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Author(s): J. K. Evans

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## WHEAT PRODUCTION AND ITS SOCIAL CONSEQUENCES IN THE ROMAN WORLD

### I

In every generation the overwhelming majority of those who inhabited the *imperium Romanum* worked on the land and derived their sustenance directly from it.<sup>1</sup> The notion is commonplace and scarcely admits of debate, but its implications for long have suffered unwarranted neglect. The well-being of any society ultimately rests upon the quantity and diversity of its food supplies, but the immediacy of their contact with the soil continually reminded the Roman people of this platitude with a force which few students of their history today can readily appreciate. The annual yield of wheat in particular, always a staple item in the Roman diet, and to a lesser extent of such cereals as panic and millet,<sup>2</sup> acutely affected every segment of the Roman community. One example will serve to illustrate the point. The dependence of the *plebs urbana* upon imported surpluses is notorious, equally the intense suffering and violence which typically accompanied any disruption of their supply. Such outbreaks frequently punctuated the chaotic final decades of the Republic,<sup>3</sup> but they also scarred more than one régime during the first two centuries of the Principate.<sup>4</sup>

The predilection of our literary sources for events in Rome, however, tends to

<sup>1</sup> With the exceptions noted below, the system of citation employed in this paper conforms, for classical sources, with that of the *Oxford Classical Dictionary*, 2nd ed. (Oxford, 1970), pp. ix–xxii, and for periodicals with the index of the relevant volume of *L'année philologique*: Abbott-Johnson = F. F. Abbott and A. C. Johnson, *Municipal Administration in the Roman Empire* (Princeton, 1926); *Comp. Stud. Soc. & History* = *Comparative Studies in Society and History*; *Econ. & Pol. Weekly* = *Economic and Political Weekly*; *Econ. Hist. Rev.* = *Economic History Review*; *ILAlg.* = S. Gsell (ed.), *Inscriptions latines de l'Algérie* (Paris, 1922–76); *J. Econ. Hist.* = *Journal of Economic History*; *J. Peasant Stud.* = *Journal of Peasant Studies*; *Muson.* (ed. Hense) = Musonius Rufus, *Reliquiae*, ed. O. Hense (Leipzig, 1905); *PFlor.* = G. Vitelli (ed.), *Papiri Fiorentini* (Milan, 1906–15); Smallwood = E. M. Smallwood, *Documents Illustrating the Principates of Gaius Claudius and Nero* (Cambridge, 1967).

The following conversion factors are also utilized:

3240 Roman lb.	= 2240 English lb.	= 1 long ton
22 Roman lb.	= 1.00 <i>modius</i>	= 6.75 kg
1 Attic medimnus	= 4.62 <i>modii</i>	= 31.2 kg
1 Sicilian medimnus	= 6.00 <i>modii</i>	= 40.5 kg

In the hope that this paper may prove useful to readers unfamiliar with the classical languages, translations have been provided by the author for those passages cited *in extenso*.

<sup>2</sup> cf. Columella, *Rust.* 2. 9. 17: 'Panic and millet should also be reckoned among the grain crops, although I have formerly classified them among the legumes, for in many locales the peasants subsist on foods made from them'; Pliny, *HN* 18. 101: 'the Gallic provinces, and especially Aquitania, also make use of panic, as do the districts of Italy along the Po, although they add to it beans without water... The Pontic peoples prefer panic to any other food'.

<sup>3</sup> Food riots are recorded in 75 B.C. (Sall. *H. fr.* 2. 45 M), 57 (Cic. *Dom.* 6, 10–14; cf. *Att.* 4. 1. 6; *QFr.* 2. 3. 2; *Har. Resp.* 31; *Red. Sen.* 34; Plut. *Pomp.* 49. 5) and 40 (App. *BCiv.* 5. 67–8; Dio Cass. 48. 31), further shortages in 66 (Cic. *Leg. Man.* 44), 41 (App. *BCiv.* 5. 22, 25; Dio Cass. 48. 7. 4), 39 (*BCiv.* 5. 71), 38 (*BCiv.* 5. 92) and 36 (*BCiv.* 5. 99).

<sup>4</sup> In 22 B.C. (Dio Cass. 54. 1. 2–3), A.D. 6 (Dio Cass. 55. 26. 1–3, 27. 1–3), 32 (Tac. *Ann.* 6. 13), 51 (*Ann.* 12. 43. 1; Suet. *Claud.* 18. 2) and 189 (Dio Cass. 73. 13; Hdn. 1. 12. 3–13. 6). Additional shortages are registered under Augustus in A.D. 5 (Dio Cass. 55. 22. 3) and 7 (Dio Cass. 55. 31. 4), under Tiberius in 19 (*Ann.* 2. 87), Claudius in 42 (Dio Cass. 60. 11. 1), and under Nero (Suet. *Ner.* 45), Otho (Tac. *Hist.* 1. 86), Antoninus (S. H. A. M. *Ant.* 8. 11, 9. 1) and Marcus Aurelius (*Marc.* 8. 4).

obscure the precariousness of conditions throughout the Empire. Given the prohibitive cost of land transport,<sup>5</sup> every community and district without direct access to the sea was necessarily dependent upon its own food resources<sup>6</sup>—and the casual references in several authors to the cultivation of famine foods offer a disquieting hint of the frequency with which these resources must have failed.<sup>7</sup> While never systematically examined, the particular instances of crop failure and consequent famine assembled by Rostovtzeff and MacMullen provide a grim context for these remarks.<sup>8</sup> Indeed, the recurrent dearths which they note in Egypt and the provinces of north Africa, whose harvests were among the most reliable in the Empire, lead one to suspect that in less favoured areas crises may have occurred with greater regularity than the porous condition of our sources would suggest.<sup>9</sup>

Clearly, then, no question is of more fundamental importance for our understanding of Roman history than the productivity of the soil in the various districts of Italy and the provinces. Unhappily, it is also true that few problems have seemed less capable of resolution, for the evidence with regard to wheat yields is at once meagre and plainly contradictory.<sup>10</sup> That so far debated consists of four passages, ranging across 150 years and embracing both Sicily and Italy, in Cicero, Varro, Columella and the elder Pliny.

The earliest and most specific is Cicero's remark in the course of his *Verrines* (70 B.C.) that 'in the *ager Leontinus* about one [Sicilian] *medimnus* of *triticum* is sown per *iugerum*, with a constant and even rate of sowing; the land yields eightfold when everything goes well, even tenfold when all the gods lend a hand' (*Verr.* 2. 3. 112). Here,

<sup>5</sup> On which, see esp. C. A. Yeo, 'Land and Sea Transportation in Imperial Italy', *TAPhA* 77 (1946), 221–44; and A. Burford, 'Heavy Transport in Classical Antiquity', *Econ. Hist. Rev.* sec. ser. 13 (1960), 1–18. That land transport charges, while high, were not excessive for a society which relied upon ox carts and predominantly unpaved roads, has been usefully pointed out by C. Clark and M. Haswell, *The Economics of Subsistence Agriculture*, 3rd ed. (London, 1967), pp. 184–9. With the price of *frumentum* fixed at 100 *denarii/castrensis modius*, the freight charge of 20 *denarii*/1200 Roman lb./Roman mile decreed by Diocletian's Edict (17. 3) may be expressed as a rate of 4.59 kg/ton/km (since they do not take into account that the Roman mile is only 94.7% of the English, the figure of 4.4 kg/ton/km given by Clark and Haswell must be adjusted upward). The median rate for the 34 examples of cart and wagon transport which they list is 3.4 kg/ton/km.

<sup>6</sup> A circumstance most succinctly expressed by Gregory of Nazianzus: 'there was a famine, the severest in fact in human recollection. The community languished, but help was not forthcoming in any degree nor was there any cure for the calamity. Coastal cities easily endure such shortages, since they of course dispose of what they have in abundance and in turn receive what they lack by sea. But those of us who dwell far from the sea derive no advantage from those things in which we abound nor can we obtain what we lack, as we can neither export what we have nor import what we need' (*Or.* 43. 34). In brief but perceptive remarks, however, H. P. Kohns, *Versorgungskrisen und Hungerrevolten im spätantiken Rom* (Bonn, 1961), pp. 10–11; A. H. M. Jones, *The Later Roman Empire 284–602*, I (Oxford, 1964), pp. 445–6, II, pp. 841–5; P. A. Brunt, *Italian Manpower 225 B.C.–A.D. 14* (Oxford, 1971), pp. 703–6; and T. Pékary, *Die Wirtschaft der griechisch-römischen Antike* (Wiesbaden, 1976), pp. 69–70, 91–2, have all correctly stressed the inadequacy of maritime as well as land transport. The periodic shortages in imperial Rome, and the difficulties which beset such coastal cities as Ariminum (*CIL* 11. 377) and Aspendus (Philostr. *VA* 1. 15), demonstrate alike that access to the sea did not guarantee immediate relief from famine.

<sup>7</sup> cf. Strab. 5. 1. 12; Columella, *Rust.* 2. 9. 14, 19, 2. 10. 1, 22; Pliny, *HN* 18. 127, 141.

<sup>8</sup> M. Rostovtzeff, *The Social and Economic History of the Roman Empire*, 2nd ed. rev. P. M. Fraser (Oxford, 1957), p. 598 n. 9; R. MacMullen, *Enemies of the Roman Order: Treason, Unrest and Alienation in the Empire* (Cambridge, Mass., 1967), pp. 249–54.

<sup>9</sup> Egypt: Joseph. *Ap.* 2. 63; Tac. *Ann.* 2. 59; Suet. *Tib.* 52 (A.D. 19); A. C. Johnson, in T. Frank (ed.), *An Economic Survey of Ancient Rome*, II (Baltimore, 1936), 18 (A.D. 45–7); *P. Flor.* 61 (between A.D. 48 and 88); Pliny, *Pan.* 31 (c. A.D. 100). North Africa: *CIL* 8. 1648, 9250, 15497, 25703–4, 26121; *ILAlg.* 1. 2145.

<sup>10</sup> Since the agricultural routine in Egypt was without parallel in the rest of the Empire, the data from that province will be disregarded here.

therefore, the return seems normally to have varied between 48 and 60 *modii/iugerum*, although Cicero hastens to add that a tenfold return was 'something which very rarely happens' (2. 3. 113).<sup>11</sup> It should also be registered that, on an island famed for its fertility (see esp. Strab. 6. 2. 7), Cicero regarded the Leontini as 'principes rei frumentariae' (2. 3. 109). If this pronouncement can be taken at face value, the soil in this region was the most prolific in Sicily.

Some three decades later Cicero's contemporary, the learned M. Terentius Varro, declared that 'the district and the type of soil are of such great importance that the yield from the same seed may be tenfold in one place and fifteenfold in another, as in some parts of Etruria' (*Rust.* 1. 44. 1). So vague an observation can hardly be pressed, but Etrurian wheat was already an important resource during the Second Punic War (Livy 25. 15. 4, 20. 3, 22. 5, 28. 45. 15–18), and it continued to maintain both its high reputation (Columella, *Rust.* 2. 6. 3; Pliny, *HN* 18. 66, 86–87) and market (Pliny, *Ep.* 5. 6. 10–12) at Rome in the early Principate.

While he apparently entertained reservations about the reliability of such claims, Varro also catalogues three communities whose yields were purported to be of legendary proportions<sup>12</sup> – a theme resumed and credulously inflated by the elder Pliny:

Nothing is more prolific than *triticum* (nature having endowed it with this attribute because she used to nourish man with this above all else) inasmuch as one *modius*, given suitable soil such as that on the Byzacian plain of Africa, may yield 150 *modii*. . . Indeed, both the Leontine plains and other parts of Sicily, the whole of Baetica and particularly Egypt, yield one hundredfold (*HN* 18. 94–5).

In sharp contrast, however, and writing at about the same time, Columella asserted in the course of an extended defence of the profitability of viticulture that a fourfold yield in most of Italy would be considered a bountiful return.<sup>13</sup>

Such is the evidence (one can hardly call it statistical), and it may readily be apportioned into three divisions: the fourfold return adduced by Columella; the eight- to tenfold yields cited in Cicero and Varro; and the extraordinary returns of one hundredfold and more recorded by Varro and Pliny. The latter are clearly anecdotal and may be dismissed at once, but for the rest there is currently sharp disagreement. One scholar, noting the close correspondence between the outputs of Sicily and Tuscany in the post-war period and those cited by Cicero and Varro, has vigorously defended their accuracy.<sup>14</sup> Another, of no less prominence, has pronounced Varro's

<sup>11</sup> V. M. Scramuzza, in T. Frank (ed.), *Econ. Survey*, III (Baltimore, 1937), p. 260 n. 3, has argued from the high bids of Apronius (216,000 *modii*) and Minucius (246,000) for the tithe of Leontini that the yield must actually have approached sixteenfold. Cicero is adamant, however, that Apronius would have suffered a sizeable loss on the contract if his extortionate activities had not enjoyed the support of Verres (2. 3. 110–17).

<sup>12</sup> *Rust.* 1. 44. 2: 'they say that at Sybaris in Italy the yield is regularly even one hundredfold, and likewise at Gadara in Syria and Byzacium in Africa'.

<sup>13</sup> *Rust.* 3. 3. 4: 'for we can hardly recall a time when, at least in the greater part of Italy, grain crops responded with a fourfold yield'. Pliny dedicated the *Naturalis Historia* to Titus in A.D. 77 (*praef.* 3), and Columella composed the third book of his *De Re Rustica* c. A.D. 60–5; cf. R. Reitzenstein, *De Scriptorum Rei Rusticae Libris Deperditis* (Diss. Berlin, 1884), p. 31; W. Becher, *De L. Iunii Moderati Columellae Vita et Scriptis* (Diss. Leipzig, 1897), p. 11; A. Kappelmacher, 'Iunius' no. 104, *RE* 10 (1917), 1059; and M. Schanz, *Geschichte der römischen Literatur*, 4th ed. rev. C. Hosius, II (Munich, 1935), pp. 787–8.

<sup>14</sup> K. D. White, 'Wheat Farming in Roman Times', *Antiquity* 37 (1963), 207–12. The Sicilian harvest in 1959 averaged 10.6 quintals/hectare, that of 70 B.C. 11.2 q./ha.; the comparable figures for Tuscany are 19.9 q./ha. (1959) and 17–21 (Varro), depending upon the seed ratio. This argument should be taken very seriously. Deterioration of climate and soil may compensate for whatever technical advances have occurred in the interim; see especially M. I. Finley, *Ancient Sicily to the Arab Conquest* (London, 1968), pp. 4–5. Nor should such progress itself be taken for granted; cf. K. D. White, *supra* p. 209; and J. M. Frayn, *Subsistence Farming in Roman Italy* (London, 1979), p. 13.

declaration 'worthless', and asserted that Columella's assessment can hardly be considered unduly pessimistic.<sup>15</sup> And at this impasse, for the moment, the debate remains.

## II

The divergence may, however, be more apparent than real. Quite apart from the fact that Columella's ambiguous *maiore parte Italiae* cannot be applied to Campania and Etruria without demur,<sup>16</sup> it has been justly remarked that he alludes to the practice of sowing cereals in the *arbustum* so frequently that his opinion may in any event reasonably be considered relevant only to this system of mixed farming.<sup>17</sup> It need scarcely be added that intercultivation, like the biennial fallow, results in drastically reduced yields. Cicero, Varro and Columella may, therefore, be saying the same thing in two different ways.

Two neglected items may broaden our perspective on both this issue and the larger problem of food production in the classical world. In 63 B.C. a member of the tribunician college, P. Servilius Rullus, brought forward the most ambitious and complex agrarian proposal in the history of the Republic, a measure advocating for the first time distribution of the *ager Campanus* and *campus Stellas*, in allotments of ten and twelve *iugera* respectively (Cic. *Leg. Agr.* 2. 78–9, 85), to some 5,000 settlers (*Leg. Agr.* 2. 76–7, 96). Confronted with the strident opposition of the consul Cicero, and threatened by tribunician veto (Cic. *Sull.* 65), Servilius either withdrew his *rogatio* or witnessed its defeat in the assembly.<sup>18</sup> Rullus and his supporters were fully vindicated four years later, however, with the passage of Caesar's *lex agraria* and supplementary *lex Campana*.<sup>19</sup>

Plots of ten *iugera* in the *ager Campanus* and (presumably) of twelve in the *ager Stellas* seem once again to have been specified (Cic. *Att.* 2. 16. 1; Suet. *Caes.* 20. 3). Despite Cicero's expectation, however, that not more than 5,000 could be accommodated (*idem*), our sources are in agreement that Caesar in fact made provision for 20,000 colonists (App. *BCiv.* 2. 10; Vell. *Pat.* 2. 44. 4; Suet. *Caes.* 20. 3) recruited *extra sortem* from the urban poor (App. *BCiv.* 2. 10; Vell. *Pat.* 2. 44. 4; Plut. *Pomp.* 47. 3; *Cato Min.* 31. 4, 33. 1).<sup>20</sup> Still, for the purposes of this inquiry it is a provision restricting eligibility to fathers of three or more children which is most germane (App. *BCiv.* 2. 10; Suet. *Caes.* 20. 3; Dio Cass. 38. 7. 3).

The *ager Campanus* had formed a part of the *ager publicus* since 211 B.C., and Cicero

<sup>15</sup> P. A. Brunt, *JRS* 62 (1972), 158. Cf. R. Duncan-Jones, *The Economy of the Roman Empire* (Cambridge, 1974), p. 49 n. 4, who has placed these passages in useful perspective.

<sup>16</sup> Nor, for that matter, to any other particular region. On the continuing importance of grain production in Apulia, for example, see Varro, *Rust.* 1. 2. 6; Strab. 6. 3. 9; Columella, *Rust.* 3. 8. 4.

<sup>17</sup> T. Frank, *Econ. Survey*, v (Baltimore, 1940), p. 141; K. D. White, *Antiquity* 37 (1963), 209; *Roman Farming* (London, 1970), p. 49. Cf., on intercultivation, *Rust.* 2. 9. 6, 5. 6. 11, 7. 3, 9. 7, 9. 12–13, 10. 5, 11. 2. 54; *Arbor.* 162.

<sup>18</sup> Its exact fate is unknown. For the sources on this episode see T. R. S. Broughton, *The Magistrates of the Roman Republic*, II (New York, 1952), p. 168. On the contents of the bill cf. E. G. Hardy, *Some Problems in Roman History* (Oxford, 1924), pp. 68–98; A. Afzelius, 'Das Ackerverteilungsgesetz des P. Servilius Rullus', *C&M* 3 (1940), 214–35; and E. Gruen, *The Last Generation of the Roman Republic* (Berkeley, 1974), pp. 388–96.

<sup>19</sup> On Caesar's agrarian legislation of 59 B.C., cf. M. Cary, 'The Land Legislation of Caesar's First Consulship', *JPh* 35 (1920), 174–90; E. Gruen, *LGRR*, pp. 397–401.

<sup>20</sup> That 20,000 new settlers could not have been planted in the *ager Campanus* has, however, been convincingly argued by M. A. Levi, 'Una pagina di storia agraria romana', *A&R* 3 (1922), 239–52; cf. 'I confini dell'Agro Campano', *AAT* 57 (1921–2), 604–16. In 51 B.C. land was still available there for distribution (Cic. *Fam.* 8. 10. 4)—a telling point.

speaks with pardonable enthusiasm about the reliability of its revenues: 'during the Mithridatic war Asia for many years brought you no return; the tribute of the Spanish provinces during the Sertorian period was non-existent; during the Servile war Manius Aquilius even lent grain to the cities of Sicily; but a bad report has never been received with regard to this income' (*Leg. Agr.* 2. 83). Such rhetoric unmasks an important fact: by 59 B.C. the familiarity of the Roman ruling class with the Campanian land was intimate and of long standing. It had indeed been a source of public moneys for the previous 150 years,<sup>21</sup> but of equal importance, for at least a century the *villae* of Roman *nobiles* had been dotting its coastline.<sup>22</sup> In the late Republic, senatorial investment in the area rapidly expanded; more than forty members of the *ordo* are known to have owned villas around the Bay of Naples.<sup>23</sup> Hence for the *ager Campanus* at least, the authors of agrarian legislation could draw upon first-hand knowledge of the district when drafting their proposals.

We may be reasonably certain, then, that the decision to allocate plots of ten *iugera* in the *ager Campanus* was not reached in ignorance. Nor is it likely to have been merely capricious, for that would not only have been self-defeating but, in the case of the Rullan proposal, completely at variance with the attention to detail exhibited throughout its various chapters. The subtle distinction drawn between the *ager Campanus* and *ager Stellas* may profitably be injected here, for this refinement certainly suggests that Servilius had attempted to ascertain the subsistence needs of their respective colonists. Thus the question arises: what level of productivity is necessary for ten *iugera* to provide subsistence for five people?

The nutritional requirements of the subsistence cultivator, still a significant figure in many areas of the world, have been the subject of repeated and careful examination, the findings of which have been conveniently synthesized by Clark and Haswell. Assuming a minimal extraction rate of ten per cent – that is, that a kilogram of wheat will be milled down to 900 grams in the process of removing at least part of the bran – these authors have determined that the minimum intake necessary to sustain life varies between 190 and 235 kilograms/person/year of *unmilled* grain, with specific needs conditioned by such factors as climate, body weight, and degree and duration of physical effort.<sup>24</sup> At the same time, however, they correctly aver that even for the most impoverished sedentary societies it would be mistaken to presume so unpalatable a diet acceptable or routine. The human desire for variety, both in taste and substance, causes land to be diverted from production of cereals to nutritionally less efficient foods, such as fruits and vegetables. With this additional factor taken into account, therefore, Clark and Haswell have rephrased the modern level of subsistence as 230–275 kg wheat equivalent/person/year.<sup>25</sup>

<sup>21</sup> Cicero returns repeatedly to this theme, even when addressing the assembly (cf. *Leg. Agr.* 80, 81, 83).

<sup>22</sup> The first on record is that of Scipio Africanus at Liternum in 184 B.C. (Livy 38. 52. 1). On the Roman *villae* here in the second century B.C. see J. H. D'Arms, *Romans on the Bay of Naples* (Cambridge, Mass., 1970), pp. 1–17.

<sup>23</sup> Including Caesar himself. The evidence is conveniently arranged in D'Arms, *op. cit.* pp. 171–201; cf. I. Shatzman, *Senatorial Wealth and Roman Politics* (Brussels, 1975), pp. 440–3, 457.

<sup>24</sup> C. Clark and M. Haswell, *Econ. Subsistence Agr.*, pp. 7–8, 53–4. Their data actually imply specific *termini* of 188 and 232 kg/person/year (the figures which appear in the text have been rounded off). The normal extraction rate for *triticum* and unmoistened *siligo* seems to have been very close to ten per cent; cf. N. Jasny, 'Wheat Prices and Milling Costs in Classical Rome', *Wheat Studies of the Food Research Institute, Stanford University* 20 (1944), 154; and L. A. Moritz, *Grain Mills and Flour in Classical Antiquity* (Oxford, 1958), pp. 184–209.

<sup>25</sup> *Econ. Subsistence Agr.*, pp. 54, 70 and 223, where the nutritional utility of other common food substances relative to wheat has been conveniently tabled.

What little evidence we possess certainly suggests that both in his need for variety and in his dietetic requirements the Roman peasant did not materially differ from his modern counterpart. In an important paper, Joan Frayn has drawn attention to the large variety of wild plants which the *rusticus* gathered to supplement (or replace) his bread and porridge—a particularly attractive option, since it did not tax the resources of the *fundus* itself.<sup>26</sup> With regard to the latter, however, in addition to Columella's vague but plausible contention that poultry and sheep were to be found on every *fundus* (*Rust.* 7. 2. 1, 8. 2. 1–2), it seems clear that on most smallholdings some portion of the land was set aside for a garden. Pliny ambiguously comments that 'at Rome in any event a *hortus* was in itself a poor man's farm' (*HN* 19. 51), and it may be inferred from Galen that among the peasantry beans, lentils and pulses were normally cultivated in addition to wheat.<sup>27</sup> More to the point, however, there is extant in the (pseudo-)Virgilian *Moretum* an incisive and quite credible portrait of a peasant's vegetable garden.<sup>28</sup> 'It lacked for nothing which a poor man's need requires' (line 64); that is, it furnished both marketable commodities (lines 79–83) and food for the table. A herbal dish, the *moretum* consists here of crushed garlic, parsley, coriander and rue, mixed with salt, cheese, oil and vinegar, and kneaded into a ball (lines 88–118). But recipes appear in other sources as well (cf. Ov. *Fasti* 4. 367; Columella, *Rust.* 12. 59. 1); this was clearly common fare.<sup>29</sup>

As might be expected, consumption data are as elusive in the sources for Roman history as yield figures; nevertheless, what we have are both internally consistent and in harmony with modern findings. The two signal passages are lodged in Polybius and the elder Cato. According to Polybius (6. 39), the Roman trooper received a monthly corn allowance of two-thirds of an Attic *medimnus*, by which he undoubtedly meant a ration of three *modii* per month.<sup>30</sup> Thirty-six *modii* amount to 243 kilograms per annum, well within the modern range of 230–275 kg wheat equivalent/person/year stipulated by Clark and Haswell.

For the *vilicus*, *vilica*, *epistates* or *opilio* employed on a *villa rustica*, Cato also recommends an annual allotment of 36 *modii*, with a more liberal stipend for the unchained field-hands of four *modii* per month in winter and four and one-half in summer, or approximately 344 kg/year.<sup>31</sup> To be sure, this allowance exceeds the terminus mentioned above by a considerable margin, but it should be remembered that Cato worked his field-hands ruthlessly (cf. *Rust.* 2. 3–4, 7; 39), and larger rations would accordingly have been necessary.

There can be little doubt, then, that the Roman definition of subsistence closely approximated our own, and we may thus calculate the basic needs of a family of five

<sup>26</sup> Wild and Cultivated Plants: A Note on the Peasant Economy of Ancient Italy', *JRS* 65 (1975), 32–9 = *Subsistence Farming in Roman Italy*, pp. 57–72.

<sup>27</sup> Περὶ εὐχρημίας καὶ κακοχρημίας τροφῶν, ed. K. G. Kühn, *Medicorum Graecorum Opera*, vi (Lipsiae, 1823), pp. 748–9.

<sup>28</sup> On the questions of authorship and originality cf. W. Kroll, 'Moretum', *RE* 16 (1933), 298–9; and Schanz-Hosius II<sup>4</sup>, pp. 89–90, and the literature cited therein.

<sup>29</sup> Such crop diversity was by no means peculiar to the Roman peasantry. A similar pattern prevailed, for example, at Kerkeosiris in Ptolemaic Egypt. In 119/18 B.C. wheat accounted for 62 per cent of the cleruchic land under cultivation in the village, lentils 18 per cent and beans 2 per cent. In 116/15 wheat was still the most significant crop (54 per cent), while the relative importance of beans (20 per cent) and lentils (8 per cent) had been reversed; see D. J. Crawford, *Kerkeosiris: An Egyptian Village in the Ptolemaic Period* (Cambridge, 1971), p. 186.

<sup>30</sup> 0.67 Attic *medimnus* = 3.08 *modii*; for the conversion factor see n. 1 above.

<sup>31</sup> *Rust.* 56. In ch. 149, Cato cites the period 1 September–1 March as appropriate for the leasing of winter pasturage. If this is what he broadly meant by the winter season, then his labourers received 24 *modii* (162 kg) in the winter and 27 (182 kg) in the summer, or 344 kilograms in all.

as roughly 1150–1375 kg wheat equivalent/year (170–204 *modii*). To this sum, however, must be added seed for the following year's crop. Pliny and the agrarian authors are in agreement that the sowing ratio was regularly five *modii* per *iugerum*, with minor variations.<sup>32</sup> The rich soil of the *ager Campanus* certainly did not require more, and with that the true level of subsistence for a family of five there may be reasonably fixed at 220–254 *modii* per annum. On a plot of ten *iugera*, this would require an annual yield of 4.4–5.1: 1.<sup>33</sup>

Hence in a region universally lauded for the extraordinarily fertile nature of its soil,<sup>34</sup> the anticipated return would seem at first glance to have been no more than fivefold, and possibly somewhat smaller. The yield in less favoured areas of the peninsula would normally have been still more modest, and with that we are forcefully reminded of Columella's maxim that, *maiore parte Italiae*, a fourfold return was unreachable. Still, the suspicion lingers that Columella may have dissembled here in the interest of promoting viticulture,<sup>35</sup> especially since our yield-ratio for the *ager Campanus* would have to be doubled if these plots were subject to biennial fallowing. The result would then be consistent with the observations of Cicero and Varro.

Although it would seem self-evident that fallowing was universally practised in the ancient world (with, of course, the exception of Egypt), in fact a surprising number of references to continuous cultivation or crop rotation can be excerpted from our Roman authorities.<sup>36</sup> Two such sources cite Campania specifically as a district in which rotational strategies were widely practised (Strab. 5. 4. 3; Pliny, *HN* 18. 111, 191); nevertheless, it would be exceedingly imprudent to assume that this phenomenon was commonplace. Land subject to uninterrupted exploitation requires heavy dosages of fertilizer to maintain its fruitfulness, but the texts of Cato, Varro and Columella leave no doubt that manure, the only fertilizer commonly available in Roman Italy, was in desperately short supply.<sup>37</sup> In reality there was no practicable alternative to fallowing; thus it can hardly occasion surprise that it is recommended even for rich soils capable of continuous cropping.<sup>38</sup>

Whether or not the evidence of Cicero, Varro and Columella can be harmonized in this fashion, the inescapable fact remains that the two most fertile districts of Sicily and Italy produced at best only a tenfold return. The implications of this fact for the rest of Italy and the Empire at large are inexorable. With the signal exception of Egypt, few locales in the entire *imperium Romanum* could have matched, much less surpassed, the vaunted fertility of the *ager Campanus* and *ager Leontinus*. Logically, therefore, we are compelled to consider these yields as optimal – a level of productivity ordinarily quite beyond the reach of the vast majority of peasant cultivators. What were the social consequences of such marginal yields, particularly for the peasantry itself? In a paper of such brief compass these can be neither fully enumerated nor exhaustively discussed.

<sup>32</sup> Varro, *Rust.* 1. 44. 1; Columella, *Rust.* 2. 9. 1–2, 5, 11. 2. 75; Pliny, *HN* 18. 198–200.

<sup>33</sup> With a sowing ratio of four *modii*/*iugerum*, the return would be marginally higher (5. 25–6. 1: 1).

<sup>34</sup> cf. Cic. *Leg. Agr.* 1. 21, 2. 80; Varro, *Rust.* 1. 2. 6; Strab. 5. 4. 3; Columella, *Rust.* 3. 8. 4; Pliny, *HN* 18. 86, 111.

<sup>35</sup> The point is not new; cf. T. Frank, *Econ. Survey*, v, p. 141; and R. Duncan-Jones, *Econ. Roman Empire*, p. 52 n. 1.

<sup>36</sup> cf. Cato, *Rust.* 35. 2; Varro, *Rust.* 1. 9. 6, 44. 2–3; Columella, *Rust.* 2. 9. 15, 10. 4, 10. 6, 10. 31 (continuous cropping); Verg. *G.* 1. 73–6; Strab. 5. 4. 3; Pliny, *HN* 18. 111, 187, 191. Soil so worked was normally termed *ager restibilis*.

<sup>37</sup> The brief comments of K. D. White, *Roman Farming*, pp. 126, 136–7; and P. A. Brunt, *JRS* 62 (1972), 157–8, strike to the core of the problem.

<sup>38</sup> cf. Varro, *Rust.* 3. 16. 33; Verg. *G.* 1. 71–2; Columella, *Rust.* 2. 9. 4, 10. 7; Pliny, *HN* 18. 187.



Rather, two aspects of the problem will be touched upon here: the influence of low yields upon the Roman family, and upon the relationship between the peasantry and soldiery.

### III

Some fifty years ago the distinguished Russian agrarian economist A. V. Chayanov wrote that in general 'the connection between family size and size of agricultural activity should be understood as a dependence of area of land for use on family size rather than conversely'. He hastened to add, however, that if additional land was not available for rent, purchase or co-optation, 'at a low level of material security, when there is the mere possibility of physical existence, material conditions influence family size with the force of a determinant'.<sup>39</sup> Chayanov elaborated this doctrine within an exclusively Russian context, but it can be and has been extended to other societies in which marginal cultivators form a significant element of the population.<sup>40</sup> Do we possess, in the voluminous testimony to abortion, exposure, infanticide and the sale of free-born children into slavery, evidence of one response to marginal food productivity among the Roman peasantry?

Historians, moralists and Christian apologists alike, it may be unequivocally declared, bear witness to the nexus between landholding and the procreation and maintenance of children. Livy, for example, purports that in 393 B.C. 'a decree of the Senate provided that seven *iugera* of the *ager Veientanus* should be distributed to every plebian, and not to heads of family only but that every free-born member of the household should be taken into account, that they might be willing with this inducement to rear children' (5. 30. 8). This episode, like so much of the annalistic detail for the early Republic, may be apocryphal, for it is strikingly similar to Appian's remark in the context of the Gracchan reform effort that the rural poor 'were being reduced from prosperity to extreme penury, and from this to childlessness, since they were unable to rear their children' (*BCiv.* 1. 10).<sup>41</sup> Although narrowly associated today with the economic dislocation attendant upon Roman imperialism in the second century B.C., such complaints are in fact equally widespread in the literature of the principate. Thus Musonius Rufus, in one of his moral essays, echoes the lament of Appian: 'but I am poor and without means, and have sired many children; how should I rear them?'<sup>42</sup> Few would have derived comfort from the exhortation which follows, and none at all from the stinging criticism of exposure and infanticide delivered two centuries later by Lactantius, who also considered such inhumanity inextricably linked to poverty.<sup>43</sup> That his attitude to these practices, in common with those of other Jewish and Christian *literati*, is not only self-interested but at times excessively vitriolic, may be conceded at once. Still, the sombre exchange between Pliny and Trajan on the subject of exposure should discourage the notion that the apologists have also

<sup>39</sup> A. V. Chayanov, *Peasant Farm Organization*, in D. Thorner, B. Kerblay and R. E. F. Smith (eds.), *The Theory of Peasant Farming* (Homewood, Ill., 1966), pp. 64-5, 68.

<sup>40</sup> cf., recently, J. McKinnon, 'Chayanov in the Solomons', *Pacific Viewpoint* 17 (1976), 49-60; S. S. Shrivkumar, 'Family Size, Consumption Expenditures, Income and Land Holding in an Agrarian Economy', *Econ. & Pol. Weekly* 11 (1976), 1115-24; and D. Hunt, 'Chayanov's Model of Peasant Household Resource Allocation', *J. Peasant Stud.* 6 (1979), 247-85.

<sup>41</sup> cf. Dion. Hal. *Ant. Rom.* 9. 51. 6.

<sup>42</sup> See J. E. Powell, *The Rendel Harris Papyri* (Cambridge, 1936), pp. 2-5; 'Musonius Rufus: *EI IANTA TA PINOMENA TEKNA OPEITEON* in P. Harr. 1', *APF* 12 (1936), 175-8.

<sup>43</sup> *Div. Inst.* 6. 20. 24-5: 'for parricides bewail their straitened means and assert that they cannot provide for bringing up several children: as if wealth is truly in the power of its possessors, or as if God does not daily make the rich poor and the poor rich'.

exaggerated the frequency with which they occurred.<sup>44</sup> The latter prefaces his instructions, it will be recalled, with the observation that 'your question, which pertains to free-born children who were exposed and then brought up in slavery by those who raised them, has often been discussed' (*Ep.* 10. 65–6). It would, it might be added, be equally credulous to presume that exposure ceased upon its formal abolition in A. D. 374 (*Cod Theod.* 9. 14. 1), for there was no comparable effort to mitigate the circumstances which induced families to resort to this expedient.

This is not to imply that among the Roman peasantry the use of various family limitation techniques has a monocausal explanation. There are always children who are simply unwanted, and further in both Greek and Roman society the upper classes adopted this strategy to avoid dispersion of their estates.<sup>45</sup> We are certainly entitled to believe that the same consideration influenced smallholders whose properties could not further be divided and still sustain a nuclear family.<sup>46</sup> Nevertheless, in Italy at least the incidence of malnutrition-related exposure and infanticide seems to have been of

<sup>44</sup> For additional references to abortion, exposure and infanticide among the poor or as general practice, cf. Philo, *Spec. Leg.* 3. 110–19; *Virt.* 131; Plut. *Mor.* 497E; Justin Martyr, *Apol.* 27, 29; Athenagoras, *Leg. pro Christ.* 35. 6; Clem. Al. *Παιδαγωγός* 2. 10. 96. 1, 3. 3. 21. 5; Tert. *Apol.* 9. 6–8; *Ad Nat.* 1. 15. 3–4, 16. 10; Min. Fel. *Oct.* 30. 2, 31. 4; Lactant. *Div. Inst.* 5. 9. 15; Hieron. *Ep.* 22. 13. On the sale of *ingenui* see P. A. Brunt, *JRS* 48 (1958), 167–8, and to the list of references given there add *Cod. Iust.* 4. 43. 2. The extent to which family limitation methods were practised in Roman society, and their historical significance, have been frequently discussed in recent years; cf. A. C. van Geytenbeek, *Musonius Rufus and Greek Diatribe*, trans. B. L. Hijmans, Jr (Assen, 1963), pp. 78–89; M. K. Hopkins, 'Contraception in the Roman Empire', *Comp. Stud. Soc. & History* 8 (1965–6), 124–51; P. A. Brunt, *Italian Manpower*, pp. 146–54; P. Salmon, *Population et dépopulation dans l'empire romain* (Brussels, 1974), pp. 61–76.

<sup>45</sup> cf., *inter alia*, Pl. *Resp.* 372c; *Leg.* 744d–e; Polyb. 36. 17; Muson. fr. 15B (ed. Hense); Tac. *Hist.* 5. 5.

<sup>46</sup> A partible system of inheritance, with equal division of the estate among all the sons, seems to have prevailed throughout archaic and classical Greece. The unhappy condition of our sources, however, permits only an occasional glimpse of the resultant tension within the family, while overt displays of the pressure to control the number of their offspring which many heads of household must have experienced are rarer still – as anyone who reads P. Walcot, *Greek Peasants, Ancient and Modern* (Manchester, 1970), pp. 45–56, or A. Burford-Cooper, 'The Family Farm in Greece', *CJ* 73 (1977/8), 162–75, will readily appreciate. Roman law, by means of such practices as *bonorum possessio contra tabulas testamenti* and *querella inofficiosi testamenti*, also encouraged partibility, indeed mandated it in the event of intestacy, which D. Daube, 'The Preponderance of Intestacy at Rome', *Tulane Law Review* 39 (1964–5), 253–62, has persuasively argued to have been the rule rather than the exception. If strictly applied, as in Columella, *Rust.* 4. 3. 6, the impact of such regulations upon the Roman peasantry would have been grievous indeed. Law and custom, however, do not necessarily coincide, and in Dio Chyrs. *Or.* 7. 10 we may observe one of several possible compromises between the conflicting demands of law, natural sentiment and economic necessity: the co-residence of two families on one plot of land (a joint-family household). If the ancient evidence for this problem is intractable (the Roman is worse than the Greek), that from peasant societies of more recent vintage may be profitably examined to gauge its dimensions. The classical historian might begin with G. Homans, *English Villagers of the Thirteenth Century* (Cambridge, Mass., 1941); H. J. Habakkuk, 'Family Structure and Economic Change in Nineteenth-Century Europe', *J. Econ. Hist.* 15 (1955), 1–12; P. Bourdieu, 'Célibat et condition paysanne', *Etudes rurales* 5–6 (1962), 32–135; 'Les stratégies matrimoniales dans le système de reproduction', *Annales (ESC)* 27 (1972), 1105–27; M.-C. Pingaud, 'Terres et familles dans un village du Châtillonnais', *Etudes rurales* 42 (1971), 52–104; L. K. Berkner, 'Inheritance, Land Tenure and Peasant Family Structure: A German Regional Comparison', in J. Goody, J. Thirsk and E. P. Thompson (eds.), *Family and Inheritance in Rural Western Europe: 1200–1700* (Cambridge, 1976), p. 71–95; 'Peasant Household Organization and Demographic Change in Lower Saxony (1689–1766)', in R. Lee (ed.), *Population Patterns in the Past* (New York, 1976), pp. 53–69; and L. K. Berkner and F. F. Mendels, 'Inheritance Systems, Family Structure, and Demographic Patterns in Western Europe, 1700–1900', in C. Tilly (ed.), *Historical Studies of Changing Fertility* (Princeton, 1976), pp. 209–23.

sufficient magnitude that late in the first century A.D. the imperial government, following local precedent, designed a programme to counteract it: the celebrated and much-discussed *alimenta*.<sup>47</sup>

The dynamics of this project are clear, even if many details remain shrouded in obscurity. In brief, representatives of the imperial fisc first estimated the number of indigent children whom it was desirable or feasible to assist in a given community.<sup>48</sup> Thereafter they established enough loans among landowners in the neighbourhood that the interest, five per cent per annum accruable to the municipal treasury, would yield revenue sufficient to purchase for the children a subsistence diet of bread, wine, oil and salt. At Veleia, the best-known of the 51 programmes so far on record (*CIL* 11. 1147), the distribution took the form of cash payments – sixteen sesterces a month to the parents of legitimate boys, twelve for legitimate girls and illegitimate boys, and ten for illegitimate girls.<sup>49</sup>

Since this outline, bare as it is, betrays the evident intent of the scheme (its economic stimulus can be readily contrasted, for example, with the very different focus of the Augustan programme to encourage larger families), the frequent misrepresentation of the *alimenta* in contemporary scholarship is a source of regrettable surprise. Historians have repeatedly asserted that the object of the *alimenta* was an increase in the Italian birth-rate,<sup>50</sup> or the rejuvenation of an ostensibly depressed rural economy through massive injections of capital.<sup>51</sup> In both instances, nothing could be further from the truth. With regard to the latter claim, it has been sensibly protested on the one hand that in many individual cases the loans were too small to have had much impact; and on the other that the sudden investment of a large capital sum in a self-contained agrarian economy would produce depressed interest rates and inflated land prices.<sup>52</sup> Lucrative opportunities for investment, in either event, would have been severely diminished.

The notion that the architects of the *alimenta* hoped thereby to stimulate the Italian birth-rate is no less dubious, for if such was the design, the machinery harboured a fatal defect in its lack of incentive. It has already been noticed that the monthly payments at Veleia sufficed only for subsistence: it was not, then, the government's

<sup>47</sup> It is unclear whether the initiative was taken by Nerva (*Epit. de Caes.* 12. 4) or Trajan (S. H. A. *Hadr.* 7. 8; *Pert.* 9. 3).

<sup>48</sup> *Epit. de Caes.* 12. 4: 'he [Nerva] ordered girls and boys born to indigent parents in the municipalities in Italy to be brought up at public expense'.

<sup>49</sup> If, as J. Szilágyi, 'Prices and Wages in the Western Provinces of the Roman Empire', *AAntHung.* 11 (1963), 336–7; and R. Duncan-Jones, *Econ. Rom. Empire*, pp. 145–6, 345–7, have recently argued, the market-price of wheat in Italy of the first century A.D. was regularly HS 3–4/*modius*, then the allowance for *puellae* was equivalent to 243–324 kg/year (36–48 *modii*) – which is again in conformity with the modern definition of subsistence. For the mechanics of the *alimenta*, and particularly for the complex and only partially comprehensible estate valuation and loan allocation procedures, see now P. Veyne, 'La table des Ligures Baebiani et l'institution alimentaire de Trajan', *MEFR* 69 (1957), 81–135; 70 (1958), 177–241; F. C. Bourne, 'The Roman Alimentary Program and Italian Agriculture', *TAPhA* 91 (1960), 47–75; and R. Duncan-Jones, *supra* pp. 294–315. To the list of 49 programmes compiled by Duncan-Jones (p. 340), add now Trebula Suffenas (*AE* 1972, 167) and Cherchio (*AE* 1975, 295).

<sup>50</sup> Thus recently P. Veyne, *MEFR* 70 (1958), 228; 'Les "Alimenta" de Trajan', *Les empereurs romains d'Espagne* (Paris, 1965), pp. 169–70; R. Duncan-Jones, 'The Purpose and Organisation of the Alimenta', *PBSR* n.s. 19 (1964), 127, 130; *Econ. Rom. Empire*, p. 295; P. Garnsey, 'Trajan's Alimenta: Some Problems', *Historia* 17 (1968), 381; P. A. Brunt, *Italian Manpower*, p. 5; P. Salmon, *Population et dépopulation*, p. 57.

<sup>51</sup> cf. F. C. Bourne, *TAPhA* 91 (1960), 68–72; G. B. Ford, 'The Letters of Pliny the Younger as Evidence of Agrarian Conditions in the Principate of Trajan', *Helicon* 5 (1965), 386–7.

<sup>52</sup> cf. P. Veyne, *Emp. rom. d'Espagne*, p. 171; and R. Duncan-Jones, *Econ. Rom. Empire*, pp. 306–7.

intent to make child-rearing a profitable enterprise. Still more to the point, not all of the children theoretically eligible for participation in a given programme seem necessarily to have been enrolled. This is the clear implication of the strikingly uneven pattern of dispensation at Veleia, where 264 boys were subvented but only 36 girls. This distribution could hardly, as has sometimes been suggested, reflect the rate of female infanticide. It is rather, as Duncan-Jones has pointed out, intrinsically more likely that only one or two children could be enrolled from any given family, and that sons would naturally be preferred to daughters since they commanded a higher allowance.<sup>53</sup> Without this minimum guarantee of universal participation, however, an institution meant to encourage more frequent births among the rural poor would have been hopelessly ineffective.

The ancient evidence as well for once is something more than merely problematic. The unequivocal declaration of the fourth-century *Epitome de Caesaribus* that Nerva directed the sons and daughters of impoverished Italian families to be reared at public expense (see n. 48 above) is in conformity with two contemporary items, the preamble to the Veleian inscription and a lengthy passage in the *Panegyricus* of the younger Pliny. Written in the bald language of an official document, the Veleian text begins with the statement 'liens on properties in the amount of 1,044,000 sesterces, so that through the *indulgentia* of the best and greatest *princeps*, *imperator* Caesar Nerva Trajan Augustus Germanicus Dacicus, boys and girls may receive maintenance...'.<sup>54</sup> Pliny, meanwhile, in his effusive account of another public charity, Trajan's inclusion of 5,000 male children on the list of the *plebs frumentaria* (*Pan.* 26–8), makes repeated allusion to the emperor's desire to support the children of the poor. 'You ordered, however, every child to be admitted and registered before they should see or approach you, so that henceforth, having assumed the burden of their upbringing, they should know you *ab infantia* as the Father of the people; that those who grow up on your behalf should grow at your expense, should proceed from your *alimenta* to your *stipendia*, all owing as much to you alone as each owes to his own parents' (*Pan.* 26. 3).<sup>55</sup> This passage, so typical of Pliny's rhetoric, should dispense with any remaining doubt: the principal if not the sole object of the Trajanic *alimenta* was to encourage poor families to rear ingenuous children who might otherwise be exposed or sold into slavery.<sup>56</sup> In this it precisely paralleled the later Constantinian programme (*Cod. Theod.* 11. 27. 1–2), although the motives of the two *principes*—if we accept Pliny's claims (*Pan.* 26. 3, 28. 5) that Trajan hoped thereby to expand the pool of military recruits—were considerably different.

#### IV

If the Roman government thus took intermittent notice of the desperate economic condition of the peasantry, and even introduced an occasional palliative, it must nevertheless be conceded that its intrusions upon their affairs were not always so

<sup>53</sup> R. Duncan-Jones, *Econ. Rom. Empire*, p. 301. This may also account for the competition of private (*CIL* 14. 4450) and public (14. 298, 4664) initiatives at Ostia.

<sup>54</sup> cf. also the fragmentary inscription *CIL* 9. 5825 (Auximum).

<sup>55</sup> cf. *Pan.* 26. 5–6, 27. 1 and 28. 5.

<sup>56</sup> A point so far rendered explicit only by W. E. Heitland, *Agricola* (Cambridge, 1921), p. 273; and U. Kahrstedt, *Kulturgeschichte der römischen Kaiserzeit*, 2nd ed. rev. (Bern, 1958), pp. 56–7. Among scholars who have examined the *alimenta* in depth, the accounts of V. A. Sirago, *L'Italia agraria sotto Traiano* (Louvain, 1958), pp. 276–89; and A. R. Hands, *Charities and Social Aid in Greece and Rome* (London, 1968), pp. 108–15, offer the most prudent discussions of this question.

happily inspired, and regularly proved ruinous. The ceaseless venality of Rome's public servants is too well known to require comment,<sup>57</sup> but one might legitimately query whether the peasantry would have typically regarded the Roman legions as their guardians or chief nemeses. The maintenance of a standing army meant for most an unrelenting fiscal drain upon already slender resources, and involved many in personal contact with a soldiery whose behaviour too often ranged from crudely extortionate to openly murderous.

In the pandemic breakdowns of authority which periodically punctuate Roman history it is the army's devastation of cities which arrests our attention; the obliteration, for example, of Cremona in A.D. 69 (Tac. *Hist.* 3. 32–4) or Lugdunum in 197 (Hdn. 3. 7. 7). Still, widespread civil strife such as that which attended the dissolution of the Republic or the disintegration of the Empire in the third century A.D. (to cite only the two most prominent instances of the phenomenon) inflicted no less intolerable and frequently lethal hardship upon the unfortunate rustics caught up in the crisis. There is no material difference between the contents of Cicero's verbal diatribe against the brothers Antonii in 44 B.C. and those of a letter falsely attributed to Aurelian three centuries later.<sup>58</sup> Whether either is strictly accurate is of little import; incidental references to the havoc wrought by Roman armies in times of civil war are commonplace in our literary sources. The abortive invasion of Italy launched by Maximinus Thrax in A.D. 238 is a typical example. Herodian tells us that, informed at his winter quarters in Sirmium of the proclamation of the Gordiani (7. 2. 9), Maximinus departed for Italy in such haste that his inadequately supplied army was compelled to forage for food *en route* (7. 8. 11). At Emona he found the city completely deserted and bereft of provisions (8. 1. 4), 'and the army, being pierced by hunger at the very outset, was discouraged' (8. 1. 5). The latter remark suggests that Maximinus had effected his passage through the Drave valley without difficulty<sup>59</sup> – and since the harvest season was still some months away,<sup>60</sup> it follows that he exacted what he needed from the towns and villages which lay in his path.

There was to be no occasion for such opportunism when Maximinus approached

<sup>57</sup> For a sobering introduction to this topic see P. A. Brunt, 'Charges of Provincial Maladministration under the Early Principate', *Historia* 10 (1961), 189–227, who has argued convincingly that the transition from Republic to Principate did little to ameliorate Rome's abusive standards of provincial administration.

<sup>58</sup> Cic. *Phil.* 3. 31: 'he empties storerooms, and slaughters herds of cattle and whatever other beasts he obtains; his soldiers feast, while he himself, imitating his brother, besots himself with wine. The fields are laid waste and villas plundered, mothers of families, virgins and free-born boys are carried off and handed over to the soldiers. These same things, wherever he led his army, were done by Marcus Antonius'; S. H. A. *Aurel.* 7. 5–6: 'if you wish to be a tribune – rather, if you wish to stay alive, restrain the hands of your soldiers. No one should seize another's fowl or lay hands upon his sheep. No one should carry off grapes, thresh out corn, extort oil, salt or firewood: each should be content with his own allowance. The soldiers should make their living from the spoils of the enemy, not from the tears of the provincials.'

<sup>59</sup> The principal military highway from Sirmium to Aquileia; see A. Mócsy, 'Pannonia', *RE* suppl. 9 (1962), 661.

<sup>60</sup> If the chronology of events in A.D. 238 remains a vexed problem, this point at least seems secure; cf. P. W. Townsend, 'The Chronology of the Year 238 A.D.', *YCIS* 1 (1928), 231–8; C. E. van Sickle, 'Some Further Observations on the Chronology of the Year 238 A.D.', *CPh* 24 (1929), 285–9; G. Vitucci, 'Sulla cronologia degli avvenimenti dell' 238 d. C.', *RFIC* 32 (1954), 372–82; R. A. G. Carson, *Coins of the Roman Empire in the British Museum*, vi (London, 1962), 98, 101; and X. Lorient, 'Les Fasti Ostiensis et les Dies Imperii de Gordien III', *Mélanges d'histoire offerts à William Seston* (Paris, 1974), pp. 297–312; 'Les premières années de la grande crise du III<sup>e</sup> siècle: De l'avènement de Maximin le Thrace (235) à la mort de Gordien III (244)', in H. Temporini and W. Haase (eds.), *Aufstieg und Niedergang der römischen Welt*, II, 2 (Berlin, 1975), 720–2.

Aquileia. In advance of his arrival the populace of the surrounding *oppida* and *vici* took refuge within its walls, and as at Emona the entire district was denuded of its resources. Since, however, these were also laid up inside the city, the tactic simultaneously discomfited Maximinus and enabled it to resist a siege (8. 2. 4–6, 5. 3). In the sequel, when the town refused to surrender on terms, Maximinus ordered its vaunted orchards and vineyards to be systematically destroyed in reprisal (8. 4. 5)<sup>61</sup> – a serious error, as it merely aggravated the shortages in his own camp, and hastened his death. Once the army began to go hungry the Emperor was quickly murdered by a disgruntled element among the soldiery (8. 5. 3–9).

Herodian, and the author of the *Historia Augusta* as well, recount at length the jubilation which swept over Italy at the news of the tyrant's death;<sup>62</sup> regrettably, neither registers the aftermath, the ruin and privation which confronted the inhabitants of Aquileia, Emona and the other communities and districts in Maximinus' path. Nor does any literary text record that, even during the halcyon days of the Antonine emperors, Roman legions in transit might precipitate a famine in the areas through which they passed, as at Lete in Macedon (*AE* (1921), 1) or Aelium Coela in the Thracian Chersonese (*AE* (1924), 82). When the Roman armies were constrained to live off the land, we may fairly presume such desolation to have been the usual sequel – and it was the peasantry which bore the brunt of the suffering.<sup>63</sup>

Even if their yield-ratios had been significantly higher, however, few localities could have amassed a surplus sufficient to satisfy the needs of a large army. But this was not the context in which the soldiery earned their unsavoury reputation for brutality and rapacity; the scattered but persistent complaints of peasants throughout the Empire are directed instead at the exactions of individual soldiers and detached units. In A.D. 49, for example, the prefect of Egypt issued an edict commanding that 'those who are travelling through the nomes – soldiers, cavalrymen, orderlies, centurions, military tribunes and the like – shall neither take anything nor requisition transport if they do not have my permits, and even the latter shall receive shelter only...'.<sup>64</sup> This was not the first attempt to curb the extortionate activities of the Egyptian garrison, nor would it be the last,<sup>65</sup> and the lingering suspicion that all such edicts ultimately proved unenforceable can be independently confirmed. One papyrus in particular, a series of ledger entries inscribed during the second century A.D., routinely records cash outlays to a number of soldiers and military police agents in addition to a large disbursement under the general heading of 'extortion'.<sup>66</sup>

Egypt was never atypical in this respect,<sup>67</sup> but conditions seem everywhere to have worsened dramatically in the post-Severan period. The villagers of Thracian

<sup>61</sup> Extensive damage also ensued during the course of the siege itself (Hdn. 8. 4. 8).

<sup>62</sup> Hdn. 8. 6. 5–8; S. H. A. *Max.* 24. 4–8.

<sup>63</sup> In A.D. 69 the eminent Othonian officer Suetonius Paulinus advised that emperor to decline battle with the Rhine legions which had invaded Italy in support of L. Vitellius' bid for the throne. His reasoning, in this context, is especially revealing: 'Italy north of the Po, shut in by the Alps and without any possibility of relief from the sea, has been exhausted by the very passage of their army; nowhere is there any corn for their forces, and an army cannot be maintained without supplies' (Tac. *Hist.* 2. 32).

<sup>64</sup> *OGI* 665 = *IGRom.* 1. 1262 = H. G. Evelyn White and J. H. Oliver, *The Temple of Hibis in El Khargeh Oasis, Part II: Greek Inscriptions* (New York, 1938), pp. 1–19 = *SEG* 20. 694 = Smallwood 382.

<sup>65</sup> cf., *inter alia*, *PLondon* 1171 = Abbot-Johnson 162 = Smallwood 381 (A.D. 42); and *PSI* 446 = A. S. Hunt and C. C. Edgar, *Select Papyri*, II (Cambridge, Mass., 1934), no. 221 (A.D. 133–7).

<sup>66</sup> See L. Robert, 'Sur un papyrus de Bruxelles', *RPh* 17 (1943), 111–19.

<sup>67</sup> cf. *OGI* 609 = *IGRom.* 3. 1119 = Abbott-Johnson 113 (Phaena, Syria).

Scaptopara, unluckily situated in the immediate neighbourhood of two military encampments, complained to Gordian III that 'soldiers who are being sent elsewhere forsake their proper routes and come to us, and compel us to provide them with hospitality and supplies without compensation'.<sup>68</sup> These peasants threatened to abandon their homes if their pleas went unanswered; similarly the exasperated tenants of an imperial estate in Lydia,<sup>69</sup> whose grievances against the military constitute merely one of a litany of such complaints from Asia Minor.<sup>70</sup> Indeed, the abuses of the soldiery have left such an indelible legacy of fear and hatred in the sources for the third century A.D. that Rostovtzeff could postulate, in the tenth and eleventh chapters of his *Social and Economic History of the Roman Empire*, that 'the army fought the privileged classes, and did not cease fighting until these classes had lost all their social prestige and lay powerless and prostrate under the feet of the half-barbarian soldiery'.<sup>71</sup> There was nothing privileged, however, about the residents of Scaptopara; on the contrary, this was the sort of stock from which Rostovtzeff presumed the army to be drawn. In truth, there is a simpler, more economic explanation. Our texts allude repeatedly to the arbitrary seizure of supplies and work animals. Few *rustici*, it should now be clear, had the capacity indefinitely to sustain such depredations, so delicately balanced was the relationship between production and consumption in the Roman world. Any interruption of the mechanism might provoke a crisis: the birth of an additional child might overtax the resources of a peasant family, the demands of the soldiery those of an entire community. While the *paterfamilias* could resort to exposure or infanticide, however, local magistrates and councils could do little more than petition and complain.

## V

In every generation, a double handicap sentenced the overwhelming majority of those who inhabited the *imperium Romanum* to a precarious hand-to-mouth existence. With such select exceptions as the *ager Campanus* and *ager Leontinus*, districts whose climates and soil were exceptionally favoured, Roman agriculture was unable to generate consistent surpluses and occasionally suffered serious failures, yet the inadequacy of Roman land transport effectively condemned that majority to self-sufficiency. The physician Galen, writing against the backdrop of the *bellum Marcomannicum* during the reign of Marcus Aurelius, has brilliantly captured the psychological insecurity which this environment spawned, and the desperate circumstances to which the peasantry might be reduced as a result.<sup>72</sup>

For those who live in the cities, in accordance with their habit of procuring sufficient grain at the beginning of summer to last for the entire coming year, took from the fields all the wheat,

<sup>68</sup> CIL 3. 12336 = *IGRom.* 1. 674 = Abbott-Johnson 139 (A.D. 238).

<sup>69</sup> Abbott-Johnson 142.

<sup>70</sup> cf. CIL 3. 14191 = *OGI* 519 = *IGRom.* 4. 598 = Abbott-Johnson 141 (A.D. 244/7); Abbott-Johnson 143, 144.

<sup>71</sup> *SEHRE*<sup>2</sup>, p. 495, but the theme is recurrent; cf. pp. xiii, 459, 463–6, 495–501. For the evidence so far reviewed, cf. the masterly notes to these chapters, and R. MacMullen, *Soldier and Civilian in the Later Roman Empire* (Cambridge, Mass., 1963), pp. 85–9. The problem of civilian attitudes to the Roman army has recently been resumed by G. Alföldy, 'Soziale Konflikte im römischen Kaiserreich', *Heidelberger Jahrbücher* 20 (1976), 111–25; and F. Kolb, 'Der Aufstand der Provinz Africa Proconsularis im Jahr 238 n. Chr.', *Historia* 26 (1976), 440–78; 'Wirtschaftliche und soziale Konflikte im römischen Reich des 3. Jahrhunderts n. Chr.', *Bonner Festgabe Johannes Straub* (Bonn, 1977), pp. 277–95.

<sup>72</sup> *Περὶ εὐχυρίας καὶ κακοχυρίας τροφῶν* (K. G. Kühn, *Medic. Graec. Opera*, vi, pp. 748–9). For the date, see J. Ilberg, 'Ueber die Schriftstellerei des Klaudios Galenos', *RhM* 51 (1896), 187.

barley, beans and lentils, leaving the other legumes (which they call 'pulses') to the *rustici*, although they even carted off no small portion of these to the city as well. Consequently the peasantry of these districts, having consumed during the winter whatever was left, were literally compelled for the rest of the year to feed on noxious plants, eating the shoots and tendrils of trees and shrubs, the bulbs and roots of unwholesome plants...

It may fairly be concluded that the spectre of starvation haunted the *imperium Romanum*, an imminent and frequently deadly pestilence.<sup>73</sup>

*Heidelberg & Minneapolis*

J. K. EVANS

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