

# The extended metropolis: *Urbs, suburbium* and population

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The relationship between Rome and its surrounding territory has long been a focus of study and debate. This paper aims to add to the discussion in two specific ways: first, it attempts to diminish the pervasive dichotomy between metropolis and hinterland; second, it uses survey data to quantify the population of the Early Imperial *suburbium*.

Ancient historians and archaeologists have increasingly emphasized the interdependence of town and country, stressing the dangers of drawing lines around social and economic phenomena and of polarizing studies between urban and rural.<sup>1</sup> In the specific case of Rome, both *Urbs* and hinterland are particularly well researched, though scholars usually focus on either one or the other; studies which encompass both have had a tendency to view the countryside from the urban perspective, in particular using the model of the 'consumer city'. As a result, there is a risk of adopting different approaches to closely related issues: Rome's *suburbium* was both "città e non città",<sup>2</sup> an ambiguous area, part city and part countryside, which cannot be adequately studied from only an urban or a rural perspective.

This paper explores the nexus of social, political and economic flows with the aim of assessing the interaction and integration of metropolis and *suburbium*. The focus is the Early Imperial period (c.27 B.C.–A.D. 100) though other relevant material is included.<sup>3</sup> It aims to consider the rural population not simply as *rustici* but as a sizeable and integral part of the population of Rome itself. Considering metropolis and *suburbium* as a single unit has important implications for the study not only of rural areas, but also for the city itself, as well as for Roman Italy in general.

## *Urbs and suburbium*

Older studies of Roman urbanism often divided town from country. At Rome itself, the Aurelian Wall has long served as a physical and psychological boundary.<sup>4</sup> But ancient town and country were united politically through the concept of the *civitas*;<sup>5</sup> the walls, customs barriers, *pomeria*, and other urban boundaries were all permeable.<sup>6</sup> Imperial Rome was surrounded by suburbs, making it difficult to identify where the city ended and countryside began (Dion. Hal. 4.13.4). The suburbs appear to have extended for 5 or even 10 km.<sup>7</sup> The sardonic observation that Nero's Golden House was so large that it reached almost to Veii should be understood as much against the background of the city's sprawling nature and the intense competition for space as a sign of Nero's excesses.<sup>8</sup> The suburbs were characterized by *horti*, burial grounds, rubbish dumps, quarries, clay pits, sites of manufacturing, punishment and religion, horticulture and storage;<sup>9</sup>

1 E.g., Rich and Wallace-Hadrill 1991. Geographers of the modern world have also focused on the interface between urban and rural: Tacoli 1998. The present paper borrows its title from a collection edited by Ginsburg *et al.* 1991.

2 Marazzi 2001, 725.

3 The mythical connections between Rome and Latium, propagated in particular during the Early Imperial period, are also relevant: Cornell 1995.

4 This division seems to reflect a conceptual divide: scholars such as Ashby and Lugli published extensively on both *Urbs* and *suburbium* but never in an integrated fashion. Lanciani 1898 is an exception.

5 Jones 1964, 712.

6 On the *pomerium*, Beard *et al.* 1998, 93–96; Panciera 1999; Spera 1999.

7 Quilici 1974b.

8 Suet., *Nero* 39.

9 For summaries see Morley 1996 and Patterson 2000. For balance between these demands, Purcell 1987, 33.

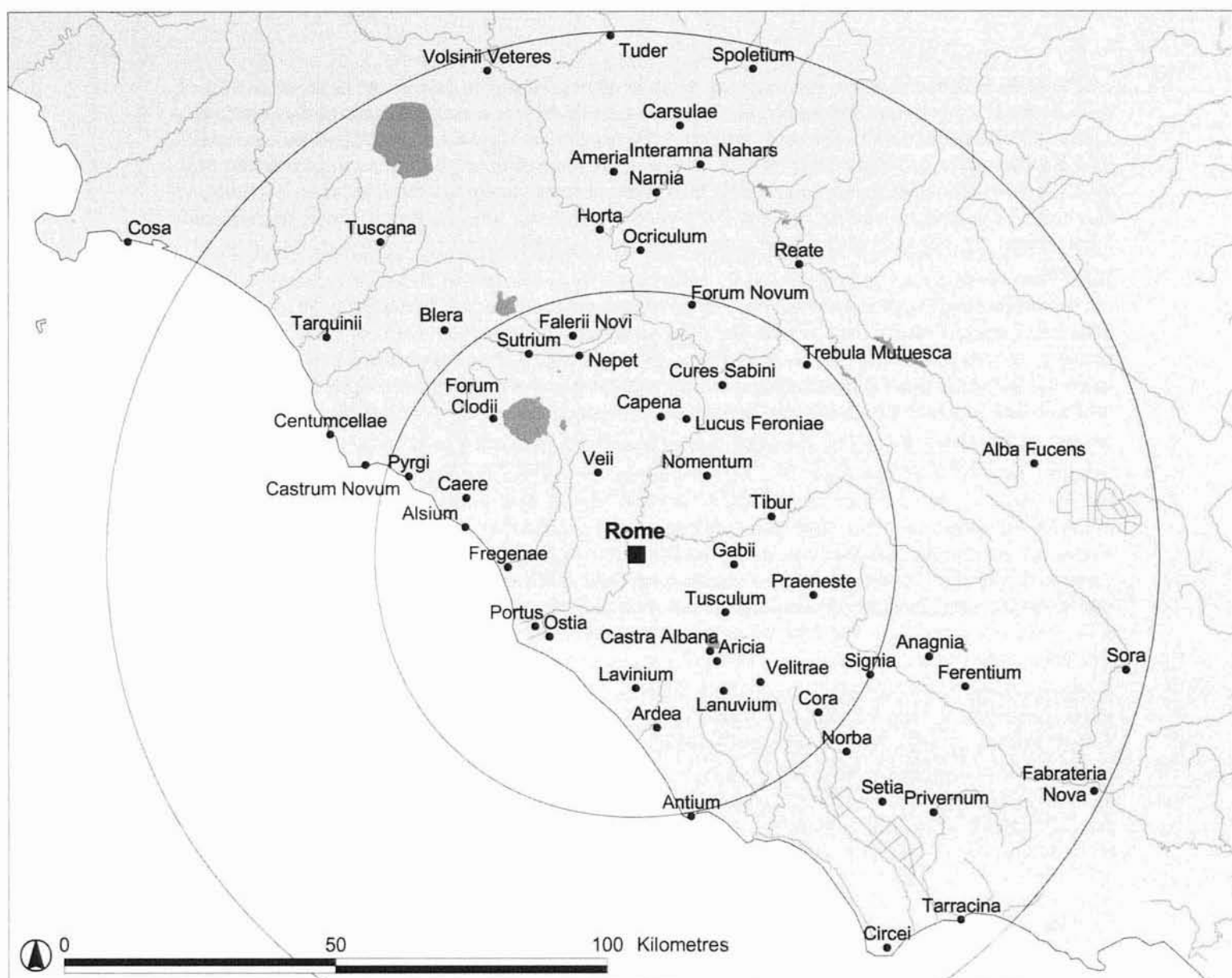


Fig. 1. *Suburbium*: key places mentioned in text; circles at radii of 50 and 100 km.

beyond lay the countryside — or rather an ‘urbanized’ version of the countryside.<sup>10</sup>

The nomenclature for this area, and its physical extent, are the subject of debate. Terms such as ‘hinterland’ impose modern or idealised concepts which may be inappropriate. ‘*Suburbium*’ is historically loaded but it has less modern ‘baggage’. Nonetheless, it has been used with a range of definitions:<sup>11</sup> it is frequently used to refer to the immediate area around the city, a distance of a few kilometres,<sup>12</sup> but Lanciani, Quilici and Marazzi<sup>13</sup> have adopted more expansive definitions, reaching as far as Cosa to the north or the Bay of Naples in the south. In this paper I use it to refer to the area extending at least 50 km from Rome, an area characterized by distinctive patterns of settlement and material culture.<sup>14</sup>

10 Morley 1996, 92; Quilici and Quilici Gigli 2001.

11 Agusta-Boularot 1998, 49-50; Champlin 1982; La Regina 2001, 1-2; Volpe 2000.

12 The *LTUR-Suburbium* (La Regina 2001-) covers sites between the Aurelian Wall and the 9th mile.

13 Lanciani 1898, 266; Marazzi 2001, 722-24; Quilici 1974a, 48, n.8.

14 Witcher forthcoming.

Links with Rome were so intense that it can be argued that the area formed an extension of the city itself. This 'extended metropolis' of city and region increasingly functioned as an inseparable whole. In terms of economy, demography, social and political organization, consumption, patronage and competition, city and *suburbium* formed a single unit both physically and symbolically. The sole exception to this unity was administration, which repeatedly divided the area;<sup>15</sup> the first milestone beyond the *pomerium* was the limit of much constitutional and legal activity.<sup>16</sup> Yet everyday life ensured that the administrative boundaries were constantly crossed.

Historical studies of the *suburbium* have focused on the élite. E. Champlin argued that *suburbanitas* was an élitist construction; it offered *salubritas*, *otium*, *amoenitas*. It was a place of privacy, retreat and exile, but also *vicinitas* — it was rural, but not too rural.<sup>17</sup> Suburban villas were the focus of ostentatious displays of urban culture in the countryside.<sup>18</sup> In the élite context, it is possible to speak of a 'metropolitanization' in terms of ownership and social aspects.<sup>19</sup>

But it would be wrong to associate the *suburbium* only with the literary imagination and leisured recreation of the élite. The *suburbium* also provided ideological and physical escape for the *plebs*. It is not clear if Juvenal's pastoral vision of the *suburbium* was widely perceived,<sup>20</sup> but peasants came into Rome on market days<sup>21</sup> and the urban population travelled out to the *suburbium*. At Fidenae in A.D. 27, the freedman Atilius put on gladiatorial games which were well attended by people from the metropolis due to Tiberius's failure to provide games in Rome itself; the *suburbium* provided Atilius with the opportunity to turn a profit, while the *plebs* made a political statement by transferring their collective allegiance away from both city and emperor.<sup>22</sup>

In the Republican period the *suburbium* provided a space for challenges to official decisions. Generals who were not awarded triumphs could legally celebrate private triumphs outside the city.<sup>23</sup> The *suburbium* was politically emasculated, yet *kudos* might still be gained from competitive exhibitionism beyond the *pomerium*, presumably because people from Rome attended. Religious practices provided another context in which urban and rural populations might interact: urban dwellers celebrated a series of festivals beyond the *pomerium*,<sup>24</sup> including burying and honouring the dead<sup>25</sup> (public execution was another form of popular entertainment

15 The *suburbium* was divided between the Augustan *regiones* (I, IV and VII).

16 During the Republican period, the Senate could meet up to one mile beyond the *pomerium* — e.g., in the Campus Martius (Lintott 1999, 73-74). A road contract of 44 B.C. (CIL I 593.20-55 = ILS 6085) covered the city and one mile beyond (see also the *Tabula Heracleensis*). Caesar's ban on wheeled traffic relates to the same area. The urban prefect held power up to 100 Roman miles from the city (Jones 1964, 481-82).

17 Champlin 1982, 99-100; Dalby 2000, 30-41.

18 E.g., they were used to display works of art: Champlin 1982, 107; Quilici 1974a.

19 Dalby 2000, 30. Suburban land changed hands regularly between the metropolitan élite (e.g., Cicero's villa at Tusculum: Valenti 2003, 59). For the urbanization of Rome's *façade maritime*, see Purcell 1996.

20 E.g., *Sat.* 3.190-202 contrasts the housing conditions of Rome with the towns of Praeneste, Volsinii, Gabii and Tibur.

21 E.g., de Ligt 1993, 112.

22 The temporary structure collapsed; Suet., *Tib.* 40 puts the number killed at 20,000; Tac., *Ann.* 4.63 records the total number of injured or killed as 50,000.

23 E.g., Gaius Cicereius in 172 B.C. (Livy 42.21.6-8). Such triumphs were celebrated on the Alban Mount (first attested in 231 B.C., though rare in the Late Republic). They were legal under consular power and recorded in the *Fasti Triumphales* (Scullard 1981, 217-18).

24 For an overview, see Lega 1995; Scullard 1981, 90 describes the festival of Anna Perenna as "a 'day-out in the country' for an urban population". The Latin Festival involved consuls/magistrates travelling to the Alban Mount (ibid. 111-15) and to Lavinium to honour the *Penates* of Rome (Cornell 1995, 66). Terminalia rituals included the sacrifice of sheep at the 6th mile on the Via Laurentina (Scullard 1981, 79-80). Other festivals outside the city included: the *Fratres Arvales* on the Via Campana (ibid. 30); the *Ambarvalia* (beating the bounds) (ibid. 124-25), and the cult of Diana at Nemi.

25 At the *Parentalia*, relatives visited tombs outside the city (Scullard 1981, 74).



which, because of its polluting aspects, was usually performed *extra urbem*). Similarly, rural populations had cause to travel to urban or peri-urban sanctuaries and temples for festivals. These examples illustrate legal and symbolic divides between *Urbs* and *suburbium*, a distinction marked both by the *pomerium* and by elite ideology; but they also show that these boundaries were crossed by everyday activities, and sometimes deliberately challenged and transgressed.

Epigraphy provides important evidence for the relationship between Rome and *suburbium*. It sheds light on a broad middle-class of merchants, shopkeepers, imperial freedmen<sup>26</sup> and members of the *collegia* of *Augustales*,<sup>27</sup> both the latter groups demonstrating close ties with Rome and the emperor.<sup>28</sup> Epigraphic evidence from Pompeii hints that rural populations could achieve a corporate existence; the area north of that town, outside the Herculaneum Gate, formed a distinct political unit, the *pagus Augustus Felix Suburbanus*, which elected its own *magistri* and made its own group dedications, within the larger framework of the municipality.<sup>29</sup> Within Rome's *suburbium*, J. B. Ward-Perkins suggested that a similar rural grouping might explain the *extramurani* at Veii (CIL XI 3797),<sup>30</sup> and other such corporate rural groupings are a distinct possibility in light of the density of settlement (see below).

Discussion of the relationship between Rome and its immediate territory has been dominated for the last half-century by the topic of agricultural production for the urban market.<sup>31</sup> Rome has become the archetype of the parasitic consumer city. Here, two points may be made. First, there has been a tendency to treat the relationship between Rome and its territory differently from the situation with other cities because of her imperial status and dependence on imports. P. Horden and N. Purcell have questioned such a distinction:<sup>32</sup> Rome was simply an extreme version of the Mediterranean norm of surplus redistribution. For farm and metropolis alike, discrete hinterlands did not exist; instead, 'dispersed hinterlands' provided a more robust response to the Mediterranean environment, stimulating intense inter-regional connectivity. However, in other ways, the *suburbium* was unique. Access to the agricultural surplus of the Mediterranean reduced pressures on the *suburbium* to produce grain, but it experienced other pressures: e.g., the emperors' monopolization of Rome for status display forced competition out of the city into the countryside.<sup>33</sup> Whilst the Republican *suburbium*, through its manpower and agricultural resources, formed the basis of Rome's original military expansion, the Early Imperial *suburbium* lived beyond its means on the concentrated surplus of the wider empire; it was no longer the basis of power but a canvas upon which Rome expressed its imperial success.

Second, the concept of the consumer city is based on the dichotomy of town and country; it ignores both urban production and rural consumption. But if the area around Rome is treated as an integral part of the city itself, then the idea of a consumer city collapses: it becomes a regional system.<sup>34</sup> Far from seeing Rome as parasitic on the *suburbium*, the latter shared a

26 E.g., ILS 154 from Forum Clodii; see also Quilici 1974a.

27 For Etruria see Papi 2000; for Latium see Cooley 2000.

28 Potter and King 1997, 34 and 422. For other groups, e.g. *apparitores*, see Purcell 1983.

29 CIL X 814, X 853, X 924, X 1042, X 1074. For discussion, see Laurence 1994.

30 Ward-Perkins 1961, 59.

31 Morley 1996.

32 Horden and Purcell 2000.

33 Potter and King 1997, 421 and Bodel 1997 for villa-builders from the *nouveaux riches* in the Augustan *suburbium*. Competition between emperor and elite was exacerbated by increasing imperial ownership of land in the *suburbium* (Quilici 1974b, 421).

34 Whittaker (1994, 11) argues the elite were indiscriminate about the location of 'industry' in town or country; in this regard, the distinction between rural or urban production is irrelevant. In development studies, the blurring of productive capacity is labelled 'sectoral interaction'. Horticulture within the walls of Pompeii is an example; the evidence from Rome is less clear, though tomb plots could be made to pay through cultivation (Purcell 1987, 35). Manufacture of tile and pottery was regarded as agricultural rather than industrial; it is attested in both town and country.

metropolitan style of consumption.<sup>35</sup> Nor were large villas and estates the only consumers; in the range of imported material culture on even very small sites, field survey illustrates the broader integration of urban and rural supply and demand.

Rural producer *versus* urban consumer is also reflected in the idea of an urban *plebs* divorced from its rural origins. But as the mobility of populations becomes clearer, so the division between town and country becomes more difficult to sustain.<sup>36</sup> There is no reference to urban populations commuting to the countryside, yet their potential contribution to rural labour is frequently cited.<sup>37</sup> Such seasonal activities may have been important for supplementing diet or income, and they hint at more diverse survival strategies than market and dole. Historical studies have focused on how the wealthy built social and economic ties between city and *suburbium*, while the possibility of similar networks amongst the lower classes has been ignored for want of evidence. Yet the *plebs* may have retained stronger links with the countryside through family or employment than the Marxist perspective suggests.<sup>38</sup> In brief, there is a need to rethink the *suburbium* and its relationship with Rome. The following section develops demographic models which advance the notion of "a great dispersed city of which Rome is only the nucleus".<sup>39</sup>

### Archaeology and demography

Field survey around Rome indicates a densely occupied antique landscape. Despite erosion and urban sprawl, fieldwork continues to locate ever more sites. Surprisingly, this settlement has rarely been considered in terms of demography.<sup>40</sup> Yet population estimates would significantly enhance our understanding of the relationship between Rome and neighbouring communities.<sup>41</sup> Here I make a preliminary attempt to estimate the Early Imperial population of the *suburbium*. No attempt is made here to model the changing population of the *suburbium*. That would introduce a number of methodological complications which cannot be addressed here.<sup>42</sup>

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- 35 For example, aqueducts were tapped along their courses. Of legal usage, c.29% was siphoned off outside the city (Coarelli 1986, 43-44); the majority of illegal siphoning occurred outside the city (see also Wilson 1999, 315-17). Bannon 2001 discusses servitudes (legal concessions) to access water from neighbouring land and the failure of this system in the Late Republican/Early Imperial period due to changing ownership, competition, and a diminished sense of community.
- 36 Scheidel 2004. Development studies of the modern world identify "multi-spatial families" (i.e., divided between town and country), with some individuals moving between urban and rural locations and occupations. Straddling the urban/rural divide in many cases is a survival strategy: Tacoli 1998. See Badian 1982, 165-66 on the diversity of the average Roman family.
- 37 Garnsey 1979, 15; Quilici 1974b; for the possible use of skilled labour beyond the city, see Thornton 1986 and Suet., *Vesp.* 1. In 1871, almost 20% of the working population was employed in agriculture.
- 38 There were many 'agricultural' festivals at Rome. Some were agricultural in origin and became urbanized: e.g., the Compitalia (Scullard 1981, 58-60). Others were introduced but failed to develop: e.g., Fauno in Insula (ibid. 72). North (1994, 141) discusses whether the sources relate to Archaic practice or are the product of literary constructions of morality, the past and rusticity. In the *suburbium*, there was a decline in religious activity relating to agricultural deities during the Early Imperial period, with activity being restricted to the major sanctuary sites (e.g., Tibur: Lega 1995, 121-25).
- 39 Purcell 1987, 36. A *città-territorio*, Quilici 1974b; see also Patterson 2004; Potter 1991, 202.
- 40 Discussing his survey, Quilici (1974b) remarked that, if the area of Collatia were representative, the population of the wider *suburbium* could be of similar size to Rome's, but the implications of this striking comment were not picked up.
- 41 Millar 1998, 31; Brunt 1971, 3; Lanciani (1898, 267) was also aware of the need to repopulate the *suburbium*: "... let us animate the brilliant scene with groups of countrymen ...". Historical sources have been used to estimate the population of Early and Mid-Republican Rome and its territory (Coarelli 1988; Ward 1990), but estimates for the Imperial period have concentrated on the city alone (e.g., Hopkins 1978); I am not aware of any estimates specifically for the Early Imperial *suburbium*.
- 42 This paper deals with 'stock' rather than 'flow' data (Lo Cascio 1994). Perhaps the biggest problem for demographic reconstruction is change over time. Problems include the relationship between changing site numbers and population. A direct relationship is unclear because of the variability in archaeological

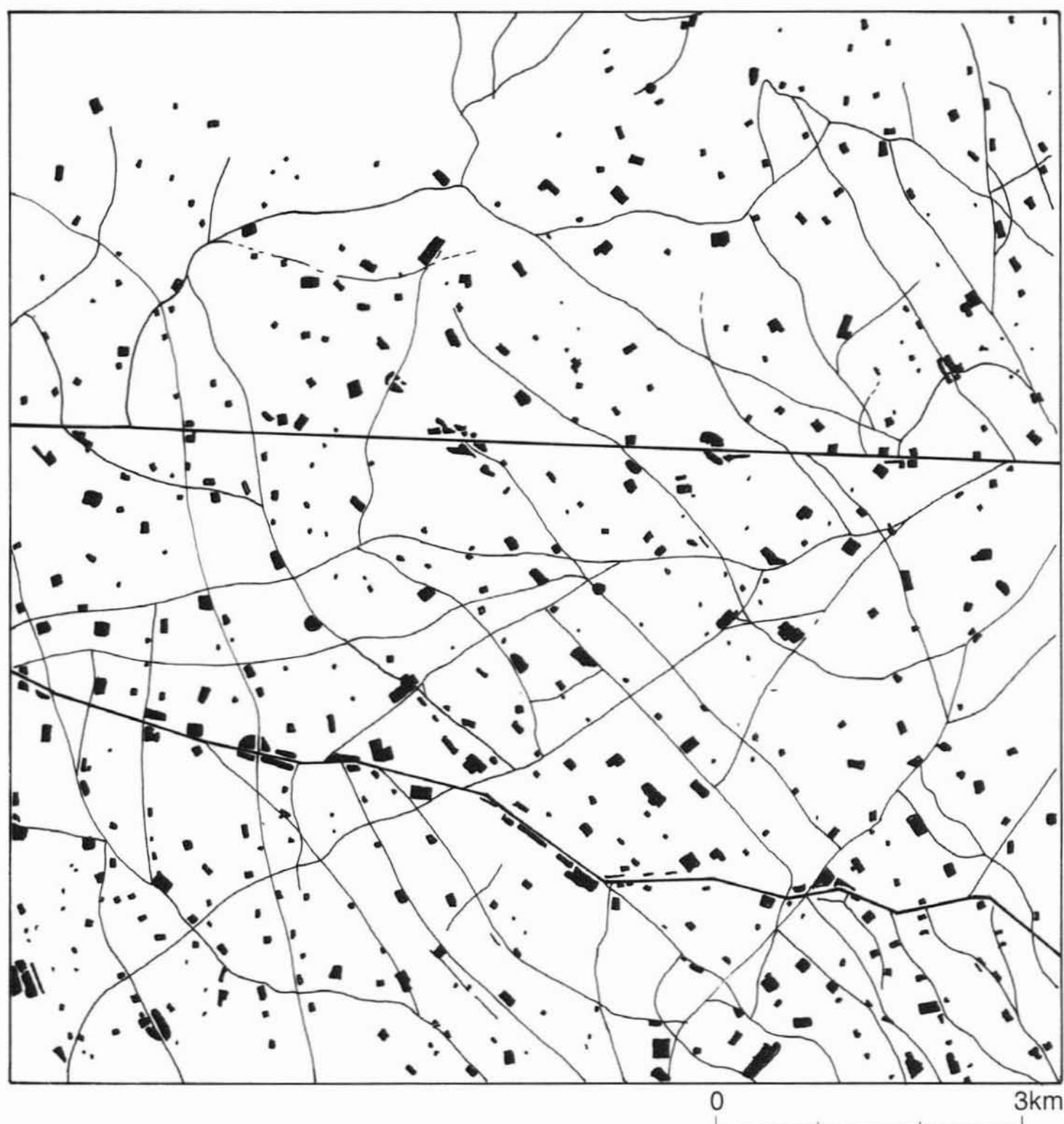


Fig. 2a. Settlement sites in the Early Imperial period: Collatia (after Quilici 1974a, fig. 18), the size and location of archaeological features, predominantly surface scatters comprising a spectrum of settlement types including farms, villas, villages and road-stations (funerary monuments and aqueducts have been excluded for clarity).

The intent is to identify a population range for comparison with the figures suggested for Rome and Italy.

There has been much debate about the use of survey for modelling ancient demography.<sup>43</sup>

visibility (Osborne 2004, 164) and the assumption of constant site populations. However, it is clear that there was a substantial increase in suburban population during the Late Republican/Early Imperial period (Witcher forthcoming).

<sup>43</sup> Concerns include the reliability of survey data and cross-cultural population estimates (Sbonias 1999).

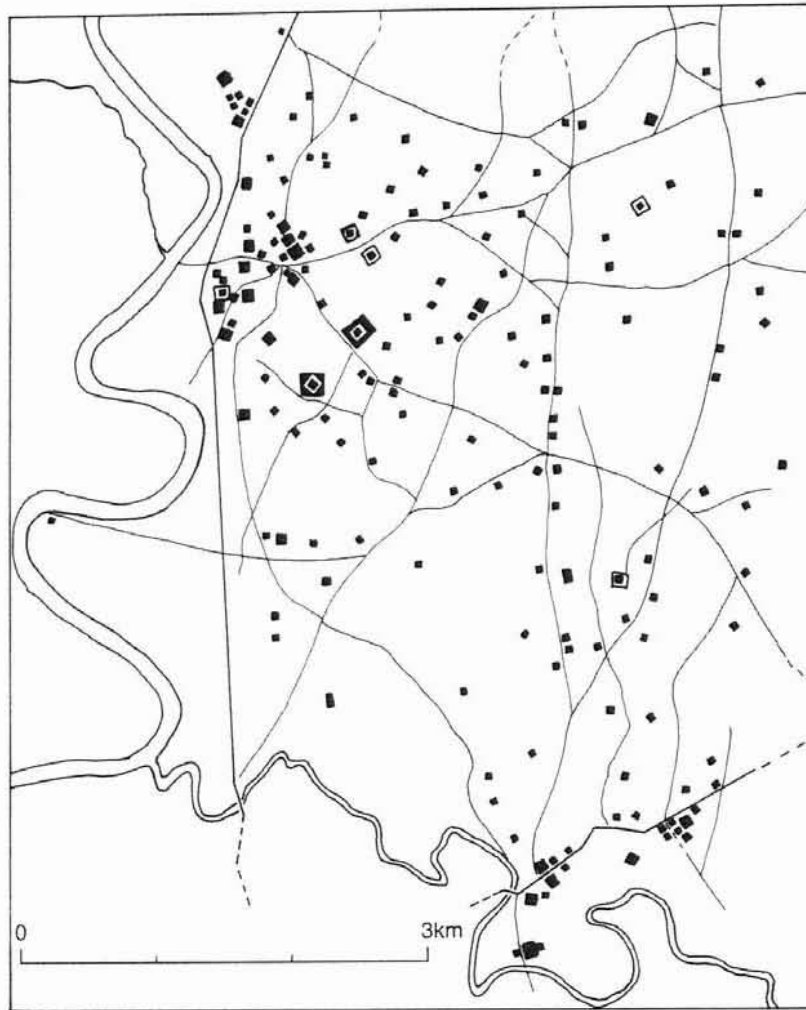


Fig. 2b. Settlement sites in the Early Imperial period: Fidenae (after Quilici and Quilici Gigli 1986, fig. 185), the location of archaeological features, predominantly surface scatters comprising a spectrum of settlement types including farms and villas (funerary monuments have been excluded for the sake of clarity).

The following figures are inevitably speculative, but aim to initiate discussion about the feasibility of survey's long-claimed promise of reconstructing past populations. Debate also continues on the size of Rome's population; the current consensus is c.0.75 million inhabitants.<sup>44</sup> Quantification of the suburban population has attracted less attention. I will take the *suburbium* to

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It seems unlikely that many nucleated centres have been missed; however, most surveys recover only a small percentage of rural sites due to erosion and stochastic processes affecting visibility. Recovery of Republican sites in the *ager Cosanus* is estimated at 33% (Cambi 2002, 140). Further, there may have been an 'under-class' of sites which did not share the material culture of larger or richer sites and are almost invisible archaeologically. Thus, 3 sites per km<sup>2</sup> may be a significant under-estimate. The relatively short span of the Early Imperial period reduces the potential for the creation of apparently dense settlement patterns through frequent site relocation; most sites also have earlier and/or later occupation. On the issue of population figures, Osborne (2004, 168-69) reviews assumptions of demographic modelling using Greek data. He notes consensus on the number of people assigned to types of site, but significant variation in their size — e.g., 'farms' of highly variable size are all assigned families of 5. Most surveys around Rome lack the data with which to assess this problem systematically; for the current exercise, the main point to note is that these problems are more likely to lead to under- rather than over-estimation of population.

<sup>44</sup> The studies, which draw on historical, proxy and comparative data, cannot be reviewed here. A population of 1,000,000 equates with c.780 people per hectare. However, Storey (1997, 973) has cited the lack of historical precedent for such a density and uses house densities from Pompeii and Ostia to argue for an urban population of c.450,000. Morley (1996, 33-39) argues for 850,000 to 1,000,000, spread up to 5 km from the centre of the city. Frequently, however, the spatial distribution of the population is not addressed or is explicitly ignored on the supposition that the suburbs add little to the densities postulated for the urban core.



extend 50 km from the city;<sup>45</sup> with appropriate adjustments, this constitutes an area of about 5415 km<sup>2</sup>.<sup>46</sup> The distribution and density of settlement was, of course, uneven: mountainous and forested areas (Monti Lucretili, Monti Prenestini, Colli Albani, Monti Lepini, Monti della Tolfa) had lower density; by contrast, areas closer to Rome were very densely settled.

Table 1 gives the results of several surveys for the Early Imperial period. These surveys point to some diversity of settlement around the Early Imperial city and cannot claim to be fully representative of every district,<sup>47</sup> but they do provide a consistent overall picture.

TABLE 1  
DENSITY OF RURAL SETTLEMENT IN THE *SUBURBIUM* (all figures approximate)<sup>48</sup>

Location	Survey	Survey area km <sup>2</sup>	Total Early Imperial sites	Early Imperial settlement type & density per km <sup>2</sup>	Reference
Coast	Caere (Cerveteri)	90	187	2 sites	Enei 2001
North	Cures Sabini (Corese)	3	13	4 sites (2 villas plus 2 farms)	Di Giuseppe <i>et al.</i> 2002
	Fidenae (Fidene)	31.5	90	3	Quilici & Quilici Gigli 1986
East	Tibur (Tivoli)	6.5	85	5+	Mari 1991
	Tusculum (Frascati)	96	300	3+	Valenti 2003
South	Collatia	96	350	3-5 (2-3 villas plus 1-2 farms)	Quilici 1974a

Figure 2 illustrates Early Imperial settlement in two of these areas. In the following calculations, an average figure of 3 sites (two farms and one villa) per square kilometre is used.

Parameters for the populations of rural sites are based on comparative evidence and follow those adopted by various other Italian and Greek surveys.<sup>49</sup> Urban populations present greater difficulty; studies in Greece and the Near East have calculated figures using urban area and a standard population density.<sup>50</sup> However, size data are not available for the majority of surveys around Rome, so a standard figure has been used for all site types.

The parameters are laid out in Table 2: they comprise an estimate of the number of settlements by type, a population range per type of site, minimum and maximum population totals by type of site; and 'informed estimates' for numbers of people by type of site and calculated overall population. The ranges reflect a variety of debates about settlement demography. The 'informed estimates' attempt to narrow this range by accepting or rejecting some of the highest/lowest estimates for individual types of site.<sup>51</sup>

An average rural density of two farms and one villa per km<sup>2</sup> over the 50-km radius comes to 10,830 farms and 5,415 villas, and between 135,375 and 433,200 persons. Villages contribute only

45 The *suburbium* had no sharp boundaries. Agusta-Boularot (1998, 50) uses 60 km (the distance which could be covered on horseback in a day). See n.14 above.

46 Allowance is made for sea (1688 km<sup>2</sup>), lakes (c.66 km<sup>2</sup>), coastal change (especially at the mouth of the Tiber) (c.50 km<sup>2</sup>), and for Rome itself (12.7 km<sup>2</sup>). The extent of forest, rough mountain and marsh is less easy to take into account; here, all land higher than 650 m is excluded (524 km<sup>2</sup>), along with 100 km<sup>2</sup> for marshes.

47 There may be a bias in fieldwork coverage towards areas with higher settlement density; areas such as (former) coastal marsh and wooded/mountainous areas are under-represented.

48 See Table 3 for definitions of types of site.

49 Population estimates using Italian field survey include Cambi 1999, who refers to 'households' without specifying family size, and Fentress 2002. For Greece, see Osborne 2004.

50 For Greece, village/town population density is commonly assumed to be 100-250 people per hectare (Osborne 2004, 168). Bagnall and Frier (1986, 255) suggest c.250 people per hectare for small towns in Egypt; Wilkinson (1999, 46) reviews urban densities suggested for the Near East that include significantly higher estimates.

51 Population estimates for other provinces: Britain (c.3.7 million: Millett 1990, 181-86); Egypt (c.4-5 million: Bagnall and Frier 1986, 53-56).



TABLE 2  
DEMOGRAPHIC MODEL OF SUBURBIUM (less than 50 km from Rome)

	Farm <sup>52</sup>	Villa <sup>53</sup>	Village <sup>54</sup>	Road station	Small town <sup>55</sup>	Town <sup>56</sup>	Ostia <sup>57</sup>	Total
No. of sites	10830	5415	50	22	20	7	1	18100
Min. individuals per site	5	15	50	200	500	3000	20000	-
Min. population total	54150	81225	2500	4400	10000	21000	20000	193275
Max. individuals per site	15	50	200	500	3000	10000	60000	-
Max. population total	162450	270750	10000	11000	60000	70000	60000	644200
Informed estimate — individuals per site	8	25	100	200	1500	5000	30000	-
Informed estimate — population total	86640	135375	5000	4400	30000	35000	60000	356415

2,500-10,000 persons to the total, while between 55,400 and 201,000 persons lived in urban or other nucleated centres. The total minimum population is therefore 193,275, or 35.7 per km<sup>2</sup>; the

- 52 The definition of site categories varies by survey. Here, farm is taken to denote small (<1000 m<sup>2</sup>) sites with a limited range of material culture (e.g., usually excluding glass, marble and large quantities of varied finewares). Conventionally, farms have been assigned nucleated families of 5 persons (e.g., Osborne 2004, 168; Rosenstein 2004), though there is little support for this assumption: such small families cannot have been biologically viable in the wider Roman demographic structure with its high infant mortality; conscription, etc. Millett (1990, 185) assigns at least 20 people to the smaller sites of Roman Britain, but that number may be too high for the more densely occupied landscape of the *suburbium*. At Cerveteri, Enei (2001, 72) assigns 10 people to each farm. In the *ager Cosanus*, Perkins (1999, 167) assigns 10 people/2 families to House2 sites (<1000 m<sup>2</sup>), but he does not comment on the potential social significance — two nucleated families, one extended family, or a nucleated family plus slaves? Nuclear families were more characteristic of the upper classes, whereas lower-class families tended to live in extended or multiple family groups (Frier 1999, 92-93). Egyptian census data suggests rural populations lived in significantly larger family groups than did metropolitan populations (Bagnall and Frier 1986, 66-67). Here, an extended family of 8 is used.
- 53 In contrast with farms, villas demonstrate greater size (usually >1000 m<sup>2</sup>) and greater complexity of material culture; structural remains are relatively common. At Settefinestre, Carandini (1988, 154 and 204) argues for c.52 slaves working 500 *iugera* (125 ha) during the Late Republican period, rising to c.100 during the 2nd c. A.D. Still, in the *ager Cosanus*, Perkins (1999, 167) populates coastal villas with 35 people or 7 families. However, only a small percentage of villas in the *suburbium* achieved the size or complexity of Settefinestre.
- 54 Perkins (1999, 166) suggests 50 people or 10 families per village.
- 55 Pyrgi, Fregene, Lavinium, Forum Clodii, Sutrium, Nepes, Capena, Forum Novum, Cures Sabini, Trebula Mutensca, Nomentum, Gabii, Ardea, Lanuvium, Aricia, Cora, Velitrae, Signia, Antium and Alsium. For the latter, Enei (2001, 72) estimates just 500 people. Forum Novum was extremely small, c.4 ha (Gaffney *et al.* 2001). The division between small town and town is arbitrary; there may be arguments for promoting small towns such as Nepes, and for relegating towns such as Veii or Tusculum. As discussed below, such adjustments do not significantly affect the overall figures.
- 56 Praeneste, Tibur, Caere, Lucus Feroniae, Veii, Falerii Novi, and Tusculum; the first two were by far the largest. The size of some towns (e.g., Falerii Novi, c.30 ha; Praeneste, c.36 ha; Veii, c.20 ha) has been established and variable populations estimated (Falerii Novi at 5000 [Blanton 2004, Appendix 2]; Veii at 2000-3000 [Lloyd 1991, 234]). However, not all towns are so well understood; thus a standard population figure is used for this category. In general, towns were small compared to the larger centres found in Umbria and the north; the figure of 6000 used here is below Brunt's (1971, 126) Italian average of 7800. At 250 people per hectare, Falerii Novi would have 7500 and Veii some 5000. Purcell (1998) has referred to some of these towns as "ambiguous città", with reference to epigraphy which stresses their ancient connections with Rome via traditional themes, institutions, and dedications to the emperor; see also Cooley 2000.
- 57 Ostia (c.69 ha, plus suburbs) presents an anomaly. Meiggs (1973, 532-34) summarized estimates for the imperial port, which ranged from 20,000 (Nibby) to Meiggs's own figure of 50,000-60,000. Packer (1967, 70) estimated 27,000; see also Duncan-Jones 1974, 276.

maximum population equals 644,200, or 119 per km<sup>2</sup>. The 'informed estimate' is rather less than the mean of these two figures at 356,415, or 60 per km<sup>2</sup>,<sup>58</sup> with c.32% of the population at nucleated centres and 68% in the countryside.<sup>59</sup>

Whilst the results of each individual survey or the population parameters are open to dispute, some general observations can be made. First, the urban to rural ratio indicates a large rural population broadly in line with widely cited figures of 70-80%. Secondly, the estimates for urban population show that Ostia has a disproportionate influence on the urban total.<sup>60</sup> Thirdly, population estimates at the lower end of the settlement hierarchy have a greater impact on overall population figures.<sup>61</sup>

Writing long before the density of rural settlement around Rome had become clear, J. Beloch suggested that the population of the *suburbium*, excluding Ostia, was 50,000, the equivalent of 10 persons per km<sup>2</sup>. With his estimate of 500,000 at Rome, this gave a ratio of 10 : 1.<sup>62</sup> The figures presented above lower that ratio to c.2 : 1.

In brief, a population range of 193,275 to 644,200 is suggested for the *suburbium* of the Imperial city. An 'informed estimate' is 356,415, or 60 persons per km<sup>2</sup>. In other words, within 50 km of the *Urbs* there was over a third of a million people — almost half of Rome's own population again.

The implications of this major addition to the *Urbs'* population will be considered in the following section. However, it is important to stress that, although the 50-km radius employed has a certain validity, it is not definitive. It will be useful therefore to look further afield. If the radius is extended to an arbitrary 100 km (fig. 1), the additional area, with appropriate deductions, is c.9051 km<sup>2</sup>.<sup>63</sup> Within this area there are an additional 13 large towns.<sup>64</sup> Rural settlement density demonstrates greater variety, though a lower density overall; thinly occupied areas include the area east of Rome (e.g., Monti Simbruini and Monti della Laga); densely occupied areas included the middle Tiber valley, the Rieti basin, parts of the Pontino plain, and the Liri/Sacco valley.

TABLE 3

DENSITY OF RURAL SETTLEMENT IN THE *SUBURBIUM* (distance of 50-100 km; all figures approximate)

Location	Survey	Survey area	Total Early Imperial sites	Early Imperial settlement type & density per km <sup>2</sup>	Reference
Coast	Tarquini/Vulci	55	62	1.1	Corsi 1998
North	Rieti (Reate)	22	47	2.1	Coccia & Mattingly 1992; 1995
	Tuscania (Tuscania)	96	205	2.1	Rasmussen 1991
South	Liri valley	125	91	0.7	Hayes & Martini 1994

Assuming an average rural distribution of 1.5 farms per km<sup>2</sup>, plus 0.2 villas per km<sup>2</sup>, and using the population ranges from Table 2, produces minimum and maximum rural populations of

58 This is double the density calculated for S Etruria by Blanton (2004, Appendix 1) at 31 people per km<sup>2</sup>; the rural/urban distribution is also completely reversed.

59 In the *ager Veientanus*, Lloyd 1991, 234 suggested the rural population may have equalled or exceeded the urban population; his conservative estimate is 4905 people dispersed in the *ager* and 2000-3000 at Veii itself.

60 If Ostia is excluded, the balance of urban to rural shifts to c.25% urban and c.75% rural.

61 This is the opposite of Greece, where the majority lived in cities and where rural settlement had limited influence on population (Osborne 2004, 170).

62 The *suburbium* of Beloch (1886, 402-3) extends to 40 km from Rome. He noted the *suburbium* was as depopulated in antiquity as in his own day (cf. Lanciani 1898, 268).

63 Chiefly, the subtraction of 4500 km<sup>2</sup> of land over 750 m elevation.

64 Tarquinii, Volsinii Novi, Oriculum, Ameria, Tudur, Carsulae, Interamna Nahars, Narnia, Spolegium, Alba Fucens, Fabrateria Nova, Tarracina, and later Centumcellae.

95,036 and 294,158, with an 'informed estimate' of 153,867. Urban population is more difficult to assess. Some towns were large in comparison to those lying closer to Rome,<sup>65</sup> though the overall density of towns and road-stations was lower. By contrast, village settlement appears more significant. An 'informed estimate' would be 10,000 in each of the 13 large towns, totalling 130,000 people, with a further 100,000 in small towns, road-stations and villages.<sup>66</sup> Adding the rural population, this totals 383,867, a density of 42 persons per km<sup>2</sup>.<sup>67</sup> It is thus possible that within 100 km of Rome there was the equivalent of the city's own population again.

It may be useful to consider how these estimates fit into the wider demography of Early Imperial Italy. The consensus figure for the early 1st c. A.D. has long been c.6-7 million, including 1 million at Rome and 2 million slaves, a density of 24-26 persons per km<sup>2</sup>.<sup>68</sup> However, E. Lo Cascio has revived the figure of c.14 million suggested by T. Frank, a density of 56 persons per km<sup>2</sup>.<sup>69</sup> If the minimum and maximum densities presented here are extrapolated across the whole peninsula (covering c.250,000 km<sup>2</sup>), the figures would range from 10.25 to 28 million, with a further 0.75 million for Rome, thereby favouring Lo Cascio's figure. However, the 'informed estimate' of 60 persons per km<sup>2</sup> is high compared to most other regions.<sup>70</sup> Large parts of Etruria, Samnium and S Italy demonstrate much lower settlement and, presumably, population densities.<sup>71</sup> Further, large parts of the Appennines are uninhabitable, or at least cannot be intensively farmed.<sup>72</sup> If we allow for 50% of peninsular Italy being under cultivation, Lo Cascio's localized density must increase from 56 to 112 persons per km<sup>2</sup>. If the estimated population density of the *suburbium* suggested here is only 60 per km<sup>2</sup> (and this is one of the most densely occupied areas of the peninsula), Lo Cascio's estimate of 14 million appears much too high.

On the other side of the debate, Beloch argued for c.6 million people, including 2 million slaves and 500,000 at Rome. Excluding Rome, this gives an average of 24 persons per km<sup>2</sup>.<sup>73</sup> Adjusted for 50% cultivable land, Beloch's localized density for the occupied districts of central Italy totals c.48 persons (including slaves) per km<sup>2</sup>. There is no reason why the debate should polarize around the extremes of 7 million or 14 million; however, if the figures presented above are roughly correct, the population of Roman Italy should be considered to have been much closer to Beloch's estimates than to Lo Cascio's.

The above figures are merely a preliminary attempt to realize some of the claims for the con-

<sup>65</sup> E.g., Spoleto, 23,000 (Duncan-Jones 1974).

<sup>66</sup> Including smaller towns such as Reate, Amiternum, Tuscania, etc.

<sup>67</sup> That is, an urban to rural ratio of 50 : 50, which is significantly more nucleated than the area closest to Rome.

<sup>68</sup> Beloch 1886; Brunt 1971. For recent estimates, see Morley 1996, 46-50. Overall, the figure has varied from 250,000 (Lot) to 16,000,000 (Lugli).

<sup>69</sup> Lo Cascio 1994 and 1999; Frank 1924, 340-41.

<sup>70</sup> The best comparison is Campania. For the modern province of Caserta, Arthur (cited in Lloyd 1991) suggests the number of rural sites could total c.16,000, a density of more than 6 sites per km<sup>2</sup>. Assuming all sites to be farms in contemporary occupation, this gives a population range of 80,000-240,000 (29-87 persons per km<sup>2</sup>). Moreover, some of these sites were villas. Urban population (including Capua) also needs to be taken into account, so overall density may have exceeded 100 people per km<sup>2</sup>. Jongman (1988, 112) estimated the population of Pompeii and its territory at 180 people per km<sup>2</sup> — 8,000-12,000 urban and 24,000-28,000 rural.

<sup>71</sup> One issue is the visibility of small sites in areas away from the *suburbium* (Witcher forthcoming). Early Imperial site density at Venosa is 1 site per km<sup>2</sup>, at Oria, 0.3; for Italy south of Rome, see Mattingly and Witcher 2004; for Etruria, see Witcher forthcoming.

<sup>72</sup> Beloch assumed 40% was cultivated, but under-estimated the extent of Roman occupation (revealed by subsequent survey projects). Settlement around Rome did not return to Early Imperial levels until the mid-20th c. (Potter 1979).

<sup>73</sup> Beloch 1886, 507; these figures were broadly followed by Brunt 1971 and Hopkins 1978. For the Late Republican period, Beloch (1886, 426) calculated Central Italy including Latium as having 1.75 million free people in 60,000 km<sup>2</sup> (29 per sq. km), Etruria at 200,000 free people over 13,000 km<sup>2</sup> (15 per km<sup>2</sup>), and S Italy at 500,000-600,000 over 45,000 km<sup>2</sup> (11-13 per km<sup>2</sup>).



tribution of field survey, but despite the problems of data and methodology the argument stands that the density of population in the *suburbium* was exceptionally high and that it formed a considerable adjunct to the urban populace of the city itself, perhaps 50% again within a radius of 50 km, and 100% again within a radius of 100 km. To give some sense of scale to these figures, fig. 3 shows the density of population around Rome in the year 2001. The population densities of some *comuni* well-known to archaeologists include Blera (35 persons per km<sup>2</sup>), Tuscania (37), Sutri (83), Norma (123), Fara in Sabina (197), Cerveteri (199), Capena (198), Sezze (216), Mentana (676), Palestrina (368), and Tivoli (720). The significant variation within modern Lazio points to the need to develop localized demographic models for the Early Imperial *suburbium*.

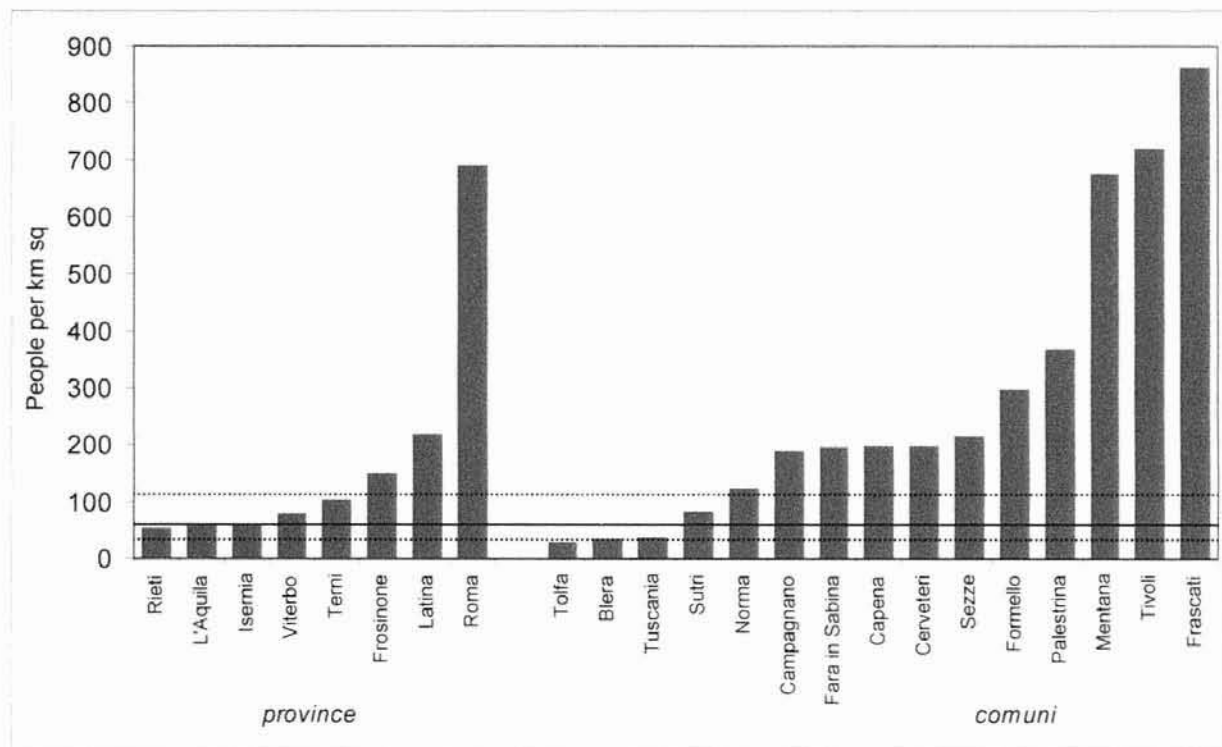


Fig. 3. Density of population in modern *province* and selected *comuni* using the 2001 census (based on data from the Istituto Nazionale di Statistica) in relation to Early Imperial population estimates (up to 50 km from Rome). The solid black line indicates the informed Early Imperial estimate; dotted lines indicate maximum and minimum Early Imperial estimates.

Figure 4 illustrates population growth in Lazio from 1854/61 to 2001. The 1871 total is comparable to the Early Imperial figures given here, followed by a four-fold population rise over the next 130 years. The parallel growth of urban and suburban populations mirrors the situation in the Roman period, where the population of both *Urbs* and *suburbium* grew in tandem, rather than one at the expense of the other. Unlike modern cities, the (sub-)urbanization of the ancient countryside cannot be attributed to urban sprawl: the density of rural population was the product of natural growth and/or immigration from outside the region.<sup>74</sup> Given the apparent fall in population in some Italian regions during the Early Imperial period, there may have

<sup>74</sup> Studies of the Imperial *suburbium* note a marked shift in the urban/rural relations. Small towns such as Fidenae declined, whilst rural settlement prospered. It is suggested that Rome undermined the market functions of these towns (Marazzi 2001, 72; Morley 1996, 178-79; Quilici and Quilici Gigli 1986, 405). However, this was not an absolute shift from urban to rural (i.e., the dispersal of nucleated population) so much as a relative shift of importance due to a rising rural population. There is epigraphic evidence for immigration to the area, but it is restricted to certain groups. Noy (2000, 53-54) distinguishes between the different forms of migration: local, circular, chain and career; see also Patterson 1987. Whether migrants went directly to Rome or worked their way from one centre to another through the *suburbium* also has implications for the stability or turnover of population.

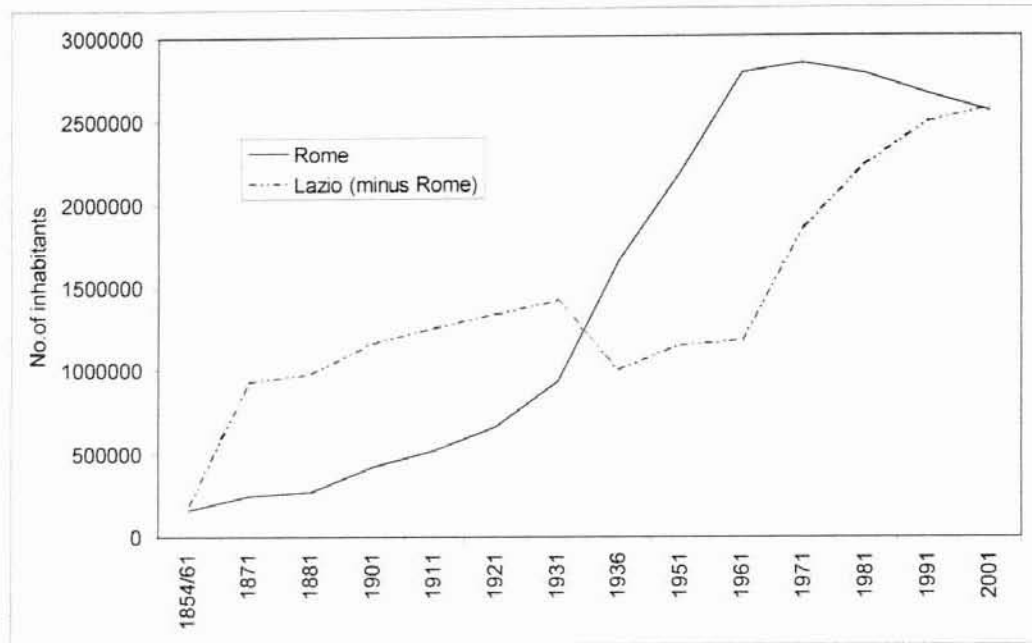


Fig. 4. Population growth in Rome and Lazio from 1854 to 2001 (based on data from the Istituto Nazionale di Statistica).

been some regional concentration of Italy's population in W central Italy.<sup>75</sup> More detailed ISTAT statistics for 1861-2001 also indicate a spatial shift, with population in upland areas peaking during the mid-19th c. but continuing to expand, particularly around Rome and the southern coastal plain, until the present-day.<sup>76</sup> Future dynamic modelling of survey data may expose similar processes in the past.

Comparison can provide further insight into the structure of populations. In the pre-modern metropolis, live births and age at death were both significantly lower than in rural populations. The metropolis required significant and continual immigration to maintain (and increase) its population,<sup>77</sup> and the *suburbium* is likely to have supplied a disproportionate percentage of those migrants.<sup>78</sup> Comparison with more recent urban migration suggests significant gender and age implications, with more young men moving to towns; epigraphic evidence suggests that this was the general case at ancient Rome.<sup>79</sup> As a consequence, the demographic shape of the city and *suburbium* may have been different, with an older population and a higher percentage of females in the countryside, and a younger population with a higher percentage of males in the city. The *suburbium* was unlikely to have been a direct demographic copy of the city.<sup>80</sup>

### Implications of the population

The demographic model presented here serves to emphasize the extraordinary concentration of population in W central Italy in the Early Imperial period: a total of about 1 million persons inside the city or within 50 km means that nearly 17% of an Italian population of 7 million was concentrated in just 5% of the peninsula. Five implications of this population density will be considered: political power, consumption, diet, disease, and environment.

<sup>75</sup> Purcell 1987.

<sup>76</sup> Data from [www.istat.it](http://www.istat.it)

<sup>77</sup> Morley 2003 argues for 10,000 immigrants annually just to maintain the Early Imperial population, though Scheidel (2004, 17) notes this would effectively increase the population.

<sup>78</sup> It could not, however, have supplied all Rome's immigrants and simultaneously expanded its own population: Witcher forthcoming; Noy (2000, 19) argues that Italian immigrants formed the bulk of the Republican influx, whilst provincials became the principal immigrants during the Imperial period.

<sup>79</sup> Noy 2000, Tables 2-6.

<sup>80</sup> This might be considered alongside military recruitment (lowering male population) and slavery (increasing male population). In Roman Egypt, Bagnall and Frier (1986, 93) identified marked variation of sex ratio between metropoleis and villages. There is a similar imbalance in gender and age-structure between modern Rome and Lazio (i.e., there are more and older females in the Comune di Roma).

Although the citizen-farmer lay at the heart of political ideology, popular power is usually seen to have concentrated in the *Urbs*. Yet rural populations were also involved in urban politics. For example, during the Late Republic, populist leaders such as Tiberius Gracchus sought the political support not only of the urban proletariat but also of peasants living near Rome. Marius also relied on support from beyond the city (App., *BCiv* 1.30; Plut., *Mar.* 28).<sup>81</sup> Voters across Italy were canvassed by senators. However, the lack of mechanisms for voting at a distance meant that proximity to Rome was pivotal, so the population of Rome and its *suburbium* exercised disproportionate influence.<sup>82</sup>

The real political power of the urban *plebs* lay in the threat of violence and civil disorder, but the density and mobility of the suburban population suggests it possessed similar potential.<sup>83</sup> The *suburbium* should be explored for its political significance, not just because of its proximity and productive capacity, but for its demographic strength. The potential participation in urban politics by a relatively broad social group meant this was an area to be (almost) as carefully controlled and manipulated as the *Urbs* itself. In this context the concentration in this zone of public buildings (including imperial benefactions) is relevant.<sup>84</sup> The construction of aqueducts might have provided a means of occupying under-employed rural populations.<sup>85</sup> Donations of *crustulum et mulsum* and *sportulae* at towns across the *suburbium* constituted a direct extension of the metropolitan policy of 'bread and circuses'.<sup>86</sup>

Within the city, military and police control of the population increased under the Empire; outside the city, Augustus stationed troops, dispersed in neighbouring towns (Suet., *Aug.* 49.1). The visibility of the military increased over the succeeding centuries; culminating with Septimius Severus' decision to station *Legio II Parthica* in a new base at Albano.<sup>87</sup> The choice of location seems to have been determined by the presence of imperially-owned land, within easy reach of the capital, but it may not have been a coincidence that it was located in the densely-occupied Alban hills.

Settlement schemes extended back to Rome's first intervention in the area and continued into the Early Imperial period; over time, formal citizen colonies were replaced by *ad hoc* veteran settlement, which has been interpreted as a strategy to arrest declining population.<sup>88</sup> However, the density of rural settlement would argue against significant decline during the first two centuries A.D.; instead, veteran settlements might be seen in the context of emperors building up networks of patronage through grants of land, money and status; these loyal groups might have been a potential political force at Rome itself.

Proximity to Rome and density of population also made the *suburbium* a significant consumer. This predominantly rural population has been cast in the rôle of producer, yet survey reveals that imported 'metropolitan' goods were widespread, both spatially and socially. If the concentration at Rome of three-quarters of a million consumers formed the empire's greatest

81 Hopkins 1978, 63. Similarly, Cinna tried to raise support at Praeneste, Tibur, and other newly-enfranchised cities (App., *BCiv* 1.65). Millar (1998) argued for the actual as well as the constitutional political supremacy of the *plebs* in Republican politics. Mouritsen (2001, 132-33) counters with the practical impediments to popular political participation.

82 Millar 1998, 31-36.

83 Political violence in the *suburbium* is rarely recorded, but such opposition may have been (re-)presented as brigandage; for the portrayal of political enemies as bandits, see Grünewald 2004, 74-75.

84 Jouffroy 1986. For the concentration of imperial schemes in this area, see Papi 2000.

85 The construction of aqueducts must have absorbed large amounts of rural labour: Thornton 1986.

86 This is rather than seeing the *alimenta* as evidence of rural poverty (Patterson 1987) or as boosting rural population and production (Duncan-Jones 1974); the concentration of schemes in the densely-occupied and productive *suburbium* may be associated with the political importance of these areas. For the inclusion/exclusion of rural populations in 'urban' donations (e.g., Lucullus' public dinner of 63 B.C.), see Scheidel 2004, n.83.

87 Coarelli 1981, 80-87.

88 Keppie 1984, 106-7; Meiggs 1973, 267.



market, the additional 350,000 persons within 50 km formed a significant addition to that market.

Evidence for the central marketing of agricultural goods at Rome and their re-distribution into the *suburbium* is unclear. The (unsuccessful) trip of Cicero's workmen from Tusculum to Rome to buy grain in 44 B.C. (Cic., *Att.* 14.3.1) may either indicate that Cicero employed city labour that was eligible for the *annona*<sup>89</sup> or that Rome played a rôle in marketing the regional harvest.<sup>90</sup> Ostia and Portus probably had some privileged access to imperial imports;<sup>91</sup> other suburban towns may have had indirect access through the market — importing and storing surplus grain for the *annona*<sup>92</sup> may have resulted in saleable surplus after a run of good years. The involvement of farmers with the market is indicated by the distribution of manufactured goods on even small sites, but it seems likely that most continued to feed themselves directly rather than engaging in specialized production and depending on the market for staples. Perhaps more significant is the type of cereal grown; farmers may have produced different types of crop for their own subsistence (the more reliable barley and millet) and for the market (the more risky but valuable wheat).<sup>93</sup>

Amphoras point to the import to the *suburbium* of other agricultural products.<sup>94</sup> The majority of the identifiable amphora types, which held wine, appear even on small sites. If the amphoras had not been re-used, their import indicates consumption above and beyond simple subsistence. While this should be seen in the general context of Mediterranean redistribution,<sup>95</sup> it also indicates participation in urban styles of consumption.

Attention has focused on the means by which goods were brought to the city, but the mechanisms by which goods were dispersed into the *suburbium* require further study. Understanding the rôle of suburban demand — whether it simply drew on the metropolitan market, or whether it helped to influence the overall shape of demand — will change perceptions of both urban and rural markets.

The density of the suburban population and its close relationship with the *Urbs* may have led to a sharing of diet and environment, as well as of disease. In addition to tastes in wine, there were other dietary similarities. A. King has used faunal assemblages to identify a distinctive pattern of pork consumption in Rome and W central Italy.<sup>96</sup> He argues that the predominance of pigs is a mark of high status, culturally conditioned, and dependent upon the privileged position of Rome and its *suburbium*. Since cereals dominated the ancient diet, luxuries such as meat may have become even more significant culturally.<sup>97</sup>

As for the environment, the 'ecological footprint' of any city is substantially larger than its built-up area, and Rome was no exception. Indeed, this ecological impact might be seen as another definition of *suburbium*. The growing population of the area and the increasing demand

89 Viriout 1995, 176.

90 de Ligt 1993. Appian, *BCiv* 1.69 mentions the storage of Rome's grain at Antium, Aricia and Lanuvium. During the famine of A.D. 6, gladiators and slaves for sale were banished to more than 100 miles from the city: Dio 55.26.1-3; Rickman 1980, 185.

91 Meiggs (1973, 266) asserted that Ostia lived on imports, but did not explicitly cite the *annona*.

92 Rickman 1980.

93 From the Late Republic, bread rather than *puls* was the preferred urban diet. Rickman (1980, 6-7) argued this caused a change in the type of grain cultivated in Italy, though he gave no evidence.

94 Panella and Tchernia 1994

95 Horden and Purcell 2000, 205-6.

96 In contrast to the predominance of sheep/goat in S Italy and cattle in N Italy (King 1999, 169-73, 188-91).

97 The sea formed an important extension to Rome's hinterland. Although only one fisherman is named on an inscription from Ostia, there is much iconographic evidence (Meiggs 1973, 267-68); Prowse *et al.* (2004, 270) note the enhanced importance of marine foodstuffs at Portus on the basis of isotopic bone analysis.

from Rome led to significant intensification of land use.<sup>98</sup> A. Brown and C. Ellis note that contemporary erosion deposits (alluvium/colluvium) are greater closer to Rome, and that this is probably caused by land-use intensity rather than variation of climate.<sup>99</sup> The effects of this degradation were not restricted to the *suburbium*; the frequency of flooding in the city (at least, according to the historical record) appears to have risen during the Imperial period probably as a result of deforestation and agricultural exploitation as well as the expansion of Rome itself onto the floodplain (Campus Martius).

Not unconnected is the issue of disease and, specifically, endemic malaria. The significance of malaria both in Rome and along the coast and in the Tiber valley has recently been restated; it is likely to have been worsened by increased flooding.<sup>100</sup> But perhaps more significant in terms of urban/rural relations was epidemic disease. Usually the isolation and low density of rural populations make them more resistant to such health crises; in the *suburbium*, high density and mobility of population and close proximity to Rome make it possible that this area was particularly vulnerable to a wide range of diseases.<sup>101</sup> In brief, politics, consumption, diet, environment and disease, to name just 5 areas, are all affected by a densely-populated *suburbium* and its integration with the *Urbs*.

### Conclusions

It is striking that, as figures for the population of Early Imperial Rome have fallen (e.g., c.750,000 rather than 1 million), those for the contemporary Italian population have risen (towards c.14 million). This divergence is significant. The reconstruction of populations based on field-survey data has many pitfalls, but it can make a positive contribution by establishing probabilities and orders of magnitude. The figures presented above support the lower estimates of Beloch and Brunt, rather than the higher ones of Frank and Lo Cascio. The density of population in the *suburbium* has important implications for interpretations of urban/rural relations with respect to social, political and economic organization.

Rather than envisaging the populations of metropolis and *suburbium* as antithetical (as in literary reconstructions of the *élite gaze*) or as competitive (as in archaeologists' focus on agricultural production for market), they are better conceived as complementary. In practice, the crowded *suburbium* formed a significant cultural, demographic, economic and political extension to the *Urbs* itself; it was a single system united through the flows of people (both dead and alive), gods, goods, food, information, money, and waste. This has implications for interpreting consumption, for example: instead of goods 'trickling' into the *suburbium* as surplus from Rome, the suburban population may have constituted a more active body of consumers, exercising demand in its own right.

Further implications concern the degree to which Rome's 'urban' population was concentrated within the *pomerium*. For example, G. Storey has reviewed the archaeological and comparative evidence for population density at Rome and concluded that, if the city did have a population of one million, it was probably spread over an area of c.2500 km<sup>2</sup>.<sup>102</sup> This can be related to the suggestion by Beloch that the corn dole might have extended to include citizens within 40 km.<sup>103</sup> When combined with the figures for high suburban density presented here, it

98 Morley 1996.

99 Brown and Ellis 1995.

100 Sallares 2002.

101 Patterson 2004, 67; Duncan-Jones 1996, 134-36. Ael. Arist., *Or.* 51.25 describes his experience of plague in the suburbs of Rome.

102 Storey (1997, 976) calculates the population within the *pomerium* as 0.45 million. Quilici (1974b, 424) similarly doubts there was space within the city for one million and envisages a broader regional distribution.

103 The criteria for qualification were complex and changing (Virilouvet 1995, 165-241); it is often stated

is possible to envisage an 'extended metropolis', with as many rural as urban inhabitants, and where the former were as important to the political, social and economic life of the urban core as the latter. As the intensity of the relationship becomes more apparent, the possibility of alternative understandings of Rome, its *suburbium*, and Roman Italy as a whole begin to emerge.

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that *domicilium* was one of the main criteria, but how far did *domicilium* extend? The need for physical presence and the inconvenience of distance appear to be the main reasons for arguing that *domicilium* and the *pomerium* coincided. The dole was centralized during the Early Imperial period at the Porticus Minucia: *LTUR* IV, 132-37. However, Agusta-Boularot (1998, 52-53) suggests that the dole might include citizens in the immediate suburbs.



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