



## Census Records of the Later Roman Empire

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# CENSUS RECORDS OF THE LATER ROMAN EMPIRE

By A. H. M. JONES

There survive from a number of places in Western Asia Minor and the islands of the Aegean inscriptions recording census registrations. They are undated, but were probably engraved in the late third or early fourth century A.D., when Diocletian and his colleagues and successors are known to have been active in carrying out censuses to serve as the basis of their new system of taxation. All are fragmentary, but some are of sufficient length to yield results of some statistical value on the distribution of landed property, on the density of the agricultural population, and on the proportion of slave to free labour. In view of the extreme paucity of any statistical data for the ancient world they are worth analysis.

These records are drawn up on different systems and each requires separate study. They are, however, all based on certain general principles laid down by imperial enactments. They record quantities of land and of persons and animals on the land. In some inscriptions land is recorded by its agricultural use and areas; arable, vineyard, pasture (these all in *iugera*; one *iugerum* =  $\frac{5}{8}$  acre), and olives (these by the individual tree). In one small fragment from Lesbos <sup>1</sup> arable, vineyard, and olives are each divided into two categories according to their quality. In other inscriptions the land is recorded in *iuga*. The *iugum* was a unit of assessment and corresponded to a varying quantity of land according to its use and quality. The Syro-Roman lawbook <sup>2</sup> preserves the schedule established by Diocletian for Syria and still in use there in the late fifth century. Here 1 *iugum* = 20 *iugera* of 1st class arable = 40 *iugera* of 2nd class arable = 60 *iugera* of 3rd class arable = 5 *iugera* of vineyard = 220 *perticae* (= 1.1 *iugera*) of old olive trees = 450 *perticae* (= 2.25 *iugera*) of mountain olive trees. In Asia Minor the schedule in the early fourth century seems to have been very different. This emerges from an inscription of Thera <sup>3</sup> where an original record in *iugera* of arable and vineyard and in olive trees has been later converted into *iuga*. It is a record of farms lately, it would seem, in the possession of one Paregorius and now divided among his heirs. The original record may be tabulated as follows:—

Name of Farm	Arable (in iugera)	Vineyard (in iugera)	Olive trees	Stock
Property of Euphrosyne, daughter of Paregorius				
A	40	2½ ¼	3	—
B	28½	103	67	—
C	30	—	—	—
D	18	—	27	—
Property of Paregorius according to the declaration of Lucianus				
E	35½	—	30	2 oxen 1 ass 8 sheep
Property of the heirs of Paregorius deceased according to the registration of Scepticus: Euporia, Paregorius, Sophronius				
F	60	50	143	—
G	26	8	18	—
H	138	30	286	—
I	6	—	—	—
J	70	10½	6	—

At the end of l. C, which is shorter, have been later inserted the words ' they make  $1\frac{1}{2} \frac{1}{3} \frac{1}{4} \frac{1}{6}$  *iuga* or *capita* '. At the end of l. D, which is also short, is inserted ' it makes  $\frac{1}{3} \frac{1}{30} \frac{1}{300}$  *iuga* or *capita* ', and in the margin on the right of G and H, '  $8\frac{1}{3}$  *iuga* or *capita* '.<sup>4</sup>

André Déléage, who analysed this inscription in his *Capitation dans le Bas Empire*

<sup>1</sup> IG XII, ii, 79. This was presumably a refinement found too complicated and soon abandoned.

<sup>2</sup> Riccobono, *Fontes iuris Romani*<sup>2</sup> II (1940), pp. 795-6 (§ 121).

<sup>3</sup> IG XII, iii, 343.

<sup>4</sup> (C)  $\epsilon\chi\omicron\upsilon\sigma\iota\nu \kappa\zeta \alpha \langle \gamma' \mu\bar{\varsigma} : (D) \epsilon\chi\iota \kappa\zeta \epsilon\lambda' \tau'$  : (G and H)  $\kappa\zeta \eta\mu\epsilon'$

173 ff., failed to perceive the significance of the third entry, and thought that the first applied to farms A, B, C, and second to farm D. It is, however, more probable that each note applies to the property of one owner, the first to farms A–D, the second to farm E, and the third to farms F–J. The position of the first two notes, the one beside and the other over the property to which they respectively refer, is due to exigencies of space.

One figure, as M. Délage observed, must be wrong, either an engraver's error or a mistake by the modern copyist. If the 103 *iugera* of vineyard in farm B is correct, no reasonable schedule of values will work; for vineyard must have been much more valuable than arable. If this figure be corrected to 9 $\frac{1}{2}$  (which is epigraphically plausible)<sup>5</sup> it is possible to make a reasonable guess at the approximate schedule. The problem may be summarized as follows:—

Arable		Vineyard		Olives		Stock		iuga
116 $\frac{1}{2}$	+	12 $\frac{1}{2}$	+	97	+	0	=	1 $\frac{1}{2}$ $\frac{3}{4}$ $\frac{1}{4}$ (1·8551)
35 $\frac{5}{8}$	+	0	+	30	+	2 oxen		
						1 ass		
						8 sheep	=	$\frac{1}{5}$ $\frac{1}{3}$ $\frac{1}{6}$ (·2366)
300	+	98 $\frac{1}{11}$	+	453	+	0	=	8 $\frac{1}{5}$ (8·0202)

If one *iugum* be equated with 100 *iugera* of arable or 24 *iugera* of vineyard or 480 olive trees, the sum works out approximately (leaving about  $\frac{1}{7}$  *caput* or *iugum* for the animals on farm E), though it seems impossible to reconstruct the arithmetical processes whereby the *tabularius* reached his curious fractions. The figures must at any rate be of this order of magnitude.

The persons and animals are similarly in some inscriptions recorded individually in detail, in others converted into *capita*. The *caput* was, like the *iugum*, an ideal unit of assessment and was equal in value to the *iugum*, as is shown by one inscription in which the numbers of *iuga* (ζύγα) and *capita* (κεφαλαί) on each farm are added together to a total of *iuga vel capita* (ζυγοκεφαλαί).<sup>6</sup> Animals were evidently rated at small fractions if 2 oxen, 1 ass, and 8 sheep added up to about  $\frac{1}{7}$  of a *caput*. Unfortunately there is only one clue in the inscriptions to indicate how many human beings went to a *caput*. A declaration from Hypaepa<sup>7</sup> runs: 'Aurelius Synodius son of Dracontius, Hypaepene resident in my own house—myself, aged 20: total 1.' Two early-fourth century imperial constitutions<sup>8</sup> clearly imply that a woman like a man was rated at a full *caput*, in the areas at any rate to which these constitutions applied, that is Illyricum and Oriens. In Egypt it would seem that according to immemorial custom only males were registered.<sup>9</sup> On the other hand a constitution of 386<sup>10</sup> addressed to the praetorian prefect of the East announces that, whereas formerly one man or two women were reckoned as one *caput*, four women or two-and-a-half men now count as such, and orders the prefect to apply this rule to certain cities of the Pontic diocese then being reassessed by a *peraequator*. We cannot be certain what scale of values applied in our inscriptions, but it is likely to have been one *caput* = 1 man = two women. In that case, assuming the sexes were equally balanced, one *caput* would on an average represent 1 $\frac{1}{3}$  persons. Small children, down to two years old, are registered in some inscriptions<sup>11</sup> but it is certain that they were not technically *censiti*. The age at which they became

<sup>5</sup> The printed text gives PF; ΘΓ' would mean 9 $\frac{1}{2}$ .

<sup>6</sup> IG XII, iii, 180, as read by Délage, *La Capitation dans le Bas Empire* pp. 190–4.

<sup>7</sup> Keil and Premierstein, 'Dritte Reise in Lydien,' *Denkschr. Ak. Wien* 1914, no. 85.

<sup>8</sup> 'Table of Brigetio' (311), Riccobono, *Fontes iuris Romani* 1<sup>2</sup> (1940) 93, 'ab annonario titulo duo capita excusent, id est tam suum quam uxoris suae,' *Cod. Theod.* vii, xx, 4 (325), 'duo capita excusaturis, id est suum atque uxoris.' The first was published at Brigetio in Pannonia (where the inscription was found), the second at Antioch (the title of the recipient Maximus is wrongly given as PU in the Codex: he was probably *vicarius Orientis*, see Seecck, *Regesten*, p. 118).

<sup>9</sup> This was the rule of the λαογραφία of the principate (Wilcken, *Grundzüge*, p. 189). That it remained the rule after Diocletian is a fairly certain inference from the fact that the nine persons declared by Aurelius Sacaon in 310 (Wilcken, *Chrestomathie* 210, cf. also *SB* 7673) are all males. The corresponding tax in early Arab times, *andrisimós* (the name is now proved by *P. Ryl.* iv, 658, to date back to the fourth century), certainly fell on males only (see Bell in the introduction to *P. Lond.* iv, 1419).

<sup>10</sup> *Cod. Theod.* XIII, xi, 2.

<sup>11</sup> IG XII, iii, 343, 346; Keil and Premierstein, l.c. (see note 7).

liable to tax seems to have varied in different districts; in Syria it was 12 for females and 14 for males. There was also an upper age limit, which was 65 for both sexes in Syria.<sup>12</sup>

All the census records save one which are preserved are concerned with the estates of landlords who were not cultivators. It is a matter of some importance to determine what categories of persons were registered on these estates. Those recorded include rural slaves and free tenants. Rural slaves could in the early fourth century be sold apart from the land they cultivated, but if so had to be entered in the census of their new owner<sup>13</sup> and could not be withdrawn by the owner from agricultural employment.<sup>14</sup> In the inscriptions they are sometimes recorded on the separate farms<sup>15</sup> but sometimes segregated under a special heading, either with a note of their domicile<sup>16</sup> or under the rubric 'on the land'.<sup>17</sup> From 371 rural slaves were tied to the actual land which they cultivated and could only be sold with it.<sup>18</sup> Free tenants (*coloni*) were registered in their landlord's census only if they owned no land of their own, and in this case the landlord was (from 371) responsible for collecting the tax due on their *capita*. If on the other hand a *colonus* owned even the smallest plot of land he was registered independently ('proprio nomine') in the census and his capitation tax was (after as before 371) collected by a public official.<sup>19</sup> It must therefore be borne in mind that the *capita* registered in our lists do not necessarily represent all the manpower employed on the land, since some farms are likely to have been let to adjacent small freeholders. Tenants entered on the census ('coloni adscripti censibus') of their landlord were tied to their farms, and are accordingly always entered on individual farms on the lists. Other tenants were apparently entered on their village census ('adscripti vico'),<sup>20</sup> but not tied to the farm they leased.

One further point needs noting. In registers which reckon in *iuga* and *capita* only the landlord's animals appear separately rated, or sometimes totalized with his slaves.<sup>21</sup> Tenants' animals are, as appears from the small fractions recorded, added to the *capita* of their owners. Similarly in census lists which record individuals some animals (the landlord's) are recorded with the slaves, some with the families of the tenants.<sup>22</sup> Tenant's slaves, if any, would presumably be on the same principle included in their owner's *capitatio*: no such slaves appear on the detailed registers. These facts are unlikely greatly to affect the statistical value of *capita* either in reckoning the number of persons they represent or the proportion

<sup>12</sup> *Dig.* I, xv, 3. This citation from Ulpian was presumably preserved by the compilers of the *Digest* because still valid. The edict of Aurelius Optatus (*SB* 7622) shows that Diocletian in 297 laid down lower and upper age limits for Egypt, but they are not known, save that in Aurelius Isidore's declaration (*SB* 7673) a boy of 3 is exempt (ἀτέλης) but in Aurelius Sacaon's (*Chr.* I, 210) one of 12 pays tax (ὑποτέλης) and a man of 55 is still liable.

<sup>13</sup> *Cod. Theod.* XI, iii, 2 (327), 'mancipia adscripta censibus intra provinciae terminos distraherentur, et qui emptione dominium nacti fuerint inspiciendum sibi esse cognoscant.'

<sup>14</sup> *Cod. Theod.* VII, I, 3 (341), 'quicumque militum ex nostra auctoritate familias suas ad se venire meruerint, non amplius quam coniugia liberos servos etiam de peculio castrensi emptos neque adscriptos censibus ad eosdem excellentia tua dirigi faciat.'

<sup>15</sup> At Chios (Déléage, o.c., pp. 182-6) and Lesbos (*IG* XII, ii, 76d, 78c).

<sup>16</sup> At Tralles (*BCH* 1880, 336-8).

<sup>17</sup> At Thera (*IG* XII, iii, 343).

<sup>18</sup> *Cod. Just.* XI, xlviii, 7 (371), 'quemadmodum originarios absque terra ita rusticos censitosque servos vendi omnifariam non licebit.'

<sup>19</sup> *Cod. Theod.* XI, I, 14 (371), 'penes quos fundorum dominia sunt, pro his colonis originalibus quos in locis isdem census esse constabit vel per se vel per actores proprios recepta compulsionis sollicitudine implenda munia functionis agnoscant. sane quibus terrarum erit quantulacumque possessio, qui in suis conscripti locis proprio nomine libris censualibus

detinentur, ab huius praecepti communione discernimus. eos enim convenit propriae commissos mediocritati annonarias functiones sub solito exactore cognoscere.'

<sup>20</sup> *Cod. Theod.* XI, xxiv, 6 (415).

<sup>21</sup> At Chios (Déléage, o.c. pp. 182-6) some farms have παροίκων κεφαλαί only (*coloni*, clearly including their animals, since they must have had some), others have παροίκων κεφαλαί and δούλων κεφαλαί and ζώων κεφαλαί. At Tralles (*BCH* 1880, pp. 336-8) the figures of κεφαλαί attached to each farm clearly include animals, since they contain small fractions. Some owners record above their farms δούλων καὶ ζώων κεφαλαί and some ζώων κεφαλαί as well. The former are animals in charge of the slaves, the latter presumably animals supplied for the use of the *coloni*. In this list some owners have a fractional figure of ζώων κεφαλαί immediately after their names. These are presumably animals kept at the owner's residence in town. The other animals are specified as being on this or that farm.

<sup>22</sup> At Thera (*IG* XII, iii, 343, 346). In Lesbos (*IG* XII, ii, 76) few farms have animals. Those registered without comment presumably belonged to the landowner. Other entries of the form βούς δ' Ἐλπίδηφόρος ἵππον α' Κυζίκιος καὶ Ἐλπίδηφόρος presumably mean that Elpidophorus declared 4 oxen and he and Cyzicius 1 horse. Elpidophorus is known as tenant of another farm (*IG* XII, ii, 79) which had no pasture. He presumably kept his beasts on a farm of which he was neither owner nor tenant.

of slaves to free men, since animals were rated at very small fractions of a *caput*, and tenants, judging by the detailed records, owned few animals and no slaves.

One fact emerges at a first glance at the lists—the fragmentation of agricultural property. The landlords concerned, some considerable, some of medium wealth, do not as a rule own large continuous estates but a great number of scattered properties, ranging from large farms to small holdings. The estate of Paregorius,<sup>23</sup> before division between his heirs, amounted in all to 420 *iugera* of arable, 110 *iugera* of vineyard, and 580 olive trees, and was assessed at about 10 *iuga*, but it was composed of 3 largish farms, 5 smaller farms, and 2 small holdings. Another owner in Thera, whose name is lost, but who was somehow connected with one Attalus, a Roman senator,<sup>24</sup> owned more than 20 farms (the list is incomplete at the bottom), all fairly small: for 16 farms whose figures are more or less intact the totals are 560 *iugera* of arable, 121 *iugera* of vineyard, and about 1,500 olive trees, which would have been assessed at about  $13\frac{3}{4}$  *iuga* in all. Another Theran list,<sup>25</sup> incomplete both at top and bottom, records 17 farms of which the 14 whose figures survive total 492½ *iugera* of arable, 72 of vineyard, and 426 olive trees: this would make up  $8\frac{3}{4}$  *iuga*. From Lesbos<sup>26</sup> we possess another list of farms incomplete at both ends. The 14 farms whose figures survive total 1,420 *iugera* of arable, 109 of vineyard, 5,200 olive trees, and over 925 *iugera* of pasture. Ignoring the last item, whose valuation is unknown but was probably very low, the total *iugatio* works out at about 30. Eight holdings are small, ranging from 19 to 9 *iugera* of arable and vineyard combined but well stocked with olive trees. Three are of moderate size (two of c. 125, two of c. 65, and one of  $52\frac{1}{2}$  *iugera*): the average is brought up by three large arable farms of 429½, 305½, and 294½.

Turning to lists drawn up in *iuga*, Heracleides<sup>27</sup> of Astypalaea owned about  $10\frac{1}{2}$  *iuga* distributed in 8 farms of moderate size and 2 small holdings. At Tralles<sup>28</sup> Critias, a decurion, owned  $20\frac{1}{2}$  *iuga* distributed in 7 holdings, two quite small, one of nearly 2 *iuga*, two of  $3\frac{1}{2}$  to 4, one of nearly 5, and one of over 6. Latron, another decurion, possessed over 17 *iuga*; of his four farms two were of moderate size, under 2 *iuga* each, another of 6, and another of 8. Fulvius, a priest, owned only about  $3\frac{1}{4}$  *iuga*, comprising one largish farm and one tiny holding. Tatianus, a decurion, is the wealthiest man of these lists, holding over  $57\frac{1}{2}$  *iuga* in 14 units. Six of these are quite small (under one *iugum*), three moderate ( $1\frac{1}{2}$  to  $3\frac{1}{2}$ ), four substantial (just under 5 to just over 6), and one very large (just over  $17\frac{1}{2}$ ).

A similar result emerges from the list at Magnesia on the Maeander.<sup>29</sup> In this the farms are not grouped under their owner's names but in alphabetical order (or rather under their initial letters), with the owner's name, the *iugatio* and the *capitatio* after each. The surviving portions contain 36 farms from letter A, 36 from letter B, 9 from E, and 15 whose initials are lost. Of the 81 farms whose figures survive, 26 are under one *iugum*, 20 between one and two, 8 between two and three, 6 between three and four. There are 8 of over four and under seven, 9 of over eight and under twelve, one of thirteen odd, one of fifteen odd, and one of twenty-one odd *iuga*. Finally there is one huge estate of 75 *iuga*, the property of a Roman senator.

Of the 96 farms recorded some will no doubt have been individual holdings, but a fair number were parts of larger properties. It is notable that in the very small part of the alphabet surviving (and there is reason to believe that even the As and Bs are incomplete),<sup>30</sup> twelve owners, out of about 65 in all, own more than one farm (35 farms between them).<sup>31</sup>

<sup>23</sup> IG XII, iii, 343.

<sup>24</sup> IG XII, iii, 345. The words at the end of line 1 should be read Ἀττάλου λαμπροτάτου. Excluding the heading 16 lines survive, and some lines seem to contain two farms (ll. 9, 10, 12, and probably 2 and 3). I have omitted lines 2–3 and 14 from my calculations as their figures are incomplete.

<sup>25</sup> IG XII, iii, 346.

<sup>26</sup> IG XII, ii, 76.

<sup>27</sup> IG XII, iii, 180, as read by Déleage, o.c., pp. 190–4.

<sup>28</sup> BCH 1880, 336–8.

<sup>29</sup> Kern, *Inchriften von Magnesia am Maeander*,

no. 122. In the calculations which follow I have followed the editor's interpretation of the figures except as specified in note 48 below (p. 54).

<sup>30</sup> On block *b* (probably As) there are on the right the initial Bs of a lost column of farms.

<sup>31</sup> Valerianus son of Romus (a 1, e 17–8), Variana (a 10, b 15), Patroina (b 4, e 14, g 3), Paulus philosebastos (a 7, f 7–8, g 4), Pisticus (b 12, 18, d 16–7), Priscillianus v.c. (a 12–3), Severianus the tribune (b 1–2, 9, d 5, e 7), Tychicus son of Eugnomonius (e 4–5, f 6), Tyrannus (e 1 and 3, 12), Tyrannus the Asiarch (e 10–11), Eutyichis of Ephesus (d 11, e 13), Philip of Tralles (b 7, g 1).

Fourteen are citizens of neighbouring cities, Ephesus, Tralles, and Colophon,<sup>32</sup> and almost certainly owned property in their home towns as well. Others are of such high status that they must have owned more than the small lots recorded in the surviving parts of the list. These include three men and two women of senatorial rank<sup>33</sup> (excluding the owner of the 75 *iuga* estate),<sup>34</sup> two *perfectissimi*,<sup>35</sup> one Asiarch,<sup>36</sup> and six styled Philosebasti, which probably means decurions of the city.<sup>37</sup> Severianus the tribune,<sup>38</sup> who is recorded as owning five farms, one of 13 +, one of 9 +, one of 2 + *iuga* and two without figures, under letters A and B, is likely to have owned some properties in other letters of the alphabet.

The great senatorial estate of 75 *iuga* would be even by modern standards considerable. If the *iugatio* was split evenly between arable on the one hand and vineyards and olives on the other, which seems by the Thera and Lesbian records fairly normal, it might have comprised say 3,200 *iugera* (2,000 acres) of arable, 400 *iugera* (225 acres) of vineyard, and 8,000 olives. This is, however, a quite exceptional estate, four or five times as big as the largest otherwise recorded, 21 *iuga* (Pollio, a decurion of Magnesia),<sup>39</sup> 17½ (Tatianus, decurion of Tralles),<sup>40</sup> 15½ (a lady named Patroina of Magnesia, who is recorded as owning two other farms, one of 10½ and the other of unknown size),<sup>41</sup> and nearly 14 (one of the five recorded holdings of Severianus the tribune).<sup>42</sup> Next come ten farms (nine at Magnesia and one at Tralles) ranging from 8 to under 12, and fifteen from 4 to under 7 (8 at Magnesia and 7 at Tralles). These in their turn have a greater assessable value than all but the largest farms recorded elsewhere; the two biggest farms of Lesbos would have been rated at only about 4¾ to 5.<sup>43</sup> One of these has a large area (430 *iugera* of arable and 240 of pasture), as it contains little vineyard or olives. The other has 250 *iugera* only, but makes up with 1,000 olive trees.

On the density of the agricultural population the detailed inscriptions unfortunately yield virtually no information. They tell us that farm G (Politike) in Paregorius' estate in Thera (26 *iugera* of arable, 8 *iugera* of vineyard, and 18 olive trees) was cultivated by one *colonus* (Theodorus, aged 30) and his wife, aged 20: he had a baby daughter, aged 2, and one ox and some (ten?) sheep.<sup>44</sup> His farm would be rated at ⅔ of a *iugum*, its population at 1½ + if his wife was reckoned as a half. At Lesbos<sup>45</sup> on the other hand, a *colonus* named Dionysius (the size of his family is not recorded) leased two farms, whose total area was 105 *iugera* arable, 10½ vineyard, 216 plus an unknown number of olives, and 70 *iugera* of pasture. A man of the same name had a half interest in another farm containing 119 *iugera* of second class plus an unknown quantity of first class arable, 1 *iugerum* of vineyard, 138 olive trees, and 75 *iugera* of pasture. The two farms would be rated at 2 or little more *iuga*, the third at 1½ at least. Dionysius then (with his family) cultivated at least 2 and perhaps as much as 3 *iuga*. Another *colonus*, Elpidophorus (family again unknown), held a farm of 25 *iugera* of arable, more than 4 *iugera* of vineyard and 1,009 olive trees—close on 5 *iuga*. He also apparently owned four oxen and a half share in a horse, which he kept in another farm, having no pasture of his own.

We have therefore to rely on censuses which are assessed in *iuga* and *capita*, and any results will depend on the validity of the conversion scale into *iuga* worked out earlier in this paper, and on the definitions of a *caput* given in the Code. On the census of Heracleides of Astypalaea<sup>46</sup> his eight farms are assessed first in total of *iuga* + *capita* (ζκ), then in

<sup>32</sup> Trallians, b 7, 14, 16, c 3, d 3; Ephesians, d 4, 8, 12, e 13, 15, f 9, h 2; Colophonian, h 5.

<sup>33</sup> Capitolinus (d 6), Eutychus (d 15), Priscillianus (a 12-3), Aristocleia (b 3), Hermonactiane (d 9).

<sup>34</sup> c 2; of his name only -NUS survives and he may be identical with Capitolinus (d 6).

<sup>35</sup> Maximianus (a 9), Metrodorus (a 5).

<sup>36</sup> Tyrannus (e 10-1).

<sup>37</sup> Heracleides (g 2), Mandrogenes (a 9), Paulus (a 7, f 7-8, g 4), Phanius (f 4), Pollio (d 1), Tychicus (a 8). The council of Magnesia is styled ἡ φιλοσέβαστος βουλή in nos. 179 and 193. Unless Philosebastos means member of the council, the absence of decurions would be strange.

<sup>38</sup> See n. 31.

<sup>39</sup> See n. 37.

<sup>40</sup> See n. 28.

<sup>41</sup> See n. 31.

<sup>42</sup> See n. 31.

<sup>43</sup> IG XII, ii, 76a, 79.

<sup>44</sup> IG XII, iii, 343.

<sup>45</sup> IG XII, ii, 79. Elpidophorus' animals appear on no. 76e.

<sup>46</sup> IG XII, iii, 180. There is a mysterious fourth column of figures on the right which Déléage (o.c., pp. 190-4) interprets as *capita animalium*. I cannot explain them, but I cannot accept Déléage's theory both for the reason given in the text and because the items are clearly labelled *iuga* (ζ) or *iuga vel capita* (ΖΚ or ΖΥΓΚ).

*iuga* of land ( $\gamma\eta\varsigma \zeta$ ) and thirdly in *capita* of human beings ( $\acute{\alpha}\nu\theta\rho' \kappa$ ): the last heading must include animals as the entries contain fractions down to  $\frac{1}{500}$ ,  $\frac{1}{700}$ , and  $\frac{1}{850}$ . In this list land to the value of  $10\frac{1}{2}$  *iuga* corresponds to about  $13\frac{1}{2}$  *capita*, of which a maximum of  $11\frac{1}{2}$  (the sum of the integers plus halves) can represent human beings. Every farm (as opposed to the two small holdings, which were presumably worked by neighbouring freeholders) has its *capita*. These may not represent their whole agricultural manpower, for one farm of  $1\frac{1}{2}$  *iuga* has only  $\frac{3}{4}$  *capita*. It seems unlikely that one woman ( $\frac{1}{2}$  *caput*; the remaining  $\frac{1}{4}$  is presumably animals) can have cultivated it single-handed and she may have sublet part of the farm to neighbouring freeholders or tenants of other estates, who would be registered in their villages or under other landlords; or she may have employed hired labour from similar sources. But even if two or three *capita* be added, the ratio would work out at an average of only about  $1\frac{1}{3}$  *capita* or  $1\frac{3}{4}$  persons to the *iugum*.

Similar results emerge for the registers at Tralles.<sup>47</sup> The priest Fulvius has 4 *capita* (omitting the smaller fractions) on his  $3\frac{1}{5}$  *iuga*; curiously enough there are only  $1\frac{1}{2}$  on his 3 *iuga* farm, and  $2\frac{1}{2}$  on his tiny plot of one-fifth of a *iugum*. The great landlord Tatianus has a maximum of  $65\frac{1}{2}$  human *capita* on his  $51\frac{1}{2}$  *iuga*. Their distribution is curious. In the village of Monnara, where he owned slightly less than one *iugum*, he registers more than  $3\frac{1}{2}$  *capita* of slaves and animals, nearly 4 *capita* of animals, and over  $15\frac{1}{2}$  *capita* of free tenants (with their animals). Monnara was evidently a centre at which Tatianus housed his tenants and slaves and stabled his plough-oxen and flocks and herds for a number of neighbouring farms. Over  $4\frac{1}{4}$  *capita* of slaves and animals also are registered at the village of Paradeisis, where he is recorded to have held only two small parcels of land of  $\frac{5}{8}$  and  $\frac{1}{16}$  *iuga*. On the other hand the big farm of  $17\frac{1}{2}$  *iuga* has only 9 *capita*, and a farm of over  $1\frac{1}{2}$  *iuga* has none. The estates of Critias and Latron yield no figures, as the stone is broken away on the extreme right and most of the figures of the *capita* have vanished. The average at Tralles is again  $1\frac{1}{3}$  *capita* to the *iugum*.

Some more figures come from Magnesia on the Maeander. After eliminating doubtful cases where one or other figure is missing or illegible,<sup>48</sup> 29 farms, totalling 183 *iuga*, are registered with *capita*, totalling 212, while 43 farms, which represent 80 *iuga*, have no *capita* at all. The former group comprises mainly large or medium farms, but it is noteworthy that some quite small holdings have large populations: one of  $\frac{1}{5}$   $\frac{1}{30}$   $\frac{1}{600}$  of a *iugum* has  $5\frac{1}{4}$  *capita*, another of  $\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{20}$  has  $9\frac{1}{2}$   $\frac{1}{10}$  and one of  $1\frac{1}{4}$   $\frac{1}{50}$  has  $15\frac{1}{2}$   $\frac{1}{120}$ .<sup>49</sup> On the other hand some large farms are poorly manned. The great estate of 75 *iuga* has only 42 *capita*, the one of  $15\frac{1}{2}$  + only 7 +, and one of  $10\frac{1}{2}$  + only 3 +.<sup>50</sup> The surplus population on the small holdings no doubt worked on the larger estates which were undermanned or had no *capita* registered on them. The farms without *capita* are mostly small holdings of under one *iugum* or a little over, but include some larger farms, two of 3 +, one of 4 +, one of 5 +, two of 6 +, and one of 10 +.<sup>51</sup>

Taking the farms with registered *capita* only, the manpower situation seems worse in Magnesia than elsewhere—only  $1\frac{1}{3}$  *capita* on the average per *iugum*. If the farms without *capita* be taken into account, the average of *capita* to *iuga* falls to about four-fifths. It seems scarcely possible that these figures can represent the whole rural population. It is probable that the list records only the estates owned by urban residents (like the Hermopolite list

<sup>47</sup> BCH 1880, 336–8. In Tatian's estate I read the figure of *capita* for 'Αγρὸς Ἀρσά (line 24) at  $3\frac{1}{30}$   $\frac{1}{100}$  not  $\frac{1}{3}$   $\frac{1}{30}$   $\frac{1}{100}$  (Γ'Α'Ρ' for Γ'Λ'Ρ') as there cannot have been less than  $\frac{1}{3}$  a *caput* of *coloni*. In the text as printed the fact that the stone is broken away on the right towards the bottom is not obvious, but it should be noted that in lines 35 and 41 the symbol κ is followed by no figure and that some fractions must be missing in Latron's figures of *iugatio* to make up the total.

<sup>48</sup> These are a 1, a 12, c 1, c 4, c 6, d 1–2 (where by the position of the *iuga* figures there were probably *capita* figures following as in d 12), d 5 and 16 (when the jumble of confused symbols probably

conceals *capita* figures), e 3, e 18, f 9 (where again there is a jumble of figures as in d 5 and 16), g 1, h 1. In b 18 I read Z δ < δ κ ΚΡΑΓ as *iuga*  $4\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{30}$  *capita*  $11\frac{1}{2}$  (not  $91\frac{1}{2}$ , which would be absurd); that is, I assume that the *capita* figure was ΙΑΓ and the loop a fault in the stone. The following have no figures at all: b 1–6, d 17–8, e 1, 2, h 2. I read b 10, ΖΚ as *iuga*  $\frac{1}{20}$  (the editor wrongly writes 20) and a 5, ΚΣΧΙ' as *capita*  $6\frac{1}{50}$  (not  $\frac{1}{5}$   $\frac{1}{50}$  as the editor wrongly renders it).

<sup>49</sup> g 4, e 11, b 12. Other farms with an excessive capitulation are a 5, 6, 9, b 7, e 4.

<sup>50</sup> c 2, e 14, c 5.

<sup>51</sup> d 9, f 8, f 7, e 8, h 4, e 13, e 17.

analysed below), and does not include villages of peasant proprietors, which were separately recorded elsewhere.

A tiny fragment of a register of villages survives from Hypaepa.<sup>52</sup> It runs :—

‘ Cinamura including (non-residents) owning (land) in (the village)—*iuga* . . .  
Dideiphyta including (non-residents) owning (land) in (the village) . . . ’

Two other blocks from Hypaepa give the detailed declarations on which such a list was based. On one block<sup>53</sup> are a number of entries, all very fragmentary, which seem to follow a uniform pattern : so-and-so, son of so-and-so, Hypaepene, resident in such and such a village, owner of land in Hypaepa in the village of Dideiphyta—vineyard : so many *iugera*—total : so much. These are the ‘ non residents owning land in the village ’ on the list. On the other block<sup>54</sup> there are four entries of the form : ‘ so-and-so son of so-and-so, Hypaepene, resident in my own house—myself, aged so many years ’, followed by other members of the household with names, relationships and ages, and animals (if any)—total, so much. In a fifth entry the family is followed by a declaration of land—‘ vineyard,  $3\frac{1}{5}$  *iugera* ; arable,  $4\frac{1}{6}$  *iugera*, olive trees . . . ’ and this again by a note : ‘ in the village of Poste olives . . .  $1\frac{1}{3}$   $\frac{1}{15}$  *iugera* : declared (?) ’. This block is taken by M. Déleage (o.c., 164–9) to be part of the urban register of the city of Hypaepa. This is possible. Under Diocletian the *plebs urbana* had been exempt from the *census* and the *capitatio*, but Galerius (and apparently Maximin) reversed this ruling ; Licinius in 313 once again exempted the urban population and this remained the rule.<sup>55</sup> An urban register of Hypaepa would then have been drawn up by Galerius, and our inscription might record it. The small holding of cultivated land registered would then have been within the walls of the city, which is not inconceivable. On the other hand it would seem more likely that both blocks refer to the village of Dideiphyta. The declarations on the second block would make no reference to it because they would all be under the heading Dideiphyta. Those on the first block mention Dideiphyta in each case because they are extracted from declarations made in other villages by the owners ; the holding of the Dideiphytene villager in the village of Poste will have been similarly transferred to the register of Poste. If our inscription is a village register, the large number of landless peasants is notable, so too is the exiguous size of the recorded holding. These facts may help to explain where the labour came from which worked the estates of the big landlords.

It is possible from this record and the Thera lists of *coloni*<sup>56</sup> to draw up a table of nine complete peasant households. They are as follows ; the figures represent ages, a cross that the age is unknown :—

	<i>Man</i>	<i>Wife</i>	<i>Sons</i>	<i>Daughters</i>	<i>Others</i>
(a)	+	—	—	—	Mother (48) Sister (11)
(b)	20	—	—	—	—
(c)	56	—	{ 3 under 3	—	{ a woman (48) a boy (under 3)
(d)	40	—	20	—	a woman (30)
(e)	30	30	3	—	2 boys (1)
(f)	—	20	—	2	—
(g)	65	+ ?	14, 11 (?) , 6	12	—
(h)	60	52	+	+	—
(i)	+	—	11	—	—

The woman and boy in (c) are both labelled ο or θ, which might stand for ὀρφανός (orphan) or θρεπτός (foundling). The woman in (d), whose description, if any, has

<sup>52</sup> Keil and Premerstein, o.c., no. 87,  
Κινάμουρα σὺν τοῖς ἐνκεκτημῇ · ζῦ . . .  
Διδειφύτα σὺν τοῖς ἐνκεκτημῇ . . .

<sup>53</sup> o.c., no. 86.

<sup>54</sup> o.c., no. 85.

<sup>55</sup> Lactantius, *de Mort. Persec.* 23, ‘ hominum capita notabantur, in civitatibus urbanae et rusticae plebes adunatae, fora omnia gregibus familiarum referta, unusquisque cum liberis cum servis aderant ’

(speaking of Galerius): *Cod. Theod.* XIII, x, 2 (313). ‘ plebs urbana, sicut in Orientalibus quoque provinciis observatur, minime in censibus pro capitazione sua conveniatur, sed iuxta iussionem nostram immunis habeatur, sicuti etiam sub domino et parente nostro Diocletiano Seniore Augusto eadem plebs immunis fuerat ’ (Licinius to the governor of Lycia-Pamphylia after the fall of Maximin).

<sup>56</sup> *IG* XII, iii, 343, 346.



perished, might be a second wife. One boy in (e) with no description may be a son : the other bears the same name as the son of 3, and is labelled  $\pi\rho\omicron\varsigma \delta\delta$  . . . which might mean nephew. The sample is too small to be of statistical value, but the uniformly small size of the families is suggestive and helps to explain why agricultural labour was so scanty.

If the above calculations are correct, there must have been an acute shortage of labour on the land. To a peasant family consisting of man and wife and a son and a daughter over fourteen, rated at three *capita*, there corresponded land to the value of  $2\frac{1}{4}$  to  $2\frac{1}{2}$  *iuga*. This, if entirely arable, would amount to 225 to 250 *iugera* (140 to 155 acres); if, as was more usual, partly in vineyard and olives, would represent perhaps 120 *iugera* (75 acres) of arable, 15 *iugera* (10 acres) of vineyard, and 250 to 300 olives. In the second century B.C. colonial land allotments were usually at rates of 5, 6, 8, or 10 *iugera* to each applicant (who would often have a wife and family);<sup>57</sup> in three colonies where land was particularly abundant, exceptional grants of 50 *iugera* were made.<sup>58</sup> Caesar in his consulship allotted land in farms of 10 *iugera* to married men with three or more children.<sup>59</sup> From 5 to 10 *iugera* was no doubt the minimum small holding which would (tax-free) support a family, whereas the *coloni* of our inscriptions had to pay heavy taxes (mostly in kind) and rent as well, but the disproportion between the figures of the second and first centuries B.C. and those of the fourth century A.D. remains striking.

A more relevant comparison is perhaps with the figures given by agricultural experts of an earlier period for the minimum labour force required to cultivate a given area for the maximum profit. Cato in the second century B.C. thought that sixteen hands were needed for a vineyard of 100 *iugera*; these with one exception, the bailiff's wife, are all adult males.<sup>60</sup> As against this, 4 *iuga* (96 *iugera*) of vineyard in the fourth century would on the average have carried 7 persons, including animals and children over 12 or 14. Columella in the first century A.D. recommends eight workers for 200 *iugera* of arable;<sup>61</sup> this area (= 2 *iuga*) would in the fourth century have carried between three and four persons, again including women and children. The land then had well under half the labour force required for efficient cultivation. It is hardly surprising that landlords were so anxious to tie their tenants to the soil and that so much legislation is devoted to the problem of reclaiming fugitive *coloni* and punishing landlords who harboured them on their own estates.

On the proportion of servile to free labour on the land only the registers of Thera, Lesbos, and Tralles provide any data. There is also a tantalizing document from Chios,<sup>62</sup> a list of farms with rubrics for *iuga* of land, *capita* of *coloni*, *capita* of slaves, and *capita* of animals; but unhappily the figures have never been filled in. This document only tells us that on 9 farms there were *coloni* only (whose *capita* would include their animals) and on 4 *coloni* and slaves and animals (of the owner). At Thera the register of farms which had belonged to Paregorius<sup>63</sup> (total value a little over 10 *iuga*) is followed by the entry 'and slaves on the land Eutychus aged 60, Polychronius aged 40, 1 ox, 1 ass, 5 sheep'. Next follows the heading 'Tenants' ( $\pi\rho\omicron\rho\omicron\iota\kappa\omicron\iota$ ) and the beginning of a list of *coloni* and their families and animals, starting with Theodorus of the farm Politike (v.s.); the next lines dealt with the *colonus* of farm Ophragorea (H) but are too fragmentary to be read. One can, however, be certain that there were only two slaves on this group of farms, and the rest of the population was free persons. On the general average the whole estate should

<sup>57</sup> Livy, xxxv, 40 (10 at Vibo in 192), xxxix, 44 (6 at Potentia and Pisaurum in 184), xxxix, 55 (5 at Mutina, 8 at Parma, 10 at Saturnia in 183), xl, 29 (5 at Graviscae in 181), xlii, 4 (10 to citizens, 3 to allies in Cisalpine Gaul in 173).

<sup>58</sup> Livy, xxxvii, 57 (50 at Bononia in 189), xl, 34 (50 at Aquileia in 180), xli, 13 (51½ at Luna in 180). The settlers here may well have been intended to be farmers employing (slave) labour. This is suggested by the fact that at Bononia *equites* got larger plots (70) and at Aquileia centurions and *equites* got 100 and 140. At Vibo also *equites* received a double allowance (20).

<sup>59</sup> Suet. *Julius*, 20, 3; Cicero, *Ep. ad. Att.* 11,

xvi, 1. These allotments were on the *ager Campanus* and *Stellas*, famous for their fertility.

<sup>60</sup> Cato, *de Agr.* 11.

<sup>61</sup> Columella 11, 12, 7. This is not extravagant seeing that he estimates that each *iugerum* requires 4 man-days to plough (3 times), 1 man-day to harrow, 3 to hoe, 1 to weed, 1½ to harvest (11, 13, 1) as well as 1 man-day to cut the straw after harvest (xi, 2, 54). This work alone would occupy his 8 men 300 days in the year, without allowing for sickness or bad weather, or carting, repairs, and other odd jobs.

<sup>62</sup> Déléage, o.c., 182-6.

<sup>63</sup> *IG* xii, iii, 343.

have carried about  $13\frac{1}{2}$  *capita* or 18 persons ; the ratio of slaves to free persons therefore was 1 : 8.

At Tralles <sup>64</sup> slaves and animals belonging to the landlord (reckoned in *capita*) are placed at the head of each owner's schedule, and are followed by a list of farms with their several *iugatio* and *capitatio* (*coloni* and their animals). Fulvius the priest has no slaves but  $4\frac{1}{8} \frac{1}{15}$  *capita* of *coloni*. Another owner whose entry is incomplete, Pausanias *alias* Achollius, has no slaves but at least 3 *capita* of *coloni*. Tatianus owns two groups of slaves and animals, of  $3\frac{1}{2} \frac{1}{6} \frac{1}{45}$  and  $4\frac{1}{4} \frac{1}{20} \frac{1}{100}$  *capita*, that is, a maximum of  $7\frac{1}{2}$  *capita* of slaves, and  $58\frac{1}{15}$  *capita* of *coloni* (and their animals), of which a maximum of 58 represent human beings. As Tatianus owned  $3\frac{1}{2} \frac{1}{3} \frac{1}{20} \frac{1}{50}$  *capita* of animals which were not registered with his slaves, but apparently used by his *coloni* at Monnara, it is likely that his *coloni* owned relatively few animals, and that their *capitatio* is mainly *humana*. The proportion of slave to free labour is here about 1 : 8. Critias and Latron own 2 (? +) and  $3\frac{1}{2} +$  *capita* respectively of slaves and animals. Their figures for *capita* of *coloni* are incomplete, but their land,  $20\frac{1}{2} \frac{1}{5} \frac{1}{12} \frac{1}{50}$  and  $17\frac{1}{3} \frac{1}{80}$  respectively, would on the general average have carried about 41 *capita*. The proportion of slave to free labour is here 1 :  $7\frac{1}{2}$ .

In Lesbos things were different. Here the lists of farms show slaves and animals in detail, but mention *coloni* only incidentally. One small fragment, <sup>65</sup> which is different from the rest in grading vineyard, arable, and olives in two qualities, places the name of the *colonus* (or *coloni* ; for two of the five farms are on joint tenancies by two men) at the head of each farm ; even this fragment does not, however, record the families and animals of the tenants. On the other lists the farms have no headings, and free persons are only named occasionally in connection with animals : they are probably the owners of animals grazed on farms which do not belong to them. There must presumably have been a separate register of *coloni* with their families and animals, which has not survived. The great majority of the farms (22 excluding the 5 recorded to have been worked by *coloni*) show a nil return under the slaves and animals rubric, six show animals only, but two <sup>66</sup> have large staffs of slaves (22 with 20 oxen and 50 sheep in the one case and 21 in the other). The first is a moderate sized farm, of 91 *iugera* of arable, 20 of vineyard, 150 of pasture, and 352 olive trees ( $2\frac{1}{2}$  *iuga* ignoring the pasture). The other is apparently quite small, only 5 *iugera* of arable, an unknown quantity of vineyard, and 132 olive trees. These farms were evidently each a centre from which a group of farms was worked. It is unfortunately impossible, owing to the fragmentary state of the registers, to calculate even approximately how many farms were worked by free tenants and how many by these large slave establishments. The larger establishment occurs in a list of sixteen farms, broken at both ends, which otherwise shows no *capitatio humana*. The total *iugatio* of this group is about  $29\frac{1}{2}$  *iuga* (excluding pasture) and on the normal ratio would have a population of 37 persons. But one cannot infer that slaves were roughly two to one free person on this estate, as there may have been very many more farms recorded to left and right (and one of these may have housed another slave establishment). The 21 slaves figure on a small fragment carrying only seven entries, four of which are tiny plots described as gardens. All that one can safely say is that on these Lesbian estates, unlike those of Thera and Tralles, slave labour was employed on a large scale.

Certain general conclusions emerge from these documents. The average agricultural unit was very small, and even wealthy landlords as a rule owned a large number of scattered farms rather than a great estate. Slaves were sometimes employed in large gangs of 20 or so, but more often in twos and threes, and in the latter case represented from 10 per cent to 12 per cent of the registered agricultural population. Lastly, the registered agricultural population was very thin on the ground according to ancient standards, the average density being  $\frac{1}{12}$  to  $\frac{1}{25}$  of that of the agricultural settlements of the later Roman republic in Italy, and well under half the minimum for efficient cultivation as reckoned by agricultural experts.

<sup>64</sup> BCH 1880, 336-8.

<sup>65</sup> IG XII, ii, 79.

<sup>66</sup> IG XII, ii, 76, 78.

There is only one other area of the empire for which documents comparable to these engraved census records survive. In Egypt the papyri have preserved a few land registers of the first half of the fourth century. These give no information on the ratio of slave to free labour—actually agricultural slaves were virtually unknown in Egypt—nor on the density of the rural population. They do, however, give fuller information than is available from other sources on the distribution of landed property between the urban and rural population, and between large, medium, and small holders, and also further illustrate the composition of large and medium estates.<sup>67</sup>

The most important of the Egyptian documents is *P. Flor.* 71, which can be dated by prosopographical evidence (see Johnson and West, *Byzantine Egypt: Economic studies* 19, n. 9) to the second quarter of the fourth century. Ll. 44–487 comprise a register of names in the alphabetical order of their initial letters, each followed by a statement of the quantity (in *arurae* = slightly over  $\frac{2}{3}$  acre) of land, public or private, which he or she held in the several *pagi* of the territory of Hermopolis. The list is virtually complete, only 11 out of 444 lines being totally illegible, and very few individual figures, relatively to the huge total, being obliterated. The list is headed Φρουρίου Λιβός, the name of one of the four ἄμφοδα into which the town of Hermopolis was divided. The lost beginning of the roll presumably contained similar registers of the other three ἄμφοδα (the last six names of one survive in ll. 1–8). Ll. 488–800 comprise a similar list headed Ἀντινοϊτικῶν ὀνομάτων. The first list evidently comprises the citizens of Hermopolis resident in the South Fort Ward who owned land in the city territory, the second the citizens of the neighbouring city of Antinoopolis who owned land in Hermopolite territory: since Antinoopolis was very near, and had, it is probable, only a small territory of its own, so many of its citizens were landowners in Hermopolis that they merited a separate schedule. Both lists, it should be noted, are confined to town dwellers. It was the administrative practice in fourth-century Egypt (and probably elsewhere) to keep separate schedules of πολιτικαὶ and κωμητικαὶ κτήσεις, the former comprising the holdings of urban residents, the latter those of villagers.<sup>68</sup>

The names in general present no difficulty. They are followed by a patronymic or sometimes, but rarely, an indication (usually abbreviated) of the person's profession or rank. Eighteen names are followed by several entries of land, distinguished by the words διὰ τοῦ δεινός: <sup>69</sup> here I take it that the names following διὰ are tenants or agents who registered their holding in the owner's name. In three cases an entry is followed by another headed ἐπ' ὀνόματος or καὶ ὄνομα τοῦ δεινός, the second name being out of alphabetical order.<sup>70</sup> In these cases I have assumed that the first named owner had come recently into possession of the second estate, still registered under the ὄνομα of its previous owner. In eleven cases land is registered under two names jointly, presumably co-heirs of an undivided estate,<sup>71</sup> I have included both names in the total of landowners. Under the letter K are listed not only persons beginning with K but κληρονόμοι, sixty-six in all, of deceased owners under all letters; these are, I take it, the estates of persons recently dead whose heirs had not yet taken possession; I have counted each as one owner. Finally the Antinoite list registers under O four οὐσίαι, three of them διὰ Ἀνουβίωνος ἀπὸ προέδρων: two are called Οὐλπιανή (in two different *pagi*), one Πλατωνική, the fourth Στάβλου. These are probably civic estates of Antinoopolis. The Hermopolite list records five οὐσίαι

<sup>67</sup> In what follows I have ignored fractions smaller than a half. I cannot vouch for the absolute accuracy of my arithmetic; for, apart from my incapacity for adding long columns of figures, I find Greek numerical notation troublesome, and missing or mutilated figures add to the confusion. In dealing with them I have exercised my discretion, eliminating those where the element of doubt is large, but including those where the missing figure is relatively unimportant (e.g. I have reckoned in ρπ[ ] as 180 +, but ignored [ ]β).

<sup>68</sup> This appears from *P. Princeton* 134 and *P. Strassb.* 45, discussed at the end of this paper.

<sup>69</sup> Ll. 143–4, 170–1, 186–9, 210–3, 235–6, 241–253,

304–8, 314–7, 424–6, 450–3, 454–7, 461–2, 536–8, 547–9, 583–8, 589–591, 596–9, 716–8.

<sup>70</sup> L. 88, ἐπ' ὀνόματος Διογένους Πάριδος under Ἀμμωνίαν Ἀντωνίου; l. 251, καὶ ὄνομα Σιλβανοῦ Ἑρμαπόλλωνος under Ἡρακλέαν Ὑπερχίου; l. 280, καὶ ὄνομα Ὠρίωνος under Ἱεροκλῆς Ἐλλαδίου. Silvanus son of Hermapollon occurs elsewhere out of place, over his brother (?) Pamunis, son of Hermapollon (ll. 416–8). Another name which appears out of place is Ἑρμαπόλλων Μαικηνᾶ, who follows κληρονόμοι Μαικηνᾶ Φιβίωνος. Σέρηνο[ς] υἱός follows his father in l. 782.

<sup>71</sup> Ll. 154, 375, 463, 533, 547, 581, 611, 636, 639–640 (brothers), 755, 774.

πολιτικάί (presumably of Hermopolis), but includes them in the holdings of the landowners who farmed them.<sup>72</sup> Altogether, on the assumptions made above, there were 233 (plus perhaps half-a-dozen in the missing lines) landowners resident in the South Fort Ward, and therefore, if the four wards were of approximately the same size and character, between 900 and 1,000 landowners resident in Hermopolis. The number of Antinoites owning land in the Hermopolite territory was 208 (not counting the four civic estates).

The land holdings are classified first by the *pagus* in which they lay; there were probably eighteen *pagi* in all,<sup>73</sup> distinguished by numbers, and the holdings, where one owner held land in several *pagi*, are recorded according to the numerical order of the *pagi*. Within each *pagus* the land is classified as ιδιωτική or δημοσία. In a very small minority of cases the classification has been omitted: in these cases I have assumed that the land is ιδιωτική, since, as will appear, the overwhelming majority of unmixed holdings belong to this category. The ούσiai, it may be noted, do not constitute a separate legal category but are mostly classed as ιδιωτική (one also included a small piece of δημοσία). The majority of owners in both lists hold private land only; but a substantial minority, 96 in the Hermopolite list out of 233, and 75 in the Antinoite out of 208, hold mixed estates in both categories, and this minority includes most substantial landowners. There are only five holdings of public land alone, all very small.<sup>74</sup> The area of public land is almost invariably smaller, and usually very much smaller, than the area of private land to which it is attached. In the Hermopolite list, in the holdings in which both figures are complete, the private land totals 8,989 *arurae*, and the public 1,093. The corresponding figures in the Antinoite list are 2,950 and 249. The owners concerned held in addition parcels of unmixed private land (in other *pagi*) amounting to 1,051 and 224 *arurae*. Overall, then, owners of mixed estates held private and public land in a proportion of about 10 : 1.

It may be that some of the holdings of public land may have originated as voluntary leases, which had become customary tenures. It seems more probable, however, from the distribution of the holdings that the great majority arose from the practice of ἐπιβολή, compulsory assignment of public land to private owners. The figures suggest that ἐπιβολή, though a quite common procedure, was on a small scale; most sizeable estates, and many small ones, had some public land attached, but the amount in each was inconsiderable. Ἐπιβολή cannot, as has been sometimes suggested, have played any important part in the disappearance of public land as a legal category.

The grand total of private and public land recorded in both lists, including (a) the mixed holdings recorded above, (b) other mixed holdings in which one or other figure is missing, (c) the unmixed holdings of private land held by these same owners as recorded above (there is only one unmixed public holding in this category, of 6 *arurae*), (d) unmixed private estates, which total 1,490 in the Hermopolite and 2,418½ in the Antinoite list, (e) the civic ούσiai, comprising 130 *arurae* of private land belonging to Hermopolis, and 518½ private and 1½ public belonging to Antinoopolis, and finally (f) unmixed public tenures, which total 2½ and 10, comes to 13,480 private and 1,221 public in the Hermopolite list, and 6,377 private and 321 public in the Antinoite. If one assumes a similar pattern of land ownership in the other three wards of Hermopolis, the total private land in the Hermopolite territory held by residents in the town would be about 54,000 *arurae*, and the corresponding figure of public land about 5,000; when Antinoite owners are added in, the grand totals would be about 60,000 and 5,000. We do not know the proportion of land in Egypt which was public and private, but the ratio of 1 : 12 is hardly conceivable. It would seem probable that city dwellers in the main held private land, with small amounts of public land attached. Villagers on the other hand, though some had acquired private land, were in the main descended from δημόσιοι γεωργοί, and would hold parcels of public land. If then we possessed the κωμητικάί κτήσεις of the Hermopolite as well as the πολιτικάί, public land would probably be shown in a much higher ratio to private. The total area of the Hermopolite territory cannot be calculated with any approach to accuracy, but

<sup>72</sup> Ll. 747-752 (Antinoite); 127, 137-8, 474-5 (Hermopolite).

<sup>73</sup> See l. 72.

<sup>74</sup> Ll. 111, 286, 561, 660; there is also one case (526) where an owner who holds land in several *pagi* has public land only in one *pagus*.

assuming that it extended northwards to include Tou, later to become a separate city as Theodosiopolis, and southwards to a line somewhat north of Cusae, which, formerly a toparchy of the Hermopolite nome, was already a separate city,<sup>75</sup> and that it comprised all land on the west bank, having the narrow strip on the east bank to Antinoopolis, it would have stretched about 50 miles along the river, with an average width of between 8 and 9 miles : that is, its area would have been 400-450 square miles or about 400,000 *arurae*. Town dwellers will have owned only about one-sixth of the land, and five-sixths will have been held by villagers.

For the distribution of landed property the Hermopolite list is more instructive than the Antinoite. Most citizens of Hermopolis would hold all or the greater part of their property within the territory of the city. Some of the wealthier citizens may have acquired estates elsewhere by marriage or inheritance, but such holdings would not be on a scale to distort the picture painted by the land register. The Antinoite list, on the other hand, records the estates of Antinoite citizens outside their own territory in the contiguous area. These estates represent only a section, and probably a small section, of the total owned by Antinoite citizens, and moreover each holding may well be, and often certainly is, only a minor part of the estate of the owner concerned, the bulk of whose property might lie in Antinoite territory, or anywhere else in Egypt. Hadrian enrolled as citizens of his new foundation 'Hellenes' from all parts of Egypt, and Antinoites are known to have owned land as far afield as the Arsinoite nome.<sup>76</sup> From the list itself it is apparent that some small holdings are in fact outliers of larger estates held elsewhere. It is for instance impossible that Harpocraton, former president of the Antinoite council (ἀπὸ προέδρων), can have owned only  $11\frac{1}{2}$  *arurae*, and most unlikely that Anubion, another president, recorded as lessee of three large civic estates, had no land of his own. Again two former *curatores civitatis* (ἀπὸ λογιστῶν) must have owned more than 2 and 16 *arurae*.<sup>77</sup>

I will therefore deal first with the Hermopolite list. The list, as we have seen, records the land of each owner under the *pagi* in which it was situated. This, it should be noted, does not mean that each recorded holding was a single estate. A man might own several separate parcels of land in one *pagus*, as is proved by a few entries in which separate registrations of land are made for the same owner in the same *pagus* by two or more tenants or agents.<sup>78</sup> As a general rule, however, the holdings of each man in each *pagus* have been totaled in the list, and we can therefore detect scattered holdings only when they were distributed over several *pagi*.

The majority of owners, including nearly all the smaller holders, register land in one *pagus* only. There are altogether 156 entries out of 230 which total less than 30 *arurae* each. Their distribution is shown by the following tables :—

Holdings in a single <i>pagus</i>				Holdings in several <i>pagi</i>		
	Number of owners	Total of <i>arurae</i>	Average holding	Number of owners	Total of <i>arurae</i>	Average holding
<i>All private</i>						
Under 10 .	66	268	4	2	10½	5½
10-19 .	23	316½	13¾	2	20½	10¼
20-29 .	9	211½	23½	—	—	—
<i>All public</i>						
Under 10 .	2	2½	1¼	—	—	—
<i>Mixed</i>						
Under 10 .	22	97½	4½	2	11½	5¾
10-19 .	13	173½	13¼	3	36½ +	12 +
20-29 .	11	263	24	1	20	20

A few even of these small holdings, it will be noted, are dispersed over several *pagi*; of those in a single *pagus* one of 9 *arurae* consists of three blocks, under separate tenants, of 4, 2½, and 2½, each subdivided into public and private land.<sup>79</sup> Some of these smaller

<sup>75</sup> See A. H. M. Jones, *Cities of the Eastern Roman Provinces* 345, 482, n. 64. SB 8942 has since confirmed my conjecture that Cusae was already a city.

<sup>76</sup> *Chr.* 1, 29.

<sup>77</sup> Ll. 521, 747-751, 566, 592.

<sup>78</sup> e.g. ll. 143-4, 186-9, 210-3, 304-8, 314-7, 450-3, 461-2, 583-8, 596-9.

<sup>79</sup> Ll. 186-9.

holders may have worked their own land, or a part of it, though resident in the city, but the majority seem to have been absentee landlords. A number record urban occupations. Among those who own less than 10 *arurae* there are a builder, a potter, a donkey man, a fuller, three wool shearers, a doorkeeper, a letter writer, an astrologer, two *officiales*, a *beneficiarius*, and a minor official (βονθός): another βονθός and a money-changer own 12 each.<sup>80</sup>

As estates increase in size they tend more and more to be distributed over several *pagi*, as the following tables show :—

	Number of pagi	Number of arurae	
30-39 <i>arurae</i> .	1	31	Total <i>arurae</i> 168 + Average holding 34
	2	31½	
	2	34½ +	
	1	36	
	2	39	
40-49 <i>arurae</i> .	1	42	Total <i>arurae</i> 313½ Average holding 45
	2	42	
	1	43½	
	3	44	
	2	45	
	1	47½	
50-79 . .	3	49½	Total <i>arurae</i> 250 Average holding 62½
	1	60	
	1	62	
	6	62½	
	1	65½	
80-99 . .	1	81	Total <i>arurae</i> 519½ + Average holding 87
	2	80½ +	
	4	88	
	2	88½	
	1	90½	
	2	91	
100-199 . .	1	113½	Total <i>arurae</i> 921½ Average holding 153½
	1	124	
	1	154	
	1	155	
	1	183	
	5	192	
200-600 . .	3	259	Total <i>arurae</i> 2,919½ + + Average holding 417
	4	258 +	
	2	317	
	3	465 +	
	6	503 +	
	4	530 +	
	1	587½	

Above the 190 *arurae* mark there is, it will be noted, only one estate, the largest of this group, containing nearly 600 *arurae*, which is concentrated in one *pagus*. There is then a considerable gap till we reach seven estates in the 1,000 *arurae* category. The biggest of these, of 1,370 *arurae*, was entirely in one *pagus*,<sup>81</sup> the other six, as the following table shows, are widely distributed :—

Number of pagi	Total of arurae
8	946½
9	1,020 +
9	1,027 +
7	1,098
4	1,090 +
10	808½ + +

In the last estate, that of Heracleon, a large number of figures are missing. The return made by the owner himself, which comprised land in five *pagi*, has perished save for one

<sup>80</sup> Ll. 77-8, 128, 159, 183, 214, 247, 267, 325, 342-3, 364, 380, 395, 438, 460.

<sup>81</sup> L. 299 (κλ' Ἀμμωνίου Ὑπερχίου).

figure, 47. Land totalling  $373\frac{1}{2}$  *arurae*, distributed over four *pagi*, was registered in his name by Aelianus, and under his name also comes the  $\delta\nu\omicron\mu\alpha$  of Silvanus, who held 388 *arurae*, all in one *pagus*, but in two blocks.<sup>82</sup>

It would appear then that, out of the 233 residents of the South Fort Ward of Hermopolis who owned land, seven men owned about half the total area (c. 7,500 out of c. 15,000), and another seven men owned close on another quarter (c. 3,000). If one may, to obtain an approximate picture of the pattern of land ownership in Hermopolis, multiply these figures by four, out of 900–1,000 urban landowners, 25–30 were in the 1,000 *arurae* class, owning half the total, and another 25–30 in the 250–600 *arurae* class, owning nearly a quarter of the total. Within the class of urban landowners the concentration of property is striking. But it must be remembered that, as pointed out earlier, urban landowners held only a small proportion, perhaps a sixth, of the total area of the territory, the remainder of which was held by villagers.

The Antinoite list is, as explained above, less instructive on the distribution of landed property, but, for what they are worth, the following tables analyse the information which it contains :—

Holdings in one pagus				Holdings in several pagi			
	Number of owners	Total of arurae	Average holding		Number of owners	Total of arurae	Average holding
Under 10 .	66	270	4	1	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
10–19 .	30	387 $\frac{1}{2}$	13	2	26 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$
20–29 .	23	548 $\frac{1}{2}$	24	2	40	20	20
30–39 .	9	310	34 $\frac{1}{2}$	0	0	0	0
40–49 .	9	383 $\frac{1}{2}$	42 $\frac{1}{2}$	1	45 $\frac{1}{2}$	45 $\frac{1}{2}$	45 $\frac{1}{2}$
50–99 .	12	811 $\frac{1}{2}$	67 $\frac{1}{2}$	9	609	67 $\frac{2}{3}$	67 $\frac{2}{3}$
100–200 .	12	1,786	149	1	143 $\frac{1}{2}$	143 $\frac{1}{2}$	143 $\frac{1}{2}$

Over the 200-line there are only three holdings, one of 203 in two *pagi*, one of 292 in one *pagus*, and one of 321 $\frac{1}{2}$  in a single *pagus* but declared by two agents. In addition there is Anubion, who leased three civic estates totalling over 500 *arurae*. In general, estates seem to be smaller and more concentrated, but it must be borne in mind that many of them may have formed parts of larger agglomerations. It is noteworthy that many of the more substantial holdings belong to civil servants or ex-civil servants. Antinoopolis was the metropolis of the Thebaid, and the governor's officials doubtless invested their savings in land in the neighbourhood. There are six *primipilares* who own 292, 179 $\frac{1}{2}$ , 116, 76, over 59, and 56 *arurae* respectively.<sup>83</sup> A former *praeco* ( $\alpha\pi\omicron$   $\pi\rho\epsilon\kappa\omicron\nu\omega\nu$ ) has 143 $\frac{1}{2}$  and a former procurator ( $\alpha\pi\omicron$   $\epsilon\pi\iota\tau\rho\omicron\pi\omega\nu$ ) over 130.<sup>84</sup> Three *beneficiarii* hold 74, 58 $\frac{1}{2}$ , and 40, and an *ab actis* ( $\alpha\beta\acute{\alpha}\kappa\tau\eta\varsigma$ ) 54.<sup>85</sup> The largest estate of 321 $\frac{1}{2}$  *arurae* is held by a man described as  $\alpha\pi\omicron$   $\epsilon\zeta\alpha\kappa\tau\omicron\rho\omega\nu$ .<sup>86</sup> The post of *exactor civitatis* was an imperial *dignitas*, but by this date normally bestowed on a *curialis* of the city concerned. This man will then probably have belonged to the curial aristocracy of Antinoopolis, as did Anubion, former president of the council, who leased the three civic estates.

*P. Lips.* 101 is a much smaller fragment containing less than fifty entries. It too is from Hermopolis, and appears to be of similar date to *P. Flor.* 71. It also seems to be concerned with city dwellers; the names are almost entirely Greek, most are stated to be  $\alpha\pi\omicron$   $\epsilon\rho\mu\omicron\nu\pi\omicron\lambda\epsilon\omega\varsigma$  (and a few of Antinoopolis), and four are gymnasiarchs. The land is, as in *P. Flor.* 71, classified as  $\iota\delta\iota\omega\tau\iota\kappa\eta$  or  $\delta\eta\mu\omicron\sigma\iota\alpha$ , but in both categories  $\epsilon\sigma\pi$ ( $\alpha\rho\mu\epsilon\nu\eta$ ) is added. Here the resemblance between the two lists ends. In *P. Lips.* 101 the names are not in alphabetical order, Antinoites are mixed up with Hermopolites (both being usually labelled as such), and each name is followed by one holding only, either private, mixed, or public: there is no indication of the *pagus*. At the beginning of the list occurs an entry of

<sup>82</sup> Ll. 64 ( $\alpha\kappa\upsilon\lambda\alpha\varsigma$   $\omicron$   $\omicron\lambda\upsilon\mu\pi\iota\omicron\delta\omega\rho\upsilon$ ), 123 ( $\Gamma\epsilon\nu\nu\acute{\alpha}\delta\iota\omicron\varsigma$   $\Delta\iota\omicron\kappa\lambda\epsilon\upsilon\sigma$ ), 129 ( $\Delta\iota\omicron\sigma\kappa\omicron\upsilon\rho\iota\delta\eta\varsigma$   $\text{Αἰλῖανου}$ ), 241 ( $\text{Ἡρακλέων Ὑπερεχίου}$ ), 274 ( $\text{Ἰεροκλῆς Ἐλλαδίου}$ ), 408 ( $\text{Πινουτίων Ὀλυμπίδωρου}$ ).

<sup>83</sup> Ll. 515, 612, 625, 697, 707, 714. There is also a wealthy *primipilaris* (over 206 *arurae*) at Hermopolis

(l. 60). *Primipilaris* at this date, of course, means former *princeps* of the provincial *officium*.

<sup>84</sup> Ll. 680, 791.

<sup>85</sup> Ll. 509, 546, 550, 604; in the Hermopolite list (ll. 160, 380) there are another *beneficiarius* and an *actuaris*, holding 65 $\frac{1}{2}$  and 60 *arurae*.

<sup>86</sup> L. 589.

180½ *arurae* (probably private), followed by another of more than 100 *arurae* (presumably private), plus ¼-*arura* public. The preceding names (if they were names and these figures are not total of earlier entries) are lost. The remaining entries, of which 36 preserve the figures, are all very small; only two are larger than 10 (12½ and 14), and the average is between 4 and 5. There are two holdings of public land only, five of mixed public and private (in addition to the large figure already mentioned), and twenty-nine of private; these include an οὐσία Ἑρμοπολιτικ(ῇ) (πρότερον) Βησᾶτος (11, 11) and an οὐσία ταμειακὴ πρότερον Ἀμμωνίου of 6 *arurae* (11, 21).

It seems likely that this list represents an earlier stage in the formation of the land register of *P. Flor.* 71. Here, it would appear, all citizens in one *pagus* have been entered higgledy-piggledy as they came in, later to be sorted into Ἑρμοπολιτικὰ ὀνόματα under the four wards and Ἀντινοϊτικὰ ὀνόματα, arranged in alphabetical order, and consolidated with returns from other *pagi*. The chief importance of the fragment is in underlining the fragmentation of rural property. Apart from the two considerable estates (if they are estates) at the head of the list, the holdings are all tiny, but many were no doubt fragments of larger agglomerations: it is inconceivable that the four gymnasiarchs recorded (two αἰώνιοι) could have owned only 5 *arurae* private, 5 public, 6, and 1¼ private respectively (1, 4, 22, 25; 11, 10). The document also confirms the earlier hypothesis about entries διὰ τοῦ δεινός. There are a number of entries in this form, in which ὁ δεῖνα is sometimes a relative, once a γεωργός (or tenant), once a προνοητής (or agent—for 14 *arurae*): the imperial estate is registered by a βοηθός.

There are unfortunately no village land registers from the Hermopolite. There appear in fact to be only three for all Egypt in this period, and of these *SPP* x, 221 and *PRG* v, 58 are too fragmentary to be of statistical value. There remains *P. Princeton* 134 which records the κωμητικὴ κτῆσις of Theadelphia in the Arsinoite in a tenth indiction early in the fourth century, probably 322. The list is certainly incomplete, being in two columns, the bottom of each of which has perished. The land is classified as βασιλική or ιδιωτική, each class being further qualified as σποριμή or ἄσπορος.

Owner	Royal sown	Private sown	Royal unsown	Private unsown	Total
A	41½ 1/16	6¼ 1/16	—	—	47½
B	—	3½	—	—	3½
C	19½	?	—	—	19½
D	33¼ 1/8	22¾ 1/8 1/16 1/32	2¾ 1/16 1/64	—	58¾
E	8¼	—	—	—	8¼
F	—	—	12½	—	12
G	6½	6¾ 1/16 1/32	—	—	12¾
H	10½	16¾ 1/8 1/32	—	—	27½
I	5½	21¾	2½	1¾ 1/8 1/16 1/32	30½
J	—	44¼ 1/8	—	—	47½
K	—	1¼ 1/12	—	—	1¼
L	1¼ 1/8	—	—	—	1¼
Total	124¾	122¾ +	16¾	5½	269 +

It will be noted that the royal land is approximately equal in extent to the private in this village; a very different proportion from that shown by the Hermopolite register. There are great anomalies between peasant holdings, which range from one of nearly 60 *arurae* and two of nearly 50 to one of 3 and two of little over 1 *arurae*.

In a petition (*P. Thead.* 17, cf. 16) addressed to Flavius Hyginus, prefect of Egypt in 332, it is stated that the taxable area (φορολογία) of the whole village was 500 *arurae*, and the registered number of its adult male inhabitants (κατ' ἄνδρα) twenty-five. Our land register therefore comprises rather over half the total. There are three other lists of about this period from Theadelphia which help to fill the gap. From a tenth indiction, probably 322 again, but later in the year (for several of the owners in the land register have recently died and are represented by their heirs) there is an εἰσπραξις σίτου κωμητῶν (*P. Thead.* 30) of 18 entries. From 314 there is a statement (*P. Flor.* 54) of amounts of seed-corn lent by the government to 16 villagers, and from 312 there is a report of the σιτολόγοι (*P. Strassb.* 45) on amounts of corn delivered to the village granary by 16 persons. Many



names recur in these lists, but it is clear that none is exhaustive. Seed-corn was probably loaned only to holders of royal (public) land, and in the two documents recording receipt of corn taxes by the σιτολόγοι the names of those who had not yet paid up are absent. Allowing for this, twenty-five does not seem to be an overestimate of the adult male population.

The list of 312 is of peculiar interest in that it distinguishes between σῖτος πολιτῶν and σῖτος (and κρίθη) κωμητῶν. The latter amounts to  $329\frac{3}{4}$  *artabae* of wheat and  $62\frac{5}{12}$  of barley, and is delivered by 14 persons. The former totals only  $33\frac{7}{12}$  *artabae* of wheat, and is delivered, through their tenants, by two persons, Masculinus ( $15\frac{7}{12}$  *artabae*) and Rufina, daughter of Rufus, whose tenant is Sacaon (18 *artabae*). Nineteen years later, in 331, Sacaon rented 16 *arurae* from Aurelia Rufina, whom he describes as λαμπροτάτη (*clarissima*), wife of Claudius Lampadius, decurion of Alexandria (*P. Strassb.* 43). It is probable that this is the same holding on which in 312 he paid 18 *artabae* on his landlady's account, in which case the total of land held by urban residents in Theadelphia will have been about 30 *arurae* out of 500.

The records of Theadelphia thus confirm, for what they are worth, two inferences from the Hermopolite register. First that the proportion of public to private land was far higher than indicated by the register, and secondly that the bulk of the soil of Egypt was still in the early fourth century held by peasant proprietors. It may be added that in Theadelphia the ratio of adult males to area of land, 25 men to 500 *arurae*, is almost equivalent to Columella's optimum of 8 men to 200 *iugera*.