factors, such as a central organisational mechanism, systems of labour contractors, or links developed through practices such as chain migration.

While no clear system of movement emerges overall from the mapped inscriptions in Table 6.1, case studies of the destinations of migrants claiming *origo* from certain locations, together with the profile of migrants at particular mines, may help illuminate patterns of migration. There are, for example, eighteen migrants in Table 6.1 who state their *origo* as Clunia, just over 20% of the sample.<sup>91</sup> All these individuals died at least 200 km away from Clunia, and are recorded at 7 different locations, although there are notable clusters at Três Minas and Monfortinho.<sup>92</sup> The six Clunians recorded at Três Minas were all men who died between the ages of 20 and 40, and comprise the total number of individuals in *HE* who recorded an *origo* at this particular mine. This migrant profile of adult males is consistent with the idea of skilled mining workers. Similarly, the six Clunians recorded at Monfortinho were also all men, and although fewer of these individuals included their age at death, the two that did died aged 20 (*HE* 20090) and 40 (*HE* 20152).<sup>93</sup> In total, there are seventeen individuals with recorded *origo* documented in the vicinity of Monfortinho, although the

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<sup>90</sup> Domergue 1990: 345. See also Edmondson 1987: 64 for migrants coming largely from agriculturally unfavourable areas of the peninsula; also Edmondson 2004: 328. See [n.79](#) for suggestion of an economic crisis in the region around Clunia encouraging emigration.

<sup>91</sup> Migrants from Clunia: *HE* 213; 546; 5597; 6668; 7757; 7758; 7759; 7760; 8207; 14454; 16743; 18764; 18926; 20090; 20152; 20170; 21469; 25987.

<sup>92</sup> Três Minas: *HE* 6668; 7757; 7758; 7759; 7760; 8207. Monfortinho: *HE* 5597; 20090; 20152; 20170; 21469; 25987.

<sup>93</sup> All the Clunian migrants whose sex can be determined from their name were male. The name in *HE* 18764 is illegible, making it impossible to discern the sex of the individual concerned.

only notable cluster of shared *origo* relates to the Clunians;<sup>94</sup> it should be noted, however, that these inscriptions were all linked to the urban centre of Civitas Igaeditanorum, so cannot be definitively connected with mining.<sup>95</sup> There were also two Clunians who followed a similar route to the mines in Northwest Spain; these two men moved the shortest distance of any Clunians, 209.2 and 193.4 km respectively, although the distances involved are still significant (*HE* 14454 and 18764).

The six migrants who record their *origo* as Olisipo all follow similar migration paths, moving to the cluster of mines in the southwest of Iberia, with two dying at Rio Tinto and two at Concepcion, although this may primarily be due to proximity rather than any other factors.<sup>96</sup> Conversely, the seven migrants from Augusta Emerita go in a multitude of directions, with only two of these possibly moving in the same direction to Cerro de la Mina;<sup>97</sup> this as much as anything indicates that we are most likely dealing with the voluntary migration of individuals here, rather than any resettlement of communities.

A mixed picture also emerges if we look at the profile of migrants in particular mining regions. In the vicinity of the gold mines at Rio Turienzo in Northwest Spain, for example, eleven inscriptions record *origo*, and four of these individuals, including two women, identify themselves as Supertamarci, a tribal group located to the west of the mines.<sup>98</sup> Another two were Cileni, located to the south of the Supertamarci (*HE* 8460; 19250), and as we have seen, two came from Clunia (*HE* 14454; 19250), but the remaining three migrants were from different places (*HE* 2899; 6714; 14387). Other pairs with a shared *origo* found in proximity to a mine include two Taporii at Las Morras (*HE* 4366; 4367), and two Suerri at Urros (*HE* 12607; 20028).<sup>99</sup>

The numbers here are perhaps too small to point to any definitive patterns, but the presence of clusters and pairs of individuals with a shared *origo* could point towards networks of labour contractors performing roles similar to that of Vespasian's great grandfather in Italy, and perhaps some chain migration. Some of this movement may also

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<sup>94</sup> The only other shared *origo* belongs to a man and a woman from the Lancienses Oppidani (*HE* 20089 and 24874 respectively).

<sup>95</sup> See Edmondson 1987: 64-65 for the suggestion that the large number of inscriptions testifying to immigrants at Civitas Igaeditanorum was due to its location in an area of intensive gold mining.

<sup>96</sup> Rio Tinto: *HE* 5354; 24835. Concepcion: *HE* 5338; 5363. See also *HE* 799; 12801; 20424; 24835.

<sup>97</sup> Cerro de la Mina: *HE* 836; 851. These two texts were recorded in the nineteenth century, but are now both lost. As they are similar in layout and content, Edmondson suggests that they might well be the same text with a variant findspot recorded (Pers. Comm.). See also *HE* 560; 4495; 25057; 25988.

<sup>98</sup> *HE* 7455; 8732; 8734; 14390.

<sup>99</sup> Also see the two migrants from Augusta Emerita at Cerro de la Mina (*HE* 836; 851) and the two from Turgalium at Plasenzuela (*HE* 22090; 20342), although these journeys are fairly short (from 16.7 to 64.4 kilometres) and may reflect proximity rather than any particular patterns of movement.

have been organised through associations such as *collegia*, *sodales*, and *sodalicia*. At Pax Julia, for example, a town close to the mines at Vipasca, a dedication to a Deus Invictus was made in the second century CE by a *sodalitium Bracarorum* (HE 23699), an association of Bracari, whose point of origin was hundreds of kilometres to the north.<sup>100</sup> Ladronus, a Bracaran from Castello Durbede, was recorded in the vicinity of Vipasca in the first century CE (HE 20469), and his movement may have been facilitated by an earlier version of this association; at the very least it may have assisted him by providing contacts and advice on his arrival in the south. Certainly comparative material demonstrates the importance of such networks not only in stimulating movement, but also in assisting migrants with finding housing and work upon arrival in a particular location.<sup>101</sup>

*(e) The paradigm of the single adult male*

Despite the clusters of male migrants noted from Clunia, in general the epigraphic record from Iberia suggests that migration was a much broader phenomenon, encompassing men, women, and children.<sup>102</sup> Seventeen women and girls are included in the sample (Tables 6.1 and 6.2), with ages at death ranging from twelve (HE 805) to sixty-seven (HE 802). These migrants move an average of 190 km, which is congruent with the overall migratory pattern; the shortest distance travelled is 34.1 km (HE22090) and the longest is almost 560 km (HE 562). While some are commemorated by husbands (HE 822; 8460; 20028; 22777), others are commemorated by female family members or kin, including a *soror* (HE 8732), a *mater* (HE 805; 821), and daughters (HE 24874).<sup>103</sup> A number of these women, however, such as Licinia Materna, who claims Nova Augusta as her *origo* and died aged thirty at Rio Tinto, over 550 kilometres away (HE 562), are not commemorated by any named individual.<sup>104</sup> Most studies emphasise the restrictions on female mobility and clearly men dominate the record here, but women comprise a substantial minority of the sample, constituting almost 20% of the overall catalogue.<sup>105</sup> Furthermore, while the lack of a named commemorator on the funerary monuments of some of these women does not necessarily indicate that they

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<sup>100</sup> Haley 1991: 27; 92. A *collegium* is also attested at Rio Tinto (Blanco and Luzon 1966: 82). See also HE 422 for the commemoration of the deceased by a *sodales*. See Edmondson 1984 for a detailed discussion of this inscription.

<sup>101</sup> See Holleran (forthcoming) for the potential role of migrant networks in finding work in Rome.

<sup>102</sup> For the notion that migration was primarily the preserve of the young adult male, see Prowse *et al.* 2007: 517. See also Bruun 2010: 123, who makes the point that this view has not been particularly prevalent among historians of the ancient world.

<sup>103</sup> *Soror* need not literally mean a sister, but could refer to a more distant female relative.

<sup>104</sup> See also HE 802; 7455; 14387; 22090; 25057.

<sup>105</sup> For restrictions on female mobility, see, for example, Woolf 2013a.

were without family, it is perhaps suggestive of some single female migration. Those commemorated by husbands and children may also have moved prior to marriage and children.<sup>106</sup>

The mining regulations from Vipasca (*CIL* 2, 5181) certainly indicate a mixed community, encompassing not only slave and free, but also women and children. It was stipulated, for example, that the lessee of the baths must keep the baths open until the seventh hour for women (and from the eighth to the second hour after sunset for men); women also paid one *as* for entry, double the half an *as* that it cost the men. At least some of these women may have been economic migrants, attracted by the opportunities offered by mining communities, be it in retail, bars, prostitution, and the like, or even in mining itself.<sup>107</sup> For what it is worth (and this should largely be seen in the context of ethnographic stereotyping of the ‘barbarian other’), Posidonius claims (Strabo 3.2.9) that in the late Republican period, women in the far northwest of Lusitania mined for metal; silver, tin, and ‘white gold’ (gold mixed with silver) was brought downstream in the soil and women scraped this up with shovels and washed it in sieves. There are no discernible patterns of movement or age among these women, but at the very least it reminds us that we should look beyond the paradigm of the single adult male when thinking about migration in the Roman world.<sup>108</sup>

A small number of children and adolescents are also included in the sample, ranging in age from eight months to fifteen.<sup>109</sup> As discussed above, some of these may have been ‘second-generation’ migrants, but these inscriptions could also point to some family migration.<sup>110</sup> Child labour was used in the mines, so it is perhaps unsurprising that we find them documented in the epigraphic record linked to mining sites.<sup>111</sup> One funerary monument even depicts a child as a miner; Q(u)artulus, who died aged 4, is shown with a small hammer and basket (*HE* 9397).<sup>112</sup> Commemoration of the deceased by siblings also

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<sup>106</sup> On single and family migration to Augusta Emerita, see Edmondson 2004: 346-347.

<sup>107</sup> For working women in Roman Italy and their roles in retail in particular, see Holleran 2013.

<sup>108</sup> Ages at death range from 20 to 67 years.

<sup>109</sup> *HE* 546; 560; 805; 6714; 2899; 14390; 19243.

<sup>110</sup> The possibility of family migration to Ostia-Portus is also raised by Prowse *et al.* 2007 in their isotopic analysis of dental enamel from the cemetery at Isola Sacra, although see the response of Bruun 2010. Also Killgrove 2010b; 2010c.

<sup>111</sup> See, for example, Diod. Sic. 3.13.1; Edmondson 1987: 68. If, as is now generally accepted, we are to read *CIL* 3.2 TC. X as saying *liberisque* rather than *cibarisque*, the Dacian mining contracts include a wage rate for children (Cuvigny 1996: 142-3).

<sup>112</sup> On this monument – and child labour in ancient mines more broadly – see Giardina 2000; he also argues that the age at death should be read as 9 rather than 4, bringing Quartulus more into line with the pattern of both ancient and more modern usage of child labour in mining. See also Blanco and Luzon 1966: 86; 88 (Fig. 10).

points to the movement of families, either as children or as young adults; a certain Paternus, for example, who died aged twenty, was commemorated by a *frater* (*HE* 12801), although this could refer more generally to a male relative or kinsman rather than an actual brother.<sup>113</sup> The presence of families within these communities may also point to more permanent migration as opposed to a general mobility of workers. Older teenagers, such as Vegetus, whose remains were repatriated by his grieving parents from Mons Marianus to Conimbriga when he died aged eighteen, were moving independently of their parents (*HE* 22185).

The epigraphic data is not without its problems and for that reason any interpretation of this material must remain tentative. However, it is clearly indicative of the movement of people around the Iberian Peninsula, and it points to a world of labour mobility, supporting the picture that emerges from the literary and legal material. It was not only urban centres that drew in migrants, but also mining centres, which had a high demand for labour; some of this labour may have been forced, but a significant proportion, particularly in the imperial period, appears to have been free. Tracking the movement of individuals through the epigraphic record demonstrates that people were prepared to move over significant distances for economic opportunities, although this movement was largely regional (in the sense that it was confined to Iberia), and it is not clear if such trips were made in stages or in a single journey. Women and children also appear as migrants, potentially indicating some family migration, and possibly even the movement of single females to mining regions. Furthermore, there are indications that some people either moved in groups, perhaps at the behest of labour contractors, or that there were links between particular locations that encouraged some chain migration. Despite the difficulties of interpreting this data then, it is suggestive of a functioning labour market within the Iberian Peninsula, with some effective means of transmitting information about economic opportunities between often distant locations, and offering sufficient incentives to draw people to mining communities that were often situated in remote, mountainous locations.

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<sup>113</sup> See also *HE* 1783; 7754; 8732; 20296; 22693; 25987.

Table 6.1. Migrants to mining areas

Province	Find Spot	Point of Origin	HE No.	Nearest Mine <sup>114</sup>	Name of Migrant <sup>115</sup>	Age	Sex	Text <sup>116</sup>	Distance (Km) <sup>117</sup>
Baetica	Alajar, Huelva, Spain	Olisipo	5338	Concepcion (H6; Cu)	Caius Cabius Atius		M	C(aius) Cabius / Atius Olisi(ponensis) / hic situs est / s(it) [t(ibi) t(erra) l(evis)]	236.1
Baetica	Alconera, Badajoz, Spain	Augusta Emerita	836	Cerro de la Mina (BA60; Arg; Pb)	L. Lucretius Marinus		M	- - - - - / L(ucius) Lucretius / Marinus Emer(itensis) / v(otum) s(olvit) l(ibens) m(erito)	59.9
Baetica	Alosno, Huelva, Spain	Olisipo	799	Prado Viciosa (H11; Cu)	Anon.			N[- - -]O[- - -]N / co(n)iugi [- - -]I / Tura[- - -]P[- - -] / Olisiponensi	220.3
Baetica	Aroche, Huelva, Spain	Arabrigenses	802	Pico del Aguila (H28; Cu)	Vibia Crispa	67	F	D(is) · M(anibus) · s(acrum) / Vibia · Cr/ispa · Ru/fini Ara/brigensis / annor(um) / LXVII / h(ic) · s(ita) · e(st) · s(it) · t(ibi) · t(erra) · l(evis)	352.6
Baetica	Castuera, Badajoz, Spain	Metellinum	422	Gamonita (BA32; Arg; Pb)	M. Helvius Sabinus	60	M	M(arcus) · Helv/iu*s · Sab/inus · M/etel(l)ine(nsis) / an(norum) · LX · h(ic) · s(itus) · / e(st) · s(it) · t(ibi) ·	34.3

<sup>114</sup> Text in parentheses provides the site reference number in Domergue's 1987 catalogue of mines, together with the type of metals produced (Au = gold; Arg = silver; Cu = copper; Fe = iron; Pb = lead).

<sup>115</sup> The name of the migrant does not always relate to the deceased, but sometimes to the commemorator.

<sup>116</sup> The texts of the inscriptions are drawn from the *Hispania Epigraphica Online Database*, adapted where necessary.

<sup>117</sup> Distances are measured as a straight line between the point of origin and the findspot; in reality, journeys must have been longer.

								t(erra) • l(evis) • / sod(ales) • tab(ulae) / saluta(ris) / f(aciendum) • c(uraverunt)	
Baetica	Cordoba, Spain	Asido	3969	Casilla del Cobre (CO40; Cu)	M. Fabius Themison	70	M	M(arcus) Fabius Themison Asidone(n)sis / annor(um) LXX pius in suis / hic s(itus) e(st) s(it) t(ibi) t(erra) l(evis) / Fabia Modesta Themisonis f(ilia) / annor(um) XX pia in suis / hic s(ita) e(st) s(it) t(ibi) t(erra) l(evis) / [- - - - -] / Iunia T(iti) lib(erta) Clarina / ann(or)um LX pia in suis / hic s(ita) e(st) s(it) t(ibi) t(erra) l(evis)	188
Baetica	Medina de las Torres, Badajoz, Spain	Augusta Emerita	851	Cerro de la Mina (BA60; Arg; Pb)	L. Albanus		M	- - - - - / Licinius • M(arci) • f(ilius) / Albanus • Emer(itensis) / v(otum) • s(olvit) • l(ibens) • m(erito)	64.4
Baetica	Minas de Riotinto, Huelva, Spain	Augusta Emerita	560	Rio Tinto (H43; Cu; Arg; Fe)	Lucius Helvius Lupus	8 mth s	M	L(ucius) Helvius Lupus / Emeritensis mens(ium) / VIII h(ic) s(itus) e(st) s(it) t(ibi) t(erra) l(evis) fac(iendum) c(uraverunt) / Helvia Secundilla m(ater) / et Probus pat[e]r	137.3
Baetica	Minas de Riotinto, Huelva, Spain	Nova Augusta	562	Rio Tinto (H43; Cu; Arg; Fe)	Licinia Materna	30	F	Licinia Paterni / f(ilia) Materna / Novaugustana / ann(or)um XXX h(ic) s(ita) e(st) s(it) t(ibi) t(erra) l(evis)	558.9

Baetica	Minas de Riotinto, Huelva, Spain	Olisipo	5354	Rio Tinto (H43; Cu; Arg; Fe)	Anon.			----- / [---]sis / [---] Oli/[siponen]sis an(norum) / [--- h(ic)] s(itus) e(st) s(it) t(ibi) t(erra) l(evis) / [- -] facien/[dum curavit]	250.4
Baetica	Minas de Riotinto, Huelva, Spain	Olisipo	24835	Rio Tinto (H43; Cu; Arg; Fe)	Lucius Julius Reburinus	41	M	D(iis) M(anibus) S(acrum) / L(ucius) · Iulius · Reb/urrinus · Olisip(onensis) / an(norum) · XLI · h(ic) · s(itus) · e(st) · s(it) · t(ibi) · t(erra) · l(euis) / Fortunata con/tubernalis · f(aciendum) · c(uravit) ·	250.4
Baetica	Moura, Portugal	Pax Julia	22777	Crueira (POR10; Cu)	Asinia Priscilla	31	F	D(is) · M(anibus) · s(acrum) · / A·sin(ia) · Pr/iscilla / Pac(ensis) · c(oniux?) · r(arissima?) · an/n(orum) · XXXI h(ic) s(ita) e(st) / A(- -) · H(- -) · u(xori) · p(iissimae) · p(onendum) · c(uravit) / s(it) · t(ibi) · t(erra) · l(evis)	38.8
Baetica	Santo Amador, Portugal	Pax Julia	805	Ruy Gomes (POR8; Cu)	Modesta	12	F	Modesta · Mo/desti filia / Pacensis / ann(orum) · XII / [h(ic) s(ita)] e(st) · te · r(ogo) · p(raeteriens) · d(icas) · s(it) · / [t(ibi) t(erra) l(evis)] mater f(ecit)	49.9
Baetica	Villanueva de los Castillejos, Huelva, Spain	Olisipo	5363	Concepcion (H6; Cu)	Anon.			]SM[--- / ---]R O[li]/sipo/ne(n)sis / [h(ic)] s(itus) e(st)	236.1

Baetica	Zafra, Badajoz, Spain	Segeda	822	Cerro de la Mina (BA60; Arg; Pb)	Sperata	45	F	D(is) · M(anibus) · s(acrum) / L(- - -) · E(- - -) · Sperata · Seged{ij}ensis · / ann(or)um · XXXXV · h(ic) · s(ita) · e(st) · / L(- - -) · Quaternus · uxori / et · L(- - -) · Cincinatus · matri / optumae posuerunt ·	526.3
Baetica	Zalamea de La Serena, Badajoz, Spain	Augusta Emerita	4495	Atollar de los Frailes (H61; Arg; Pb)	Tongilia Maxuma	60	F	Tongilia · T(iti) · f(ilia) · Maxuma · Scaevini / Emeritensis · annorum · LX · sibi · et / L(ucio) · Granio · L(uci) · f(ilio) · Pap(iria) · Scaevino · viro / ann(or)um · LXXXV · d(e) · s(ua) · p(ecunia) · f(aciendum) · c(uravit) · h(ic) · s(iti) · s(unt) · s(it) · v(obis) · t(erra) levis	66.8
Baetica	Zalamea de La Serena, Badajoz, Spain	Victoriacum?	4519	Atollar de los Frailes (H61; Arg; Pb)	Lucius Marcus Rusticus	70	M	L(ucius) · Marcus / Rusticus · Vi/ctor(- - -) · an(norum) · LXX · / h(ic) · s(itus) · est · s(it) · t(ibi) · t(erra) · l(evis) · / Tab(u)la · f(aciendum) · c(uravit)	529.6
Lusitania	Alía, Cáceres, Spain	Lancia	24127	Santa Quiteria (TO1; Arg; Pb)	Fuscus	50	M	Fuscus / Dobiteri [f(ilius)] / · Lanciens(is) / an(norum) · L · h(ic) · s(itus) e(st) s(it) / t(ibi) · t(erra) · l(evis) ·	342.6

Lusitania	Beja, Portugal (Pax Julia)	Olisipo	20424	Between Aljustrel (POR2; Cu; Arg; Fe) and Pax Julia (find spot in Haley 1991: 93)	M. Iulius Avitus	30	M	M(arcus) IULIUS / AVITUS O/LISIP(onensis) ANNOR(um) / XXX H(ic) S(itus) (hedera) (est)	136.5
Lusitania	Belver, Portugal	Clunia	16743	Tagus River 1: Mouricos (POR33; Au)	Gaius Sempronius Aebarus		M	C(aius) Sempron/ius Aebaru[s] / Viscunos Ni[ - - ] / f(ilius) Clunie(n)s(is) an(norum) X[ - - ] / h(ic) s(itus) e(st) s(it) [t(ibi) t(erra) l(evis)]	477.5
Lusitania	Capinha, Portugal	Meidubriga	20296	Meimoa (POR18; Au)	Hispanus	50	M	Hispanus Tangini f(ilius) Mei/dubrigensis ann(or)um L h(ic) s(itus) e(st) / Cessea Celti f(ilia) soror ob merita f(aciendum) c(uravit)	90
Lusitania	Condeixa-a-Velha, Portugal	Conimbriga	22185	Repatriated from Mons Marianus	Vegetus	18	M	Vegeto Aviti f(ilio) / an(norum) XVIII defuncto / Monte Mariano / o(ssis) t(ranslatis) Avitus Arconis f(ilius) / et Rufina Rufi f(ilia) / parentes f(aciendum) c(uraverunt) s(it) t(ibi) t(erra) l(evis)	600
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Clunia	5597	Monfortinho (POR17; Au)	Gaius Fabius		M	C(aio) • Fabio • C(ai) • f(ilio) • Verno / Cluniensi • Fabiae / Fabi(i) • lib(ertae) • Bassae • heres / ex • test(amento) • Bassae f(aciendum) • c(uravit) • s(it) • v(obis) • t(erra) • l(evis)	388.7

Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Clunia	20090	Monfortinho (POR17; Au)	Aternus	20	M	Aternus A[- - -]/cae f(ilius) Clun(iensis) / an(norum) XX h(ic) s(itus) / e(st) / [s(it) t(ibi)] t(erra) l(evis)	388.7
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Clunia	20152	Monfortinho (POR17; Au)	Lucius Cornelius	40	M	L(ucius) Cornelius Q(uinti) f(ilius) / Cluniens(is) an(norum) / XL · h(ic) · s(itus) · e(st) · s(it) · t(ibi) · t(erra) · l(evis)	388.7
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Clunia	20170	Monfortinho (POR17; Au)	Gaius Valerius		M	P(ublio) Valerio / Celti · f(ilio) · Quir(ina) / Clementi / C(aius) Valerius / Gal(eria) Clu(niensis) / - - - - - -	388.7
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Conimbriga	20171	Monfortinho (POR17; Au)	Marcus Allacarius Celer Paulliannus		M	Valgiae C(ai) / f(iliae) / Flaccillae / M(arcus) Allacarius / Celer Paullia/nus Conimbri/gensis	115.2
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Salmantica	21457	Monfortinho (POR17; Au)	Lucius Antius Avitus		M	Aemil[i]a[e] Rufina[e] / L(ucius) Antius Avitus Salmantic(ensis) / mar(itus) [et] h(eres) ex te[stamento f(aciendum) c(uravit)]	165.6
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Libia	21458	Monfortinho (POR17; Au)	Arrenus		M	Arreno Cresce/ntis f(ilio) Libiensi / Maurilla Celeris / lib(erta) marito f(aciendum) c(uravit)	442.2
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Clunia	21469	Monfortinho (POR17; Au)	Tuatro		M	Tuatro / Fronto/nis (filio) Clun(iensi) / Reburrus / frater / f(aciendum) c(uravit)	388.7

Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Lancia	24873	Monfortinho (POR17; Au)	Annius Valens		M	Anniae / Vegetae / Anni(i) · Valentis / Lanciensis · f(iliae) / ex · testamento / Anniae Rufinae / matris · eius	317
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Clunia	25987	Monfortinho (POR17; Au)	Lautro		M	Luatro / Fronto/[n]is f(ilio) Clun(iensi) / [R]eburrus / [f]rater / f(aciendum) c(uravit)	388.7
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Augusta Emerita	25988	Monfortinho (POR17; Au)	Gaius Furius Lycius / Gaius Furius Eutyches	50 /20?	M/ M	L(ucius) · Cocceius / Lycius · an(norum) · C / C(aius) · Furius · Lycius / Emer(itensis) · an(norum) · L / C(aius) · Furius · Eutyches / Emer(itensis) · an(norum) XX / ----- ?	138.6
Lusitania	La Nava de Ricomalillo, Toledo, Spain	Toletum	212	Nava de Ricomalillo (TO2; Au)	Anius	50	M	Anius · Alpeti / f(ilius) · Toletanus / an(norum) · L · h(ic) · s(itus) · e(st) / s(it) · t(ibi) · t(erra) · l(evis)	85.8
Lusitania	La Nava de Ricomalillo, Toledo, Spain	Avila	215	Nava de Ricomalillo (TO2; Au)	Maeso		M	Maeso · B/urri f(ilius) Av/ile(nsis) · h(ic) · s(itus) · e(st)	114.9
Lusitania	Meimoa, Portugal	Clunia	18926	Herdade da Tinoca (POR29; Cu)	Titus Domitius Postumus	66	M	T(itus) Domitius [- - -] / Postumus Clun(iensis) / an(norum) LXVI h(ic) s(itus) [e(st)] / L(ucius) Dom(itius) Postuminus P[- - -]	440

Lusitania	Penacova, Portugal	Sellium?	22693	Furados de Pombeiro (POR19; Au)	G. Valerius Juilianus	18	M	G(aius) Valerius Iulianus Seiliensis / annorum XVIII h(ic) s(itus) e(st) s(it) t(ibi) t(erra) l(evis) / M(arcus) Antonius Iulianus / fratri piissimo / faciendum curavit	75
Lusitania	Plasenzuela, Cáceres, Spain	Turgalium	20342	Plasenzuela (CC2; Arg; Pb)	Libaeco		M	Libaeco / Caenici f(ilio) / Turgalese / h(ic) s(itus) e(st)	16.7
Lusitania	Salvatierra de Santiago, Cáceres, Spain	Augusta Emerita	25057	Plasenzuela (CC2; Arg; Pb)	Roscia Caesia	50	F	Roscia • C(ai) • f(ilia) / Caesia / Emerite(nsis) / an(norum) • L / h(ic) • s(ita) • e(st) • s(it) • t(ibi) • t(erra) • l(evis)	51.2
Lusitania	Sevilleja de la Jara, Toledo, Spain	Clunia	213	Nava de Ricomalillo (TO2; Au)	L. Cornelius Hispanus	45	M	L(ucius) • Cornelius • Hispa/nus • Clu(niensis) • an(norum) • XLV / h(ic) • s(itus) • e(st) • s(it) • t(ibi) • t(erra) • l(evis)	324.9
Lusitania	Sierra de Fuentes, Cáceres, Spain	Turgalium?	22090	Plasenzuela (CC2; Arg; Pb)	Maxsuma Teia	20	F	Maxsu/ma • Teia / Turcale(nsis) / Arconi • / [f(ilia)] • an(norum) • XX / [h(ic)] • s(ita) • e(st) • s(it) • t(ibi) • t(erra) • l(evis)	34.1
Tarraco- nensis	Astorga, León, Spain	Uxama Ibarca	2899	Rio Turienzo (LE37; Au)	Baebius Latro	13	M	Baebius / Latro Nig/ri f(ilius) / Uxama / Ibarcens/is / an(norum) XIII / h(ic) s(itus) e(st)	249.8

Tarraco-nensis	Astorga, León, Spain	Clunia	18764	Rio Turienzo (LE37; Au)	Anon.			----- / [---]A · VEN+A[---] / ---] · Clun(iensi)	193.4
Tarraco-nensis	Baños de la Encina, Jaén, Spain	Clunia	546	Salas de Galiarda (J10; Cu)	Titus Pompeius Fraternus	15	M	T(itus) Pompei/us C(ai) f(ilius) Ga/leria Fr/aternus / Cluniens/is an(norum) XV / h(ic) s(itus) e(st) / t(e) r(ogo) p(raeteriens) d(icas) s(it) t(ibi) / t(erra) l(evis)	462.5
Tarraco-nensis	Cacabelos, León, Spain	Uxama (Argaela)	11997	Toral de los Vados (LE55; Au)	Flavia		F	Deae / Degant+[---] / Flavia Fl[av(i)] / in hono[rem] / Argael[orum] / f(ecit) l(ibens) e(x) [v(oto)]	321.9
Tarraco-nensis	Santa Colomba de Somoza, León, Spain	Clunia	14454	Rio Turienzo (LE37; Au)	Aternus	60	M	Atern.. Mni F. Clu... LX HSE.... VS	209.2
Tarraco-nensis	Tresminas, Portugal	Clunia	6668	Três Minas (POR45; Au)	Magius	20?	M	[--- M]agius / [Ma]gi f(ilius) Clun/iensis an/norum XX[---] / h(ic) s(itus) e(st)	330.1
Tarraco-nensis	Tresminas, Portugal	Clunia	7757	Três Minas (POR45; Au)	Titus Boutius	40	M	T(itus) Bouti/[---]o Seg/onti f(ilius) Cl(uniensis) an(norum) XL / h(ic) s(itus) e(st)	330.1
Tarraco-nensis	Tresminas, Portugal	Clunia	7758	Três Minas (POR45; Au)	Gaius Septumius	30	M	C(aius) Septumius / [---] f(ilius) Clu(niensis) a(nnorum) / [---]XXX / h(ic) s(itus) e(st)	330.1
Tarraco-nensis	Tresminas, Portugal	Clunia	7759	Três Minas (POR45; Au)	Gaius Licinius	25	M	C(aius) Licinius / Clun(iensis) an(norum) /	330.1

								XXV h(ic) s(itus) e(st)	
Tarraco- nensis	Tresminas, Portugal	Clunia	7760	Três Minas (POR45; Au)	Sorex	30	M	-----] Sorex / Clu(niensis) / an(norum) XXX / h(ic) s(itus) e(st) / s(it) t(ibi) t(erra) l(evis)	330.1
Tarraco- nensis	Tresminas, Portugal	Clunia	8207	Três Minas (POR45; Au)	Cornelius? Couneancus	40	M	C(ornelius?) Coune/ancus / Fusci [f(ilius)] Clu(niensis) / [a]n(norum) XL / LA CIV / [-----] / VS C / XXX h(ic) s(itus) e(st)	330.1

Table 6.2. Migrants to mining areas (onomastics)

Province	Find Spot	Point of Origin	HE No.	Nearest Mine <sup>118</sup>	Name of Migrant <sup>119</sup>	Age	Sex	Text <sup>120</sup>	Distance (km) <sup>121</sup>
Baetica	Calañas, Huelva, Spain	Limici (Castellum Berensis)	1783	Sotiel Coronada (H20; Cu)	Reburrus		M	Reburrus / Vacisi • f(ilius) • caste/llo • Berensi / Limicus • h(ic) • s(itus) • e(st) / [A]pu[s] • fratr(i) / fecit	495.8
Baetica	Jabugo, Huelva, Spain	Limici (Castellum Talabriga)	7754	Concepcion (H6; Cu)	Anceitus	30	M	Anceitus Vaccei f(ilius) Limi/cus  (castello) Talabriga an(norum) / XXX h(ic) s(itus) e(st) s(it) t(ibi) t(erra) l(evis) [F]lavus Aquilus frater / suus et Talavius Cloutius / Cloutai f(ilius) et Urtienus / Turdae f(ilius) et fratres eius / [f]aciendum curaveru[nt] / ob m(erita) eius	468.8
Baetica	Niebla, Huelva, Spain	Limici	1688	Rio Corumbel (H36; Cu; Arg; Pb)	Celer		M	Celer Erbuti f(ilius) Limicus / Borea Cantibedoniensi / muneris tes(s)era(m) dedit / anno M(arco) Licinio co(n)s(u)le	531.1
Baetica	Santa Eufemia, Córdoba, Spain	Tapori	4366	Las Morras (CO110; Arg; Pb)	Arantionius		M	Arantoni/us Cili f(ilius) / [T]aporu[s] / -----	286.3

<sup>118</sup> Text in parentheses provides the site reference number in Domergue's 1987 catalogue of mines, together with the type of metals produced (Au = gold; Arg = silver; Cu = copper; Fe = iron; Pb = lead).

<sup>119</sup> The name of the migrant does not always relate to the deceased, but sometimes to the commemorator.

<sup>120</sup> The texts of the inscriptions are drawn from the *Hispania Epigraphica Online Database*, adapted where necessary.

<sup>121</sup> Distances are measured as a straight line between the point of origin and the findspot; in reality, journeys must have been longer.

Baetica	Santa Eufemia, Córdoba, Spain	Tapori	4367	Las Morras (CO110; Arg; Pb)	Lupus	35	M	Lupus Ca/mali Tap(orus) / ann(orum) XX/XV h(ic) s(itus) e(st) / t(e) r(ogo) p(raeteriens) d(icas) s(it) / t(ibi) t(erra) l(evis)	286.3
Baetica	Zafra, Badajoz, Spain	Igaeditania	821	Cerro de la Mina (BA60; Arg; Pb)	Allia Severa	22	F	Allia • Severa / Igaeditana / ann(orum) • XXII / h(ic) • s(ita) • e(st) • s(it) • t(ibi) • t(erra) • l(evis) / Allia • Modesta / mater / f(aciendum) c(uravit)	185.7
Lusitania	Garvão, Portugal	Bracarii (Castellum Durbede)	20469	Aljustrel (POR2; Cu; Arg; Fe)	Ladronus	30	M	Ladronu[s] / Dovai • Bra[ca]/rus • castell[o] / Durbede • [h]ic / situs es[t] / an(n)o/ru[m] XXX / [s(it) t(ibi)] t(erra) l(evis)	484.7
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Lancienses Oppidani	20089	Monfortinho (POR17; Au)	Albinus		M	Albino Tangini f(ilio) / Lancie(n)si Oppidano / Amoena Maelonis / ex tes(tamento) f(aciendum) c(uravit)	35.9
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Paesuri	20146	Monfortinho (POR17; Au)	Caturo	50	M	[Ca]turo[ni] / [Me]dami f(ilio) Paesuri / [an]n(orum) L Sulla Arci f(ilius) / ex testamento f(aciendum) c(uravit)	139.5
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Interan-nienses	20172	Monfortinho (POR17; Au)	Vegetus		M	D(is) • M(anibus) • s(acrum) • / Vegeto • Vegetini • f(ilio) • / Interaniensi • Amo/ena • Nigri • libert(a) • ma/rito et sibi • f(aciendum) • c(uravit)	100.6
Lusitania	Idanha-a-Velha,	Lancienses	24874	Monfortinho	Aunia		F	Auniae Arantoni(i) /	35.9

	Portugal (Civitas Igaeditanorum)	Oppidani		(POR17; Au)				Celtiatici f(iliae) · Lanc(iensi) Oppidanae / Cocceia Silonis f(ilia) Avita / Naevia Silonis f(ilia) Clara matri / f(aciendum) c(uraverunt)	
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Interamici?	24876	Monfortinho (POR17; Au)	Camalo		M	Camalo / Talonti / Entara/mico	198.3
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	Tapori	24892	Monfortinho (POR17; Au)	Anius		M	[A?]nius / [C]elti · f(ilius) / [T]aporus / [- - -C]areo / [- - -]S / - - - - - ?	39.8
Tarraco- nensis	Astorga, León, Spain	Lemavi (Castellum Eritaecum)	6714	Rio Turienzo (LE37; Au)	Fabia / Virius	40/7	F/ M	Fabia · E · buri / f(ilia) · Lemava ·  (castello) / Eritaeco a(nnorum) / XL · Virus · / Caessi · f(ilius) · Le/mav(u)s ·  (castello) eo/dem · an(norum) · / VII hic · s(iti) · s(unt) · / Caessius / - - - - -	127.9
Tarraco- nensis	Astorga, León, Spain	Cileni	8460	Rio Turienzo (LE37; Au)	Amia Prisca	50	F	D(is) M(anibus) s(acrum) / [A]mia Prisca / [C]ilena ann(or)um L / h(ic) s(ita) e(st) s(it) t(ibi) t(erra) l(evis) / Alfius Proculus / uxori piissimae	205.7
Tarraco- nensis	Astorga, León, Spain	Supertamarci (Castellum Blanio- brense)	8732	Rio Turienzo (LE37; Au)	Fusca		F	Fusca Co/edi f(ilia) Celti/ca Superta(marica) /  (castello) Blaniobr/ensi Seco/ilia Coedi f(ilia) /	210.2

								soror sua / posuit	
Tarraco- nensis	Astorga, León, Spain	Supertamarci	8734	Rio Turienzo (LE37; Au)	Anon.	40	M	----- / [--- Cel]ti[cu]s / Supertama/r(i)cus an(norum) XL / h(ic) s(itus) e(st) s(it) t(ibi) t(erra) l(evis)	210.2
Tarraco- nensis	Astorga, León, Spain	Brigiaecini	14387	Rio Turienzo (LE37; Au)	Aelia Ver(i)na	20	F	Aelia Ver(i)na / Legirniccorum / Brigiaecina / an(norum) XX h(ic) / s(ita) e(st)	59.4
Tarraco- nensis	Astorga, León, Spain	Supertamarci	14390	Rio Turienzo (LE37; Au)	Clarinus Celticus	6	M	Clarinu/s Clari f(i)lius) Celticus Su/pertama(ricus) ann(or)um VI h(ic) / s(itus) · e(st) s(it) · t(ibi) · t(erra) [l(evis)]	210.2
Tarraco- nensis	Baños de la Encina, Jaén, Spain	Oregeno- mesci /Cantabri	12801	Salas de Galiarda (J10; Cu)	Paternus	20	M	D(is) [M(anibus) s(acrum)] / Paternus / Cant(aber) Orgen/ome(scus) f(rater) f(ecit) / an(norum) XX	581.5
Tarraco- nensis	Cacabelos, León, Spain	Interamici (Castellum Louciocelo)	19243	Toral de los Vados (LE55; Au)	Festus	3	M	Festus · Lov/esi · f(i)lius) · Intera/micus exs /   (castello) Louciocel/o · hic · sepeli/tus · est · an(norum) / · III	93
Tarraco- nensis	Carboneros, Jaén, Spain	Egelestani	11834	Los Palazuelos (J14; Arg; Pb)	Q. Manlius Bassus	50	M	Q(uintus) M[an]lius Q(uinti) f(i)lius) / Bass[u]s Egelesta/nus a[n]n(or)um L[	62.6
Tarraco- nensis	Chaves, Portugal	Interamaci	7728	Trincheiras (POR43; Au)	Reburrus		M	[R]eburrus / Viriatis / Interamicus [	45.7

Tarraco- nensis	Felgar, Portugal	Seurri (Castellum Narelia)	12607	Urros (Au)	Reburrus	62	M	Reburrus / Ari • Seuru/s • I(castello) Nareli/a • an(norum) • LXII	177.5
Tarraco- nensis	Felgueiras, Portugal (C. Bracaraugustan us )	Seurri Transmi- niensis (Castellum Serante)	20028	Urros (Au)	Tridia	20	F	Tridiae M/odesti f(iliae) Se/urr[a]e T/ransm(iniensis) / exs  (castello) Se/rante / an(norum) XX Va/lerius u(xori) f(ecit)	183.3
Tarraco- nensis	Fiães, Portugal	Limici	7787	Trincheiras (POR43; Au)	Camalus		M	Camalus / Mibois(?) Lim[icus  (curia)] Livai(rum) h(ic) s(itus) [e(st)] Iul(ius) [	48
Tarraco- nensis	Santa Colomba de Somoza, León, Spain	Supertamarci (Castellum Lubri)	7455	Rio Turienzo (LE37; Au)	Eburia	26	F	Eburia / Calveni f(ilia) / Celtica / Sup(ertamarica)   (castello) / Lubri an(norum) / XXVI h(ic) s(ita) e(st)	210.2
Tarraco- nensis	Santa Colomba de Somoza, León, Spain	Cileni?	19250	Rio Turienzo (LE37; Au)	Albinus	60?	M	Albin[us] / Albur[i f(ilius)] / Cilinu[s] / ann(orum) • LX[.?] / h(ic) • s(itus) •	205.7
Tarraco- nensis	Santa Comba, Coruña, Spain	Cileni (Castellum Berisamo)	18642	Pozo Limideiro (C9; Au)	Caeleo	60	M	Caeleo Cadro/iolonis f(ilius) Cilen/us   (castello) Berisamo / an(norum) LX et Caesa/rus Caeleonis / f(ilius) an(norum) XV / h(ic) s(iti) s(unt)	62.4

Table 6.3. Migrants of uncertain *origo*

Province	Find Spot	HE Ref	Mine <sup>122</sup>	Name of Migrant <sup>123</sup>	Age	Sex	Text <sup>124</sup>
Baetica	Minas de Riotinto, Huelva, Spain	5352	Rio Tinto (H43; Cu; Arg; Fe)	Anon.	30		-----/[b]rigensis / annorum XXX / h(ic) s(it-) e(st) s(it) t(ibi) t(erra) l(evis)
Baetica	Minas de Riotinto, Huelva, Spain	5355	Rio Tinto (H43; Cu; Arg; Fe)	Anon.			----- / [---]pensis
Baetica	Paymogo, Huelva, Spain	5359	S. Domingos (POR7; Cu; Arg)	Iulia Gratilliana		F	Iul[ia] Gratillia/[na] [---]igen/s[is h(ic) s(ita)] e(st) s(it) t(ibi terra) l(evis)
Lusitania	Idanha-a-Velha, Portugal (Civitas Igaeditanorum)	5622	Monfortinho (POR17; Au)	Anon.	35		----- / [---]nsis / an(norum) • XXXV / h(ic) • s(itus) • est • s(it) • t(ibi) • t(erra) • l(evis) / Paternus / fr(atri) • f(aciendum) • c(uravit) •
Lusitania	Villar del Rey, Badajoz, Spain	20233	Herdade da Tinoca (POR29; Cu)	Accius Aloncus		M	Accius / Bouti • f(ilius) / Aloncus / Instinie(n)sis / hic • situs / est / Taurus • Arci / f(ilius) • Ammicus / statuit • et • / scripsit // Bolos/a Vapi (filia)

<sup>122</sup> Text in parentheses provides the site reference number in Domergue's 1987 catalogue of mines, together with the type of metals produced (Au = gold; Arg = silver; Cu = copper; Fe = iron; Pb = lead).

<sup>123</sup> The name of the migrant does not always relate to the deceased, but sometimes to the commemorator.

<sup>124</sup> The texts of the inscriptions are drawn from the *Hispania Epigraphica Online Database*, adapted where necessary.

Tarraconensis	Lugo, Galicia, Spain	25990	Moncelos (LU1; Au)	Anon.		M	----- / [---] Iria · Flavie[nsis --- / ---] filio · f(aciendum) · c(uravit)
Tarraconensis	Padrón, Galicia, Spain	11959	Cobas de Fornas (C9; Au)	Cambavius	50	M	Cambavius / Corali f(ilius) / SENA For(o)irie(n)s(is) / annorum L / h(ic) s(itus) e(st) / s(it) t(ibi) t(erra) l(evis)