

# LANDHOLDING IN THE HERMOPOLITE NOME IN THE FOURTH CENTURY A.D.\*

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## INTRODUCTION

There is no need to emphasize the fundamental importance of landholding patterns for the understanding of the ancient economy. The present article attempts to make a contribution to this aspect of the history of Egypt in the fourth century. But the importance of the major issue is not, of course, peculiar to Egypt. The notion of the growth of large estates in the later empire is a familiar one, and the fourth century A.D. is generally thought to be an important period for their development. But Roman historians conditioned to be wary of an unqualified application of the model of great slave-worked *latifundia* to Italy in the second century B.C. might now also think it appropriate to ask exactly how far our evidence for the fourth century will take us.

For Egypt, one might have thought, there is abundant documentary material which should enable us to reach relatively sound and unambiguous conclusions, at least as regards the major features of the landholding pattern. But in this respect, as in many others, the evidence of the papyri needs renewed and more careful assessment as the orthodoxy of an earlier generation of scholars is subjected to searching revision.<sup>1</sup> Refinements of interpretation may result from a more penetrating scrutiny of the evidence, from an improvement in the actual quantity or quality of the evidence available to us, or from a combination of these factors. The analysis which follows proceeds, it is hoped, on both fronts by utilizing the abundant recent scholarly work on fourth-century Egypt and applying it to a splendid new edition of some very important papyri which between them provide our primary evidence for land tenure in the Hermopolite Nome in the middle of the fourth century.<sup>2</sup>

One of these documents, *P.Flor.* 71, has in its *editio princeps* been for many years one of the central texts under discussion;<sup>3</sup> the appearance of a new edition, however, prompts a re-examination of its evidence. At the same time, the first full publication of a papyrus from Giessen, whose content duplicates that of *P.Flor.* 71 to a very considerable extent, and the addition of various other fragmentary texts provide the raw material for a more detailed and productive analysis of landholding patterns.<sup>4</sup>

A sketch of what might be regarded as the accepted view may be helpful, together with some observations on the weakness of this position and the nature of the evidence in general for land tenure in Byzantine Egypt. It should be stressed at the outset that when our analysis of the Hermopolite land-lists is taken into account, the result may be a greater rather than a lesser degree of uncertainty about many important issues. The evidence

\* I have benefited greatly from the advice and comments of many friends, in particular Dorothy Thompson (Crawford), Klaas Worp, Jane Rowlandson and Roger Bagnall. The treatment and presentation of the statistical data owe a great deal to the assistance of Professors Stuart B. Schwartz and Claudia Goldin. My particular debt to the recent publications of James Keenan and Roger Bagnall will be apparent in the footnotes but I should add that I have also drawn on points made by Bagnall in unpublished material which he has kindly allowed me to read.

<sup>1</sup> For Byzantine Egypt the best starting point is the penetrating discussion by James Keenan, 'On Law and Society in Late Roman Egypt', *ZPE* 17 (1975), 237-50, which sets out the issues very clearly and deserves wide circulation. See also, along similar lines, G. Geraci, *Corsi di cultura sull'arte ravennate e bizantina* 1976, 227-56 at 245 ff. and *ibid.* 1977, 197-222 at 202 ff.

<sup>2</sup> P. J. Sijpesteijn, K. A. Worp, *Zwei Landlisten aus dem Hermopolites (P.Landlisten)*, *Studia Amstelodamensia ad epigraphicam, ius antiquum et papyrologicam*

*pertinentia* VII (1978), cf. the reviews by R. P. Duncan-Jones, *JRS* 71 (1981), 198-9 and A. K. Bowman, *JEA* (forthcoming).

<sup>3</sup> A. C. Johnson and L. C. West, *Byzantine Egypt: Economic Studies* (1949), 40-8, A. H. M. Jones, *The Roman Economy* (ed. P. A. Brunt, 1974), ch. x, 244-52, R. P. Duncan-Jones in M. I. Finley (ed.), *Studies in Roman Property* (1976), ch. 2, *passim*. All these are hereafter cited by author and page number only.

<sup>4</sup> For some general comments on the method of presentation see the review article by R. S. Bagnall, *BASP* 16 (1979), 159-60; he notes in particular the difficulties created by the editors in their mode of reference to the texts. I follow the editors and Bagnall in referring to *P.Flor.* 71 and *P.Giss.* 117 as F and G respectively; but since each of them contains a list of Hermopolite residents and a list of Antinoites, and since the division is germane to many of the issues discussed, I have referred to the different sections as G.Herm., G.Ant., F.Herm. and F.Ant.; and to the volume in general as *P.Landlisten*.

seems to suggest that the picture is more complex, the developments more subtle and ambiguous than might once have appeared.

It is generally believed, then, that private ownership of land in Egypt was introduced on an appreciable scale under Roman rule. Through the Roman period there was an increasing trend towards private ownership and by the fourth century A.D. large private estates had begun to grow at the expense of the small landowner. Those small landowners who survived became increasingly oppressed by the tax burden and turned for protection to their more powerful neighbours, ultimately yielding their land to the rich. By A.D. 415 the Theodosian Code provides unequivocal evidence for such patronage in Egypt, and by the sixth century we have papyrological evidence for large estates worked by a 'semi-feudal' or servile labour force.<sup>5</sup>

The role of *P.Flor.* 71 in such a picture has been important for scholars who thought that, for instance, 'the land registers of Hermopolis indicate rather extensive holdings of both private and public land'.<sup>6</sup> But there has by no means been a tidy consensus. Jones stated that in the early fourth century the bulk of the soil of Egypt was still held by peasant proprietors.<sup>7</sup> El-Abbadi identified an Hermopolite estate of over 1,000 arourai in a papyrus of A.D. 268, composed of small and large plots in different categories and showing the phenomenon of royal and public land passing into private ownership; developments which culminated, he thought, in the re-emergence of the 'ousia-type' of the first century A.D.<sup>8</sup> Carrié has identified the phenomenon of military men acquiring land and exercising patronage from the middle of the fourth century onwards in the form of 'achats massifs de terre'.<sup>9</sup>

Yet it must be stressed that any attempt to link phenomena of the sixth century with embryonic developments in the fourth or earlier requires a tremendous leap of the imagination, for, apart from some scraps of evidence in the legal codes, there is very little documentation for the intervening period. And even when we reach the sixth century, we will do well to remember that a great deal of our evidence emanates from a small number of families in Oxyrhynchus and Aphrodite.<sup>10</sup> The 'Byzantine large estate', even if it exists in the semi-feudal form which has been commonly assumed, may well not be as ubiquitous or as dominant as our evidence makes it seem. Keenan has recently reminded us of the need to seek a balance by his vivid picture of the activities of a small-scale entrepreneurial landholder of the 520s.<sup>11</sup>

If it seems unduly pessimistic to stress our inability to be sure of the sixth-century pattern or the precise ways in which developments of an earlier period lead into it, we might look for firmer ground in the fourth century itself. This period has generally been characterized as an era of sweeping changes and social and economic depression. Important changes there certainly were, from the reign of Diocletian onwards. But Johnson and West, writing almost forty years ago, did not adopt a tone of general pessimism. They saw a greater freedom and security for the peasants in the villages and a generally high level of prosperity except for some villages in marginal areas of cultivation on the edge of the Fayum.<sup>12</sup> Justinian was still able to specify an annual revenue from Egypt of 8 million artabs of wheat, which does not suggest a marked decline in the general level of prosperity<sup>13</sup>—more especially, we should add, if it is correct that post-Dio-

<sup>5</sup> The best recent analysis of the difficulties in tracing this development, with all the essential bibliography, can be found in Keenan, *ZPE* 17 (1975), 237–50 at 238 ff., where he points sharply to the difficulties in relying on evidence from the legal codes which is poorly supported by the papyri. A more optimistic attempt to find papyrological evidence for the early development of large estates can be found in an article by I. F. Fikhman, *Le Monde grec: Hommages à Claire Préaux* (1975), 784–90. The sort of difficulty involved is well exemplified in his treatment of *P.Oxy.* XIV, 1747 (iii/iv), containing a list of γεωργοῦντες who are identified as *possessores*, 'grands propriétaires'; but there is no indication of the scale of their landholdings.

<sup>6</sup> Johnson and West, 48.

<sup>7</sup> Jones, 255.

<sup>8</sup> M. A. H. el-Abbadi, *Proceedings of the XIV Interna-*

*tional Congress of Papyrology* (EES, *Graeco-Roman Memoirs* 61, 1975), 91–6.

<sup>9</sup> J.-M. Carrié, *BCH* 100 (1976), 159–76.

<sup>10</sup> See particularly J. G. Keenan, *ZPE* 17 (1975), 238 ff.; also H. I. Bell, *JEA* 4 (1917), 86–106, E. R. Hardy, *The Large Estates of Byzantine Egypt* (1931), Johnson and West, 49–65.

<sup>11</sup> *BASP* 17 (1980), 145–54.

<sup>12</sup> Johnson and West, 6, cf. Keenan, *ZPE* 17 (1975), 240–1.

<sup>13</sup> Justinian, Edict XIII, 8, cf. Johnson and West, 236. Crude though the comparison is, it is perhaps worth noting that the revenues in wheat from the Oxyrhynchite (perhaps one of the more productive of the thirty-odd nomes) in the earlier fourth century total just over 320,000 artabs (*P.Mich. inv.* 335, cf. nn. 57, 64 below).

clerical tax-rates were not nearly so burdensome as has been thought, in spite of the frequent, almost formulaic complaints.<sup>14</sup>

Much of our evidence for the first half of the fourth century in Egypt is archival and much of it is from the Fayum. The archive of Sakaon vividly evokes the last days of Theadelphia,<sup>15</sup> that of Aurelius Isidorus the dealings of a far-from-prosperous land entrepreneur at Karanis, where the general level of prosperity seems also to have declined in comparison with the situation in the second century.<sup>16</sup> As has already been noted, the Fayum may well not be a reliable indicator of the level of prosperity elsewhere in Egypt. But even when we have archives from other places, as indeed we do—those of Aurelia Charite from Hermopolis and Leonides from Oxyrhynchus, for example<sup>17</sup>—we are bound to ask which part of the general picture their particular concerns illustrate. The answer is not always unequivocal. If the archive of Aurelia Charite tells us how a large landowner managed her affairs in the Hermopolite Nome in the second quarter of the fourth century, it does not tell us how many there were like her. This, at least, is the context in which the importance of the land registers from Hermopolis has to be assessed. There are few other documents which even approach the capacity of these registers to produce some sort of a 'general picture' of landholding patterns in the nome.

The registers contain lists of residents of the West Citadel Quarter of Hermopolis and of the neighbouring city of Antinoopolis who owned land in the Hermopolite Nome. One question which will be taken up in the discussion is that of the relationship between the towns and the rural areas of the nome, but it is perhaps appropriate at this point to attempt a brief general description of the region.<sup>18</sup> The Hermopolite Nome in Middle Egypt, stretching roughly from modern Manfalut to Samalut, comprised a territory of perhaps 1,300 sq. km or a little more, on the west bank of the river. The land on the east bank was only a very narrow strip (though perhaps a little wider than it is today), and constituted the Antinoite Nome in the fourth century A.D. Hermopolis itself was a metropolis of considerable size, as the pre-war German excavations revealed,<sup>19</sup> but any attempt to estimate its population at any particular time is hazardous. As a very crude approximation, it looks as though a figure of perhaps 20,000 might be of roughly the right order of magnitude at the height of its development. Whether this will have been maintained through the fourth century is another matter, but, for what such an impressionistic judgement may be worth, I see no reason to assume a decrease, nor do I know of any clear evidence to suggest it.<sup>20</sup> This is not the occasion for a discussion of the social and economic complexity of such a town but it is clear that no simple and exclusive 'agricultural' or 'commercial' model can be applied.

Antinoopolis lies on the east bank of the river somewhat to the north of Hermopolis. Founded as a 'Greek city' by Hadrian in A.D. 130, it must always have been an oddity. Many of its citizens clearly owned land elsewhere. It lay within a narrow strip of land on the east bank which must originally have belonged to the Hermopolite Nome and the evidence indicates that the creation of the Antinoite Nome took place only in the last decade of the third century.<sup>21</sup> Thus the phenomenon of numerous Antinoites owning land in the Hermopolite Nome can easily be explained by both topographical and administrative factors. But we are in no position to estimate what proportion of the fourth-century population of Antinoopolis is represented by the 203 Antinoite landholders in F (see n. 4).

<sup>14</sup> The major drawback might rather have been their inflexibility. I owe this point to Roger Bagnall; see his article forthcoming in *TAPA* 115 (1985) and cf. A. C. Johnson, *Egypt and the Roman Empire* (1951), 131.

<sup>15</sup> G. M. Parassoglou, *The Archive of Aurelius Sakaon* (*Papyrologische Texte und Abhandlungen* 23, 1978), cf. R. S. Bagnall, *BASP* 17 (1980), 97–104.

<sup>16</sup> A. E. R. Boak, H. C. Youtie, *The Archive of Aurelius Isidorus* (1960), cf. R. S. Bagnall, *CE* 52 (1977), 322–36.

<sup>17</sup> K. A. Worp, *Das Aurelia Charite Archiv* (*P. Charite*), *Studia Amstelodamensia ad epigraphicam, ius antiquum et papyrologicam pertinentia* XII (1980), *P. Oxy.* XLV, 3254–62.

<sup>18</sup> In general see M. Drew-Bear, *Le Nome Hermopolite* (*American Studies in Papyrology* 21, 1979). Cf. Jones,

248—the nome 'comprised all the land on the west bank, having (*sic*, but surely a misprint for 'leaving') the narrow strip on the east bank to Antinoopolis'.

<sup>19</sup> See G. Roeder, *Hermopolis, 1929–39* (1959), 105 ff., N. Lewis, *Life in Egypt under Roman Rule* (1983), 37–8, A. J. Spencer, *Excavations at El-Ashmunein I. The Topography of the Site* (1983).

<sup>20</sup> It should again be emphasized that no general trend can be deduced from the shrinking population of some Fayum villages (cf. R. S. Bagnall, *Bull. soc. arch. copte* 24 (1982), 35–57, on Theadelphia; A. E. R. Boak, *Historia* 4 (1955), 157–62, on Karanis).

<sup>21</sup> For references on the Antinoite Nome see A. K. Bowman, *JRS* 66 (1976), 161. On Antinoopolis see H. I. Bell, *JRS* 30 (1940), 133–47.

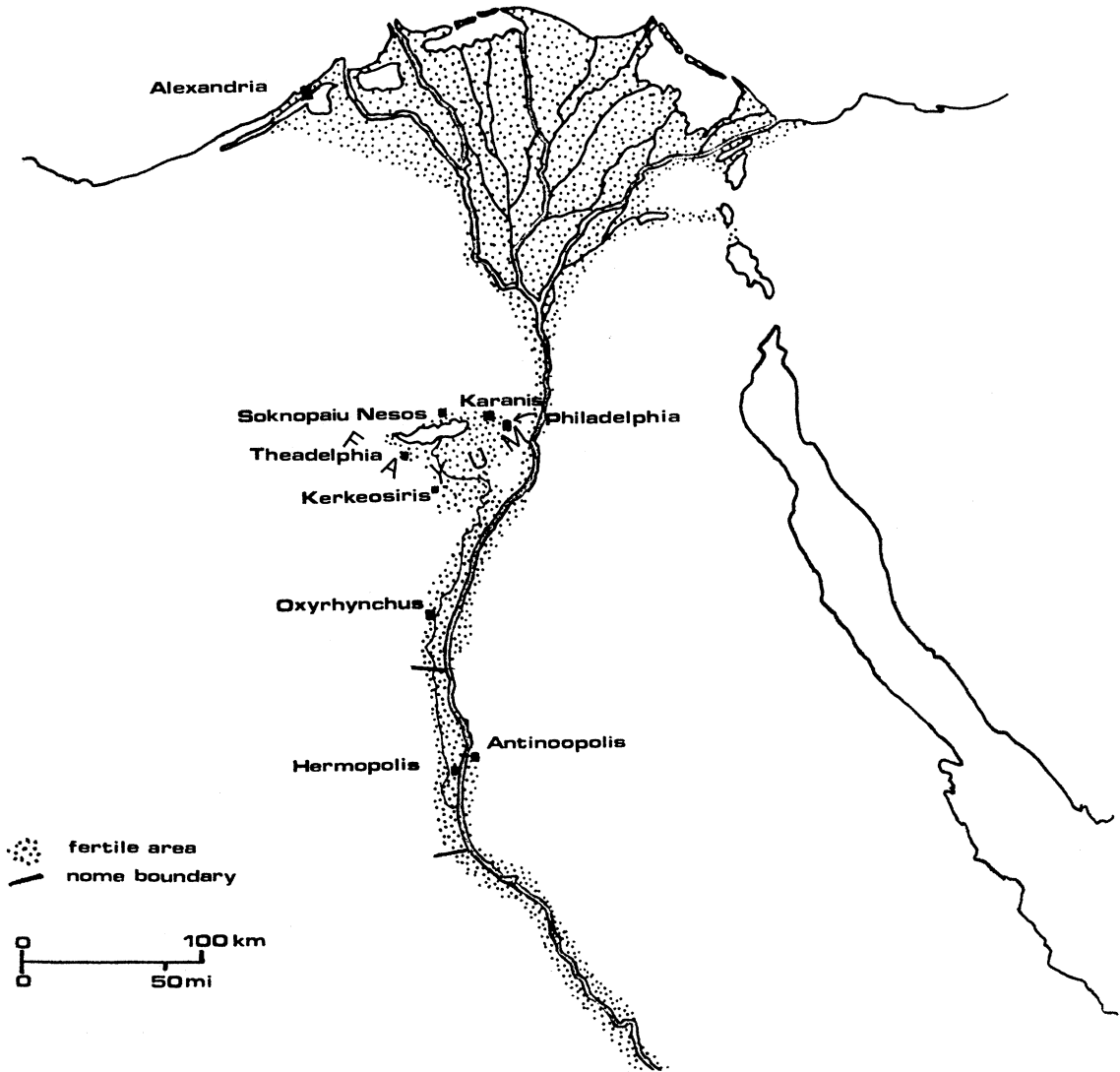


FIG. 1. THE HERMOPOLITE NOME IN THE FOURTH CENTURY.  
DRAWN BY J. BOWMAN

#### THE NATURE OF THE REGISTERS

Before attempting to describe the registers, some indication must be given of the trustworthiness of the new edition, particularly as regards G and F upon which the analysis concentrates, using *SPP* v 120 only briefly and for purposes of comparison. There are, it is true, a few minor problems of reading.<sup>22</sup> More seriously, in some places the texts are abraded or lacunose, and it is fair to say that some of the readings of important numerals cannot be regarded as certain. However, I have failed to find any such instance in which I could confidently propose an alternative reading which seems better.<sup>23</sup> As for the

<sup>22</sup> As noted by Duncan-Jones (*loc. cit.*, n. 2), for example, in G 407 = F 623 where identical holdings are located in the 10th pagus in G and the 13th (1 γ) in F; a similar case in G 103 = F 309, where the pagus number is given as ιε and ιγ respectively. In both cases the plates suggest that the editors' readings are correct, or, at least, that G and F do have different numerals in these places. Potentially more serious are those cases in which

the quantities of land may be suspect (see next note). Any such difference *may*, of course, be due to scribal error.

<sup>23</sup> Duncan-Jones notes the reading at F 71 but the editors were correct to read λισλβ. The difficulty is, of course, that the suspicion of misreading is often generated by differences between entries which appear in both lists; but the predisposition to believe that the

minor details which excite suspicion, I have found nothing which would affect the statistical analysis in more than a very marginal degree. Thus, the discussion which follows is based upon acceptance of the texts as printed (except where noted) and upon the editors' identifications of people who appear in both lists (although some of these are naturally only tentative).<sup>24</sup>

The general character of the lists preserved in G and F is clear enough, although it is impossible to determine precisely how they fit into the pattern of record-keeping practices in the fourth century. Both texts record the names of landholders and their holdings in an alphabetical order which is not invariably observed (note in particular the lists of κληρονόμοι at G 95 ff. and 427 ff., F 297 ff. and 641 ff.). Each text as we have it consists of two main sections in which are listed first, landholders who are resident in the West Citadel Quarter of Hermopolis<sup>25</sup> and second, landholders who are resident in the neighbouring city of Antinoopolis.<sup>26</sup> It seems fair to assume that the complete registers will have contained the names of landholders and their holdings from all four quarters of Hermopolis, together with those of Antinoites who held land in the Hermopolite Nome. For the purposes of comparison between the registers it is important to note that in F both the Hermopolite and Antinoite sections are technically complete in that no entries appear to be lost, although a few of the surviving entries are missing some words or figures. By contrast, neither section in G is complete. The first surviving name in the Hermopolite section is Hermodoros son of Apollonios and several of the preserved leaves may have lost some entries at the bottom; the same applies to the Antinoite section, although it is alphabetically complete. The effect of this is that we are not entitled to gauge what might have appeared in G from what does appear in F, and the differences between the lists can only be regarded as significant when the same landholders appear in both G and F but with different holdings, or when F (the later of the two lists, see below, pp. 143–4) lacks an entry which is in G.

There are certain differences between the preserved texts of G and F which deserve to be noted. F 1–18 contains the end of a list of names and holdings which is presumably that of one of the other quarters of Hermopolis; this is followed by an account of money received in Antinoopolis (F 19–22) and an εἰσπραξις Ἀντινόου which lists amounts of cash against the names of individual Antinoites who appear as landholders in the Antinoite register (F 24–42). At the end of the Antinoite register there is a short list of additional amounts of land against the names of some Antinoites who appear in the main list (F 801–14).<sup>27</sup> G has no sections corresponding to those just described for F, but it does have one important detail which F lacks; it provides a total of the holdings of Antinoites in both categories of ἰδιωτικὴ and δημόσια (G 589–90).

Most of the entries in both G and F follow the same form: the name of the owner is followed by a list of his holdings identified by reference to their location in one or other of the *pagi* of the Hermopolite Nome; the holdings themselves are classified either as ἰδιωτικὴ ('private') or δημόσια ('public') land (the significance of this distinction is discussed below, pp. 148–9). Some variations from this pattern occur. There are numerous examples of holdings assigned to the κληρονόμοι of certain individuals; these must be the heirs of

same person is likely to have roughly (or precisely) the same amount of land in both lists begs the crucial question about the significance of the differences (below, pp. 154–5). To require verification of such differences before attempting to analyse their import seems to be a counsel of despair, especially since there could, in theory, be a mistake in any entry in G or F. The only sensible *modus operandi* seems to me to take the texts as they stand, since the editors' readings appear generally reliable. If the conclusions which are drawn from them seem wildly implausible, the expert reader is free to decide whether the fault lies in my use of the data or in the figures presented in G and F. In so far as is practical, I attempt to present the statistical data in such a way as to make it clear where the analysis is vulnerable.

<sup>24</sup> The following identifications rejected: G 231 ≠ F 455 because the Olympiodorus is probably a tenant of

two different owners; G 544 ≠ F 763, the same person, but he seems to be tenant in G, owner in F; G 352 ≠ F 150, despite the editors' remarks on p. 26 explaining why the person appears in the Antinoite section of G and the Hermopolite section of F (the name and patronym are both very common). Note also that I take G 273 and G 281 as referring to the same person.

<sup>25</sup> On the topography of Hermopolis see the works cited in n. 19. Φρουρίου λιβάς, sometimes called West Fort or Garrison, is the north-western sector of the town.

<sup>26</sup> This is demonstrated beyond any doubt by the editors in their introduction, pp. 24–6.

<sup>27</sup> Following this, at 816–24 is a further list of names and amounts; the editors do not make it clear in their transcription that this has been crossed out on the original.

deceased persons who had not yet come into full possession of the property, or whose title to the land had not been properly registered. In a few cases land is registered in the ὄνομα of another person; Jones saw no difficulty in supposing that the land was recently acquired and still registered in the name of the previous owner.<sup>28</sup> A large number of entries include the words διὰ τοῦ δεινός. Jones took these to be tenants or agents who *registered* the holding in the owner's name, but this is not entirely satisfactory since the person first named ought logically to be the registered owner of the land and there would be little point in mentioning another person unless he had some specific responsibility for the holding.<sup>29</sup> The editors rejected the notion that these were cases in which the tenant was responsible for paying the taxes on the land, but it is difficult to see what other factor would necessitate inclusion of the tenant's name.<sup>30</sup>

In addition, there are small numbers of holdings described as οὐσίαι. The status of οὐσία πολιτική, the entries for which follow the form ὁ δεινός ὑπὲρ οὐσίας πολιτικῆς, seems clear enough; these will be estates belonging to the city of Hermopolis and the people named presumably held the land under lease, but it is interesting to note that these holdings are categorized into ιδιωτική and δημόσια, like the holdings of individuals.<sup>31</sup> Similarly, the ownership of the holding described as οὐσία ἐκκλησίας (G 534) presents no problem. But the status of the other οὐσίαι (Οὐλπιανή, G 527, F 747, 751; Πλατωνική, G 529, F 749; στάβλου, G 531, F 752) is more difficult to determine.<sup>32</sup>

There are other Hermopolite documents of similar date and content (principally *SPP* v 120 and *P.Lips.* 101) which may be compared with G and F, but it remains difficult to specify the precise purpose of such compilations. *P.Lips.* 101, which is probably earlier than G and F, may be part of a survey made according to area and could be part of the documentation from which registers like G and F were compiled.<sup>33</sup> In one important respect it gives more information than G and F, for it states whether or not the land was sown. *SPP* v 120 looks like a survey and categorization of holdings on a village-by-village basis. The holdings are divided into three main categories, μητροπολιτικά, κωμητικά and ταμιακά, by which we should probably understand holdings of residents of the metropolis, holdings of villagers and holdings belonging to the fiscus.<sup>34</sup> These are then subcategorized according to the quality, state and use of the land. It seems clear that none of these documents on its own provides enough information to serve as a basis for tax-assessment or collection. Yet each clearly presents some of the information which is fundamental to those procedures. *SPP* v 120 might enable the tax authorities to determine the composition of the assessment on an individual village whilst G, F and *P.Lips.* 101 show the individual liability of landholders resident in the metropoleis, though this might need to be further refined by reference to the quality and state of the land. At any rate, if my view of the difference between 'public' and 'private' land is correct (below, p. 149), G and F cannot be unconnected with the taxation procedures. But it may be correct to see these codices simply as working notebooks, which could be complemented by other types of

<sup>28</sup> Jones, 245–6; others have seen it as simply equivalent to διὰ (*P.Cair.Isid.* pp. 56–7, *P.Oxy.* XLIV, 3169. 155 n.); Sijpesteijn-Worp (p. 22) think that the person referred to by the phrase ὄνοματος τοῦ δεινός will be the owner and the person first named the lessee, which at least has the merit of differentiating such cases from those which use διὰ and is perhaps supported by *P.Abinn.* 50.

<sup>29</sup> Jones, 245. There ought to be something other than mere tenancy to explain the inclusion of another name, since it is quite impossible to believe that these examples represented all of the cases in which land was leased out to tenants (cf., for example, *P.Charite* 1–7).

<sup>30</sup> *P.Landlisten*, p. 22; there seem to be few cases of fourth-century leases in which the tenant is responsible for paying the taxes. Johnson and West, 84 cite *SB* 7675 (= *P.Cair.Isid.* 103), in which the tenants pay the taxes in lieu of rent; see also *P.Cair.Isid.* 102, 104. Boak and Youtie, *P.Cair.Isid.* pp. 56–7 thought that the word διὰ in this context indicated that the tenant was paying the

taxes. Cf. perhaps *P.Charite* 14, 26.

<sup>31</sup> Jones, 246, cf. *P.Landlisten*, pp. 21–2; possibly in these cases the tenants were responsible for the payment of taxes. Note that in G 184 the phrase ὑπ(ἐρ) οὐσίας πολ(ιτικῆς) has been inserted above the line, whilst in the equivalent entry in F (406) it is omitted entirely; presumably the tenant could have purchased the land from the city (the opposite process is implied in *P.Lips.* 101, 11).

<sup>32</sup> Jones, 246 supposes that these were civic estates belonging to Antinopolis.

<sup>33</sup> cf. Jones, 253.

<sup>34</sup> For imperial estates see Johnson and West, 33 ff., A. H. M. Jones, *The Later Roman Empire* (1964), 415 ff.; it is difficult to estimate how much land might have fallen under the rubric of ταμιακά; *P.Lips.* 101. 21 has an estate of 6 arourai, formerly in private ownership, and the amounts in *SPP* v, 120 are very small. For the collection of rents from δεσποτικά κτήσεις see *P.Abinn.* 3. Note that such properties would also be liable to taxation, Jones, op. cit., 419–20.

document, containing a summary list of land held by metropolitans residents. This view is supported by the rather haphazard and inaccurate organisation of the lists, by the many marginalia and by the various check marks placed against some entries, in particular the *zeta*-sign.<sup>35</sup> These features, like the mysterious absence of any holdings in the 7th pagus of the Hermopolite Nome (see below, p. 152), force us to recognize the certainty that we do not have in G and F the complete holdings of all the individuals listed.

#### THE DATE OF THE REGISTERS

The dating of G and F has been a matter of some controversy and the problem needs brief discussion here. Both the absolute and relative dates of the registers need to be established, but it is unfortunately not possible to reach certainty on either issue.

On the question of the absolute date, some progress has been made since the new edition appeared. The editors argued that F, which they considered to be the later of the two lists, should be dated within the period A.D. 311/3 and 316 or 325. Bagnall has produced powerful arguments against such an early dating, the most cogent of which is that the tax assessments listed in F 19–42 would seem to make a date after A.D. 340 essential.<sup>36</sup> Worp's reservations are not really convincing.<sup>37</sup>

Three further considerations may now be advanced. First, there is the evidence for the wealthy family of the descendants of Hyperechios. Three sons of Hyperechios can be identified, Heracleon, Ammonios and Olympiodoros.<sup>38</sup> Heracleon appears in both registers (G 37, F 241), as do the heirs of Ammonios (G 97, F 299). Olympiodoros appears in neither, but a son named Pinoution is in both (G 186, F 408) and another son Akylas is in F 64 (the corresponding part of G is missing). The most natural conclusion, though not the only one possible,<sup>39</sup> is that G and F are both to be dated after the death of Olympiodoros son of Hyperechios. A recently published text shows this Olympiodoros still alive;<sup>40</sup> it can be dated only tentatively by its reference to indiction years numbered 6–9 and these are most likely to be the indictions of the years A.D. 332–6. This would support the arguments for a dating after A.D. 340. Secondly, a point mentioned, but perhaps not sufficiently emphasized by Bagnall: Aurelia Charite, daughter of Amazonios, appears in both registers (G 252, F 466).<sup>41</sup> The datable papyri in the archive of Aurelia Charite fall in the range A.D. 325–48.<sup>42</sup> This alone ought to lead us to place the Hermopolite registers approximately in this range and certainly allows a date after A.D. 340. Finally, a new prosopographical argument has been advanced, based on the identity of some of the bishops mentioned in the registers whose appointments fall after A.D. 346.<sup>43</sup> A *terminus post* of A.D. 347 is suggested by the appearance of Arion, an appointee of Athanasius (G 305, F 519). Thus a date close to A.D. 350 for both G and F would best fit this external evidence, and this is assumed in the subsequent discussion, although there is no argument which is closely tied to the dating.

As for the relative dates of the lists, it is clear from the large number of names which are common to both texts and from the fact that estates recorded for some individuals in one list are registered as belonging to their κληρονόμοι in the other that the interval is not likely to be more than a few years. The editors took the view that G is the earlier of the two lists and the strongest evidence in favour of this is the fact that F contains entries for the κληρονόμοι of individuals who appear as owners in G.<sup>44</sup> At the same time, the appearance

<sup>35</sup> These marks occur only in F, where the editors understand the *zeta*-sign as ζ(ήτε), presumably indicating that the entry needed checking; cf. *P.Sakaon* 4. ii. 12 (= *P.Princ.* 134).

<sup>36</sup> Bagnall, *BASP* 16 (1979), 159–68.

<sup>37</sup> *P.Charite*, pp. 5–9, esp. p. 6.

<sup>38</sup> For this family see the discussion in the commentaries to *P.Strasb.* 618 and 691. The attempt to show that the death of Hyperechios should fall in the period A.D. 292–8 (*P.Strasb.* 618 at p. 26) rests on a prosopographical argument which should be discounted in view of the weight of the other evidence.

<sup>39</sup> Alternatively, Olympiodoros might not have lived

in the West Citadel Quarter; or have owned property only in the 7th pagus, which does not appear in G and F (see below, pp. 152–3).

<sup>40</sup> P. J. Sijpesteijn, K. A. Worp, *ZPE* 32 (1978), 243–57, no. 7 at 253 f.

<sup>41</sup> Bagnall, *BASP* 16 (1979), 167.

<sup>42</sup> *P.Charite* 13 (A.D. 325), 8 (A.D. 348).

<sup>43</sup> W. Van Gucht, *Atti del XVII Congresso internazionale di Papirologia* (1984), 1135–40.

<sup>44</sup> *P.Landlisten*, pp. 12–14, cf. Bagnall, *BASP* 16 (1979), 160. The combined weight of the arguments in favour of the order *P.Lips.* 101, G and F is persuasive.

of certain κληρονόμοι in both lists (e.g. the heirs of Ammonios son of Hyperechios at G 97, F 299) would suggest very close proximity, if we could be sure that such entries denote cases in which the formalities of division and registration by the heirs had not yet been completed. But it is as well to be cautious since we do not know enough about such procedures to estimate what the likely time-lag might be. It should be noted, however, against the case for the priority of G, that there is one apparently clear case in which G lists the heirs of an individual who appears as an owner in F (G 487, F 509). This may be, as the editors suggest, simply a mistake in one list or the other; it is most probable that the compilers of F were, in this case, working from outdated documentation but again, we do not know enough about the methods of compilation to be sure. Despite this apparent anomaly, the weight of the evidence (including the deletion of the entry at F 328–34 which appears undeleted at G 104–10) favours the editors' view of the priority of G and a short interval between the two lists.

It should be emphasized, however, that even if this hypothesis were to be proved wrong, the validity of most of the statistical analysis which follows would not be substantially affected, since there is comparatively little discernible change in the over-all pattern of land tenure; it would, however, undermine the basis of the discussion of the differences between the holdings in G and F and the movement of land which they suggest (p. 154). A much more seriously disturbing possibility is that G and F are simply different contemporary versions of the same list, and it is impossible to prove conclusively that this is not the case; it could, for example, be argued that these are merely rough drafts with many omissions and discrepancies. But the very large number of differences between G and F (landholders appearing in one but not the other, and different amounts of land registered to many who appear in both) renders this most unlikely. And it is almost inconceivable that contemporary lists should contain attestations of living landholders in the one list and their κληρονόμοι in the other.<sup>45</sup>

The survival of two almost contemporary lists of virtually identical character from the same place might seem to suggest that they must have been occasioned by some special situation, given that there is really nothing else strictly comparable. But we should not be misled by their state of preservation and their scale. Apart from the factor of chance in their survival, which would allow us to suppose that in theory many such lists might turn up, we should remember that there are in fact examples of smaller-scale surveys of this kind from the fourth century, as well as fragments of documents which might originally have been comparable in size to G and F. As for special circumstances, even if the compilation of such lists of the landholders of Hermopolis and Antinoopolis were occasioned by some peculiar local need in a restricted period of a few years, this hardly makes the conclusions to be derived from a comparative analysis any the less valuable.

#### STATISTICAL ANALYSIS

##### 1. *Method*

It is important to emphasize at the outset that I have not thought it appropriate to concentrate on the Hermopolite sections only of G and F. Any attempt, however speculative, to put the information in the land-lists into the context of landholding in the nome as a whole must take account of the Antinoite landholders as well as of those resident in Hermopolis; Antinoites owning land in the Hermopolite are residents of a metropolis

<sup>45</sup> In spite of the remark of Duncan-Jones, *JRS* 71 (1981), 199 it seems to me difficult to use the data in G and F to analyse patterns of inheritance and the mechanisms by which fragmentation of property was counteracted. This is partly because the lists themselves do not tell us how the landholdings were managed or, indeed, whether they were contiguous or separated, leased out or worked by a paid labour-force. The family of Hyperechios is a case in point. One son of Hyperechios, Herakleon, owns 1,363 arourai spread over 7 pagi (F 241); the heirs of another, Ammonios,

have 1,370 arourai in one pagus (F 299); the sons of the third of Hyperechios' sons, Olympiodoros, have 1,002 arourai (Akylas, F 64) and 1,098 arourai (Pinoution, F 408), spread over 8 and 7 pagi respectively. These figures are all taken from F, the later of the lists. Unfortunately, only the case of Herakleon can be directly compared in G and the comparison shows that his holding in the earlier list was 2,093 arourai (G 37). It seems to me that we can draw no conclusion as to whether Hyperechios originally owned all of this land or why Herakleon's holding decreased.



very close to the Hermopolite Nome. Hence the figures in both sections of G and F are given due weight, with the characteristic differences duly observed. Previous analyses have placed little or no emphasis on the landholders resident in Antinoopolis.<sup>46</sup>

The entries themselves present various technical difficulties, in handling which I have, of necessity, had to be somewhat arbitrary. One departure from Jones's practice is that those estates which are registered in the names of two people are treated as one holding, not two. If such estates were jointly owned, as the form of the entry seems to imply, then it seems more justifiable to treat them as a unit in considering the pattern of distribution of landholdings.<sup>47</sup>

The main difficulty has been in deciding how to treat those holdings which are only partially recorded because some of the figures have been lost. It is evident that to employ the strict principle of treating as partial those holdings for which even a fraction of an aroura is lost would invalidate a very large number of entries. Consequently, holdings in which *only* fractions are missing are treated as complete; this could entail only a very slight distortion in the over-all picture. Other kinds of losses may cause a slightly higher degree of distortion. First, there are those cases in which the holding of δημόσια, which more often than not comes at the end of a line, is wholly or partially lost. I have treated these entries as technically complete on the ground that the public land generally represents a fairly small proportion of an individual's holding; the total amount of public land as opposed to private land in the lists is so small that these few omissions are unlikely to distort the over-all picture to any great degree, but it does mean that the number of 'complete' holdings which include an element of public land is slightly smaller than it ought to be.

Second, there are those cases in which the amount of private land recorded is lacking one or more digits (other than fractions). I have thought it justifiable to treat such cases as complete if it is evident that the missing digit(s) can constitute only a small proportion of the total holding. Thus, for example, G 378 is incomplete because the reading ρ[ allows a possible loss of up to 99+ arourai, almost 50 per cent; but F 763 is reckoned 'complete' since the holdings are ρι., ιη, θις, λβ and it is clear that the missing amount of up to 9 arourai is a small proportion of the total holding. Some smaller holdings have been reckoned complete even when the proportion of land lost is rather greater, on the ground that the loss would not affect the over-all picture very much (e.g. G 276, where the difference between the possible holdings of 21+ and 29+ arourai would not significantly affect the statistics). In a very few cases comparison between entries for the same landholder in G and F suggests that the loss is very slight (e.g. G 24 = F 231); such a procedure prejudices the question of the differences between such entries in the two lists but it at least has the virtue of minimizing rather than maximizing the differences. The most difficult such case concerns the entries at G 104 and F 328 (see the note to this entry in Table VIII). The over-all effect of these procedures is to reduce the number of genuinely incomplete entries to a minute proportion of the whole.

One final, but very minor source of distortion is that in totalling the landholdings I have ignored all fractions of less than 1/4.<sup>48</sup> This has been done in deference to ease of calculation and may seem cavalier. But the total amount of land thus disregarded in F, the longer of the two lists, cannot be more than 100 arourai, 0.4 per cent of the preserved total in F. In view of the difficulty in calculating fractions of 1/8, 1/16, 1/32 and 1/64, insistence on accuracy to the last 1/64 aroura seems merely pedantic.

## 2. *Analysis of the data*

The figures compiled and presented in Table I show clearly that the Hermopolite section of F is, because most nearly complete, our best guide to the over-all picture which can be extracted from these documents. Hermopolites held somewhat more than 16,000

<sup>46</sup> e.g. Jones, 252; Duncan-Jones, 14-15 notes the fact that average Antinoite holdings are smaller (cf. below, p. 146).

<sup>47</sup> cf. Jones, 246.

<sup>48</sup> Except for the handful of cases in which there is a holding of public land of less than 1/4 (e.g. G 63, F 290).

arourai of land, of which approximately 8.25 per cent was public land. Although the Hermopolite section of G is of much less value because of the large and incalculable number of lost entries, it is interesting that the proportion of public land in this too is close to that given by F, at just over 8.3 per cent. The Antinoite section of G is also subject to the same limitations because of its incompleteness, but it is valuable in that it gives us a total for the Antinoite holdings of 9,468 arourai of private land and 460 arourai of public. Here the proportion of public land is rather smaller, about 4.6 per cent. These totals also allow us to calculate by a simple subtraction that the losses in this section amount to about 2,987 arourai of private land and 158 arourai of public, almost a third of the total. Some comparison might be attempted with the Antinoite section of F where the total of preserved entries is 8,343.25 arourai; this includes 4 incomplete entries, one of which is an ousia. Examination of these incomplete entries suggests that the loss is not likely to be more than about 250 arourai,<sup>49</sup> and it is a reasonable working hypothesis that if F had presented a total in the Antinoite list it would not have exceeded 8,600 arourai of private and public land together, an over-all loss (given that G is the earlier list) of about 1,300 arourai. This is, in itself, not incredible and it fits the picture which emerges from a detailed study of the differences between individual holdings recorded in the Antinoite sections of G and F (below, p. 154 and Table VIII). But there is no way of telling whether the diminution of Antinoite holdings was a trend or merely a temporary phenomenon; or what happened to the land which the Antinoite landholders lost. For these reasons I have taken the (rounded-up) higher figures of 9,500 arourai of private land and 500 of public as likely maxima for Antinoite holdings in considering the part played by town residents in the picture of landholding in the nome as a whole (below, pp. 147-8).

The mean holdings presented in Table II are of limited significance. Taken in conjunction with the figures which indicate the pattern of distribution of land in the Hermopolite Nome (below, p. 152 and Table IV), they emphasize the fact that few individuals held amounts of land close to the mean.<sup>50</sup> The calculations are made on the basis of complete entries only and exclude the ousiai. The means in each of the categories of private and public land are calculated not from the whole body of landholders, but only from those who held land in each category; thus the mean holding of public land for Hermopolites in F was 13.55 arourai but only 90 of the 235 Hermopolite landholders had any public land.

Again, the figure in the Hermopolite section of F is likely to be the most reliable, showing an over-all mean of 63.36 arourai when the total of public and private land is divided by the total number of landholders. The mean for Antinoite landholders in F, including the estimated lost figures, would be about 39 arourai. This is not too far from the actual figures which the Antinoite lists in G and F yield and it may be regarded as a secure indication of the lower level of Antinoite holdings over all. The means derived from G are, however, unlikely to be of much value in any other respect.<sup>51</sup>

It is worth considering whether the figures presented might enable us to determine the part played by the town-dwelling landholders in the picture of landholding in the nome as a whole and the relative incidence of public landholding to private. Much of the argument which follows is conjectural and circumstantial, but it seems to me unlikely to be seriously misleading.

<sup>49</sup> F 624 reads: .]ζ Δ'; since the corresponding entry in G has κζ Δ', it might be reasonable to guess that the same figure stood in F. F 758 has ρ[.] φη of private land and εδ' of public and the maximum possible would be 195.5 + arourai (note that G 540 has 120.5 arourai). F 617 + 812 give a total of 259.5 arourai but one figure in 812 is completely lost; the amounts in this supplementary section are not very large, so we are perhaps safe in reckoning that the holding is unlikely to have exceeded 300 arourai in all (in G 399 this man has 207.5). F 751, the ousia, reads ρ[; therefore a maximum of 199 + arourai (which I have reckoned as 200 for convenience). At F 755 there is an amount of public land lost but this

is unlikely to be more than a few arourai and I have not included this in the calculation.

<sup>50</sup> The same is true for the picture of landholding at Kerkeosiris in 116/115 B.C. (below, pp. 151-2) as is noted by Shelton in *P.Teb.* IV, 1103 introd., p. 38.

<sup>51</sup> There is no reason to believe that the lower means in G Herm. reflect a reality; there are so many entries lost in this section that it is far more probable that the figure is simply biased on the low side; note that only one of the large entries discussed in n. 45 above appears in G in a complete form. For the lower Antinoite means cf. Duncan-Jones, 14-15.

Hermopolites living in the West Citadel Quarter held a minimum of about 15,000 arourai of private land and 1,400 of public (F Herm., Table I, B i (the figures are rounded up)). If the Hermopolite landholders were spread evenly about the town, the four quarters of Hermopolis would yield total holdings of 60,000 and 5,600 arourai of private and public land.<sup>52</sup> This figure would be too high if the West Citadel Quarter could be shown to be more residential or more prosperous than the other quarters.<sup>53</sup> It might perhaps reasonably be regarded as a maximum. Antinoite landholders account for 9,500 arourai of private and 500 arourai of public land (Table I, A ii (the figures are rounded up)). To these figures we must add the conjectured holdings of town residents in the 7th pagus, which does not appear at all in either G or F. If it is reasonable to suppose that landholding in this pagus will have been dominated or monopolized by the town residents (see below, p. 152), then we must add all of the agricultural land which this pagus will have contained. What this amount was is a matter of pure conjecture and we can proceed only by rule of thumb. There were seventeen pagi in the nome and we might suppose that the 7th contained a maximum of one seventeenth of the total agricultural land in the nome; probably less if, as I suppose, the town of Hermopolis was situated in the 7th pagus (below, p. 152). An actual figure, which I would regard as a maximum, has to be derived from a total amount for the nome which is wholly unknown. Jones's estimate was 400,000 arourai;<sup>54</sup> this would give a maximum figure of (let us say) 23,000 arourai for the 7th pagus. Purely for the purpose of illustration, we might offer an alternative, and lower, figure of 300,000, which would yield (let us say) 18,000 arourai for the 7th pagus.

Thus we might arrive at over-all maxima for town residents' landholdings of either 98,600 arourai (out of 400,000) or 93,600 arourai (out of 300,000) made up as follows:

Hermopolite private land: $4 \times 15,000$	60,000
Hermopolite public land: $4 \times 1,400$	5,600
Antinoite private land:	9,500
Antinoite public land:	500
7th pagus	23,000/18,000

Table III, A presents a breakdown of these figures in a schematic form. The totals for public land require a word of explanation, because it is necessary to estimate how the land in the 7th pagus might have been split as between the categories of private and public land. The complete entries in F Herm. show that public land is slightly more than 8 per cent of the total land recorded, and this percentage has been applied to the conjectural figures for the 7th pagus.<sup>55</sup>

The next stage of the argument centres on the proportion of public to private land in the nome as a whole. There is no direct evidence for the Hermopolite Nome but there is, fortunately, a text from the neighbouring Oxyrhynchite which does show the proportion and which must be fairly close in date to G and F.<sup>56</sup> In the Oxyrhynchite the public land was 19.2 per cent of the total recorded area.<sup>57</sup> Table III, B presents conjectural figures for the Hermopolite which are based on the assumption that the Oxyrhynchite proportions of roughly 81 per cent private land and 19 per cent public are also likely to be appropriate to the Hermopolite; at least, more appropriate than figures from the Fayum which, in my

<sup>52</sup> This is the assumption made by Jones in his calculations, 246 ff.

<sup>53</sup> It is impossible to come to any secure conclusion on the basis of the topographical evidence (see the works cited in n. 19 above). It seems clear that this part of the town was quite densely packed with housing, so the figure might reasonably be regarded as maximal rather than minimal.

<sup>54</sup> Jones, 248. That this estimate is perhaps too high might be suggested by the figures from the Oxyrhynchite (see nn. 56 and 57).

<sup>55</sup> The figures for the 7th pagus are vulnerable because of uncertainty about the size and nature of the

area (see above, and p. 152). The estimate may well be too high, as may the guess at the size of the nome as a whole. It would, of course, follow from postulation of a smaller area for the nome that the proportion held by town resident landlords was greater; Jones's estimate of one sixth (p. 248) looks to be on the low side.

<sup>56</sup> H. C. Youtie, *ZPE* 32 (1978), 237-40, R. S. Bagnall, K. A. Worp, *ZPE* 37 (1980), 263-4.

<sup>57</sup> 163,687 arourai of private land and 38,857 of public; this is land on which taxes were paid in wheat and therefore presumably excludes vineyards and orchard land etc.

view, led Jones to overestimate the amount of public land in the Hermopolite.<sup>58</sup> From these figures, a simple process of subtraction will enable us to calculate the amounts of private and public land held by villagers and the proportion of their holdings which each category constituted (Table III, C).

The figures thus produced can, at best, be regarded only as broad approximations and they are contingent upon certain assumptions which might easily prove to be inaccurate. With this caveat, they indicate that town residents might have held a quarter, or perhaps even as much as about 30 per cent, of all the land in the nome; that of their holdings about 92 per cent fell in the category of private land and about 8 per cent in the category of public. Villagers will have held the remaining three quarters, or perhaps about 70 per cent, of the land in the nome, and their holdings were split in the proportion of about 76 per cent private to 24 per cent public land.

One of the other papyri edited in *P.Landlisten* offers the possibility of checking the general plausibility of this picture. *SPP* v 120 contains, in part, a village-by-village survey which gives summary totals for land in the Hermopolite in the categories of μητροπολιτικά, κωμητικά and ταμιακά; the first two terms must refer to land held by residents of the metropolis and land held by villagers, respectively (for ταμιακά see above, n. 34). Unfortunately, the sub-headings in the text are not entirely unambiguous, but it seems most likely that lines 82–118 record quantities of private and public land from various villages and their πρακτορία which fall into the general category of κωμητικά.<sup>59</sup> The combined totals for seven localities can be calculated with some degree of assurance, despite the partial loss of one figure,<sup>60</sup> as approximately 3,203 arourai of private land and 1,220 arourai of public. Thus, the land in these villages was divided in the proportion 72·4 per cent private: 27·6 per cent public land. Again, this can only be regarded as a broad approximation, but it does seem to indicate that the estimate of the general configuration of village landholding is in the right area.

So far no attempt has been made to specify the substantive differences between the categories of private and public land, δημόσια γῆ and ιδιωτική γῆ. This must now be done. We are surely bound to reject Jones's suggestion that δημόσια γῆ, which should, as he thought, be substantially the same as the land sometimes described as βασιλική γῆ (especially in the Fayum),<sup>61</sup> was still effectively state-owned land in the mid-fourth century; and that the holding of this land arose from the practice of ἐπιβολή, compulsory assignment of state-owned land to the owners of private land.<sup>62</sup> That βασιλική γῆ was in true private ownership in the fourth century is clearly demonstrated by the fact that it could be bought and sold by individuals and the term used to denote possession of such land is the verb κεκτήσθαι. The same appears to be the case with δημόσια γῆ.<sup>63</sup> The Oxyrhynchite text *P.Mich.inv.* 335 gives us a strong clue as to the distinction between δημόσια and ιδιωτική. δημόσια was taxed at a higher rate than ιδιωτική; the text indicates a

<sup>58</sup> Jones, 254, analysing the holdings at Theadelphia on the basis of *P.Sakaon* 4 (= *P.Princ.* 134, A.D. 336) which is incomplete; the amounts of private and royal land (see below, n. 61) are approximately equal and the same is true somewhat earlier at Karanis, see *P.Cair. Isid.* 11 and 13. It may well be that the Fayum contained more royal land than some other areas, for historical reasons.

<sup>59</sup> The difficulty is pinpointed by the editors, *P.Landlisten*, pp. 112–13; the character of the entries changes after line 81; up to this point the text is clearly dealing with μητροπολιτικά, but from line 82 onwards it deals with the πρακτορία of various villages but it is not until line 100 that we find the heading λοιπ( ) κωμητικῶν. The fact that it does not appear before line 82 may simply be an error of omission; or perhaps the nature of the entries was self-explanatory.

<sup>60</sup> In line 113 where the figure for sown private land in the πρακτορία of Timonthis is .φ.; comparison with the other figures in this section and with those for the village of Timonthis in lines 100–9 suggests that the first digit is hardly likely to be anything other than 'A', and I have calculated this figure at 1,500 arourai.

<sup>61</sup> See above, n. 58. Discussion of the possible differences between the βασιλική and δημόσια γῆ is outside the scope of this article. In the earlier period both terms refer to state-owned land; the difficulty lies in deciding whether δημόσια is a general term, with βασιλική as a sub-category, or whether they are two different and substantive categories, see J. L. Rowlandson, *Landholding in the Oxyrhynchite Nome 30 B.C.—c. A.D. 300* (Oxford D. Phil. thesis, 1983), 37–9. By the mid-fourth century, however, the question is no longer pertinent. Note that at *SPP* v, 120. 83–4 the village of Nagogis is credited with 360 arourai of ιδιωτική and 158 of βασιλική, the only appearance of the term in the Hermopolite texts in *P.Landlisten*. The entries for other villages all have ιδιωτική and δημόσια, which suggests simply the survival of a terminological anomaly at Nagogis.

<sup>62</sup> Jones, 247. This seems to have involved a very small amount of land even in the earlier part of the fourth century, see *P.Cair.Isid.* 12, introd. and p. 39.

<sup>63</sup> *P.Cair.Isid.* pp. 38–9, 99·5–8; cf. *P.Sakaon* 4 (= *P.Princ.* 134) where the κατ' ἀνδρα κωμητικῆς κτήσεως included βασιλική and ιδιόκτητος.

ratio of 3:1, though it might be slightly lower if the various additional charges on ιδιωτική are taken into account.<sup>64</sup> It seems safe to assume that the tax-rate on δημόσια was between two and three times that on ιδιωτική. It is difficult to point to any other substantial difference between the two categories of land in the mid-fourth century. The evidence of G and F, too, supports the view that these terms pertain to tax-rates and not to status of ownership. The ousiai which are not registered under the names of individuals are divided into δημόσια and ιδιωτική; so is the ούσία πολιτική, which was presumably owned by the city; so too the ταμιακά in *SPP* v 120, which appear to have retained taxable status in spite of being the property of the fiscus (see above, n. 34).

It seems absurd to make any distinction between public and private land as regards the status of ownership and it is surely legitimate to conclude that by the mid-fourth century land in both these categories was in the hands of individual landholders who *owned* it. The distinction pertains only to tax-rates (with variations for different sub-categories within δημόσια and ιδιωτική). As for the ownership of public land, only a minority of town residents held any at all and those who did generally had a much smaller amount of public land than private. Over all, village landholders held proportionally more public land than their town-dwelling counterparts. Thus, from the point of view of tax-liability, the town residents were, in general, in a more favourable situation than villagers. But if our estimates are roughly correct, villagers were paying higher tax rates on only about one quarter of their holdings over all. It follows that, even for them, the economic ill effects of the higher tax rate on public land were limited.

Unfortunately, there are very serious difficulties in any attempt to see how this will have affected the position of the individual landholder. For those who are recorded as holding really minute amounts of land, it seems inconceivable that these were their only source of income; some had trades or other means of livelihood, others will perhaps have been tenants as well as small-scale owners.<sup>65</sup> For the larger landholders, there are too many unknown variables to be taken into account, in particular the quality of land and quantity of yield and possible differences in modes of exploitation, levels of rental and overhead costs. Thus, land might be sown with crops other than wheat, of lower nutritional and market value, either regularly or in rotation.<sup>66</sup> Yields will consequently vary, although a ten-fold yield on good wheat-land is perhaps by no means too high an average.<sup>67</sup> Rentals might be as low as 2 artabs of wheat per year, as high as 5 or 6, and equal division of the crop between owner and tenant is not uncommon.<sup>68</sup> Taxes are normally paid by the owner, but there are exceptions.<sup>69</sup> And finally, there is the difficulty of estimating the scale of wealth represented by any computation of income in terms of crop yield.<sup>70</sup>

This indicates the limitations of any crude calculation such as might be made for a large landholder like Aurelia Charite, whose maximum known holding is approximately 484 arourai of private and 35 arourai of public land, and who is known to have leased out parcels of her land.<sup>71</sup> If all this land were leased out, if the average yield were 10 artabs of wheat per aroura, if the average rental were half this amount and if the land-tax was paid at the rate of about 1.2 artabs per aroura for private land and 3.5 for public,<sup>72</sup> she would be left with about 1,800 artabs of wheat. But further deductions should be made for other taxes and overheads—provision of seed-corn (normally 1 artab per aroura), supplying oxen, maintaining irrigation works and so on. A conservative estimate might leave her a clear profit of perhaps as much as 1,000 artabs—the equivalent of the normal yearly food

<sup>64</sup> R. S. Bagnall, K. A. Worp, *ZPE* 37 (1980), 263–4.

<sup>65</sup> See below, n. 76, *P.Cair.Isid.* 98–100.

<sup>66</sup> R. P. Duncan-Jones, *Chiron* 6 (1976), 261.

<sup>67</sup> N. Lewis, *Life in Egypt under Roman Rule* (1983), 121–2, cf. P. Mayerson, *CQ* n.s. 24 (1984), 243–5.

<sup>68</sup> Broadly contemporary examples include, from the Hermopolite: *P.Charite* 2 (half shares?), 3 (4 art. plus 3,000 dr. in hay), 7 (2 art.), 8 (half shares), *P.Lips.* 18 (6 art. plus 1,200 dr. in hay, 5 art. plus ? dr.), 19 (4 art.), *SB* 8019 (average of 2 art., village land), *P.Flor.* 17 (half shares); from the Arsinoite, *BGU* 349 (2 art.), 408 (3

art.), 586 (half shares), *P.Sakaon* 67 (half shares), *P.Col.* 180 (half shares); from the Oxyrhynchite, *P.Bon.* 39 = R. S. Bagnall, K. A. Worp, *ZPE* 52 (1983), 247–55 (6 art., 4 1/2 art., 5 art., half-shares).

<sup>69</sup> See above, n. 30.

<sup>70</sup> In general see R. S. Bagnall, P. J. Sijpesteijn, *ZPE* 24 (1977), 111–24, R. S. Bagnall, *Currency and Inflation in Fourth Century Egypt* (forthcoming).

<sup>71</sup> *P.Charite* 12, 2, 3, 7, 8.

<sup>72</sup> R. S. Bagnall, K. A. Worp, *ZPE* 37 (1980), 263–4.

allowance for over 80 labourers in the Roman period.<sup>73</sup> Clearly, in any scenario like this, the effect of the higher tax-rates on public land would be minimal.

However persuasive (or not) this might appear, it is impossible to achieve even this degree of crude approximation for the small landholder and/or tenant. It is very difficult to specify subsistence requirements for a family, for instance, so that any calculation of the number of arourai he would need can only be a guess and is hardly worthwhile, if we suppose that such a man might supplement his income by hiring out his labour or practise a trade in his town or village. But it is worth emphasizing again the apparently low level of the basic land-tax, even the higher rate on public land. And it is self-evident that the margin of uncertainty is too great for us to speak with any real confidence of landholders being taxed to the hilt or of tenants subjected to extortionate rentals. It is likely after all that both the government and the large owners will have adjusted the level of exploitation in such a way as to obtain their surplus whilst continuing to maintain a reasonable level of self-sufficiency for those who were exploited.

We may now move on to consider the pattern of land distribution among Hermopolites and Antinoites as it emerges from G and F. An important consequence of the argument that the distinction between private and public land has some economic significance but is of no importance for the status of ownership is that we do not need to preserve this distinction in considering the pattern of distribution. Thus, for each individual landholder, the amounts of public and private land can simply be totalled. The analysis takes account of complete entries only (see above, p. 145) and ignores all entries described as *ousiai*.

Table IV tabulates the holdings according to size categories which are purely arbitrary and used for the sake of clearer presentation. They show relatively few landholders with holdings at or just above the mean (Table II). The degree of equality or inequality of distribution is then measured by the Gini coefficient (Table V), a numerical way of expressing the Lorenz curve.<sup>74</sup> Since F Herm. provides us with the most nearly complete set of data, the figure of .815 should be regarded as the most reliable in the table. The lower figure of .794 in G Herm. might point to a slight increase in the degree of inequality of distribution over a short period of time, if G is the earlier of the two lists; but it is perhaps more likely to be accounted for by the fact that G Herm. may have failed to preserve as many as 100 entries and that this loss has biased the figure on the low side. If my estimate of the total Antinoite holding in F (above, p. 146) is near the mark, the figure of .622 represents a considerable difference between the pattern of distribution among Antinoites and that among Hermopolites. But it should be emphasized also that the overall figure for F (.758 or an estimated .753) is also significant, since the phenomenon of ownership of land in the Hermopolite Nome by town residents must take into account both Hermopolites and Antinoites.

Although land in the hands of Antinoites was somewhat more equably distributed than that owned by Hermopolites, all the coefficients for F show a relatively high degree of inequality of distribution. This points to a heavy accumulation of land in the hands of the wealthy. Naturally, the evidence can be taken as having application only to those landholders who were resident in the towns. But the range of the size of the landholdings themselves is very large. The degree of differentiation would, of course, be smaller if only restricted sectors of wealth were considered, but the value of the evidence of G and F is precisely that it might be expected to give us an accurate representation of the social and economic range in the towns.<sup>75</sup> This expectation is confirmed to some degree by those cases in which the rank, profession or occupation of the landholder is specified. These include bishops, magistrates and ex-magistrates of the town, people of military rank and

<sup>73</sup> D. J. Crawford, *Kerkeosiris* (1971), 130, R. P. Duncan-Jones, *Chiron* 6 (1976), 262.

<sup>74</sup> C. M. Dollar, R. J. Jensen, *Historian's Guide to Statistics* (1971) and cf. Duncan-Jones, 171-2 n. 41.

<sup>75</sup> Duncan-Jones, 21: '... comparisons between different land-registers (insofar as they are valid at all) are only practicable within the same sector of wealth.' I fail

to see why this restriction should be applied and I have not applied it in comparing the Hermopolite lists with the evidence for Philadelphia (below). The crucial factor seems to me to be the extent to which the registers give an accurate picture of the range of wealth in the area which they represent and I argue that this is the case for the Hermopolite and Philadelphia.

*officiales* as well as artisans and tradesmen (e.g. ἐριοκάρτης, μελισσοουργός, οἰκοδόμος, ὀνηλάτης, χαλκεύς).<sup>76</sup>

The very high degree of inequality of distribution of land is certainly significant and seems to contrast quite markedly with such evidence as is available for other places and other periods in the Roman Empire.<sup>77</sup> The most closely comparable picture perhaps emerges from the evidence for Magnesia-on-the-Maeander, but even here the inequality of distribution is less violent.<sup>78</sup> What our Hermopolite lists will not allow us to do, however, is to fit the evidence for the town-dwelling landholders into a picture of the landholding pattern of the nome as a whole, in which as much as three quarters of the land may still have been held by village residents (Table III). There is no means of telling whether this land was divided much more equally between large numbers of relatively poor landholders in the villages or whether the village pattern displayed a similar degree of differentiation (which one would expect to occur over a smaller range of wealth).

Interestingly enough, it is a pattern of this sort which does emerge from evidence for Philadelphia in the Fayum, a little more than a century earlier (Table V). A Yale papyrus of A.D. 216 contains a list of owners of private land which appears to take account of all private landholdings at Philadelphia.<sup>79</sup> There is no reference to βασιλική or δημόσια γῆ, which at this period were still in true state ownership and let out to crown tenants. The private holdings total 2,826 arourai of wheat-bearing land and 550 arourai of orchard land. The individual holdings which can be recovered total 2,426 arourai in both categories and are registered to 186 owners. The holdings range in size from 1 aroura to 87 arourai and the socio-economic spectrum of the owners is very broad, ranging from Alexandrian magistrates down to slaves and including veterans, soldiers, women and doctors. The few occupational designations which occur include σαγματοράφος (saddler), ἔλαιουργός, χρυσοχόος and ζωγράφος; but there are many names which have no descriptive epithets at all. Thus, although this is not a community of landholders living in a large town, there is no reason to doubt that the owners of private land at Philadelphia were spread across the whole social and economic spectrum of the village. The figure which indicates the degree of inequality in the distribution of land (.737) is high and makes hardly any contrast with the figures from G and F, over a century later; indeed, the figure from Philadelphia shows a higher degree of inequality than can have applied to the Antinoite landholders in F (Table V).

It is difficult to be certain what effect the inclusion of state land would have on this picture. Had state tenants owned the land which they leased at this period, one might expect the degree of inequality to be even more marked, since it is generally assumed that this land was leased out in small amounts to poorer people. At all events, the pattern of ownership of private land at Philadelphia in the early third century emerges as not strikingly different from that of town-dwelling landlords in the Hermopolite in the mid-fourth century. But this does not entitle us to make an analogy with the *village* landholders of the fourth-century Hermopolite.

The only other place in Egypt which permits a comparison is Kerkeosiris at the end of the second century B.C. The lists of crown tenants and cleruchs provide an almost complete picture of individual landholdings in the village (sacred land excluded) in 116/115 B.C.<sup>80</sup> The Gini coefficient here is .374, indicating a strikingly more equable distribution than at Philadelphia or Hermopolis. This may reflect a conscious will on the part of the Ptolemaic administration to reconcile and conciliate the grievances of the underprivileged which had been recently expressed in nationalistic unrest.<sup>81</sup> But it is

<sup>76</sup> e.g. G 298, 305 (bishops), 306, 349 (ex-proedros and ex-logistes), 10, 146, etc. (*officiales*), 172, 96, 66, 516, F 128 (artisans).

<sup>77</sup> Duncan-Jones, 21. It will be noted that the figures in Table V for F are somewhat lower than those obtained by Duncan-Jones before the new edition of the text.

<sup>78</sup> Jones, 243 ff.; Duncan-Jones, 21 gives a Gini coefficient of .679.

<sup>79</sup> Referred to by Duncan-Jones, 11. The papyrus will

be published as *P. Yale* III, 145. I am most grateful to Professor Susan Stephens for sending me a copy of the text and permitting me to use the data in advance of publication.

<sup>80</sup> The calculation was carried out on the holdings presented in *P. Teb.* IV, 1103 and 1110 (= 63).

<sup>81</sup> cf. D. J. Crawford, *Kerkeosiris* (1971), ch. IV, esp. 57 ff. This is the context of the famous decree of Euergetes II in 118 B.C. (*P. Teb.* I, 5).

hardly possible to generalize from such sparse data and even without the evidence of Kerkeosiris we would be tempted to suppose that the increased scale of private ownership of land in the Roman period had the effect of exaggerating the inequality of distribution.

It would be a mistake to suppose that the concentration of land in the hands of the wealthy necessarily implies the growth of 'large estates' and the domination of the countryside by rich absentee landlords from the towns.<sup>82</sup> That this is misleading emerges clearly if we consider the evidence of G and F from other points of view. The landholdings in the lists are located by reference to the pagi in which they lay, though in a considerable number of cases this element in the entry is lost. Table VI shows the distribution by pagus for those entries in which the location is preserved in the text (incomplete holdings and *ousiai* are included).

The Hermopolite Nome was divided into 17 pagi of which 16 appear in G and F. The pagi appear to have followed a numerical sequence which began in the south of the nome with the 1st pagus and ended in the north with the 17th.<sup>83</sup> It is clear that the 7th and 8th pagi were close to the metropolis, probably both on the northern side, since they included villages known formerly to have belonged to the toparchies of Περὶ πόλιν κάτω and Πατρή ἄνω.<sup>84</sup> The distribution of land in G and F shows a heavy concentration in the 5th, 6th, 8th, 9th and 10th pagi which must have been fairly close to Hermopolis and to Antinoopolis. The more distant pagi contain correspondingly less land owned by town residents. Hence the phenomenon of the town-dwelling landlord owning land in the rural areas of the nome becomes less common, as we might expect, the further one gets from the town. It should be noted, however, that the distant holdings are not necessarily amongst the largest, although they do tend to be above the mean. The total of the holdings in the 15th pagus does not fit this pattern if this pagus was one of the more distant ones; the apparent anomaly may be due to the fact that approximately 2,875 arourai (out of a total of 3,327) in F Herm. are accounted for by four very large holdings (out of a total of 25 holdings in the pagus). It is noteworthy that there is a heavy preponderance of Antinoite holdings in the 5th pagus, where residents of Hermopolis are hardly represented at all. It is difficult to envisage any explanation for this other than that the 5th pagus was conveniently located for Antinoite landholders.

A major point of interest is the complete absence of holdings in the 7th pagus, which is not once mentioned in either G or F. As has already been noted, this pagus was very close to the town of Hermopolis. The most likely explanation of its absence is that it was, in fact, the pagus which included the town and that there was a separate register which listed the landholdings in the immediate vicinity of the town. The assumption which I have made that landholding in the 7th pagus will have been dominated, if not virtually monopolized, by residents of Hermopolis is naturally not invulnerable.<sup>85</sup> Nor can my estimates of its possible size be regarded as anything more than guesses (above, p. 147). And its absence from our record leaves various areas of uncertainty. First, it may have been somewhat different in its agricultural character from the other pagi, perhaps containing a higher proportion of orchard and garden land.<sup>86</sup> Second, there may well be some Hermopolite landholders who owned land only in the 7th pagus; these will not appear in G and F and this will mean that any estimate of the likely number of Hermopolite landholders based on the numbers in G and F will be too low.<sup>87</sup> Third, some Hermopolite landholders who do appear in G and F will also have owned land in the 7th

<sup>82</sup> The complexity of such large holdings is well illustrated by *P.Flor.* 50 (Hermopolis, A.D. 268), on which see M. A. H. el-Abbadi, *Proceedings of the XIV International Congress of Papyrology* (EES, *Graeco-Roman Memoirs* no. 61, 1975), 91–6. Cf. n. 92.

<sup>83</sup> M. Drew-Bear, *Le Nome Hermopolite* (*American Studies in Papyrology* 21, 1979), 47. On the survival of the term τοπαρχία in G and F see *P.Landlisten*, 9–10.

<sup>84</sup> Drew-Bear, *op. cit.*, 377–8.

<sup>85</sup> It is in fact difficult to identify any firm attestations of the 7th pagus apart from *P. Lond.* III, 1293 (cf. Drew-Bear, *op. cit.* (n. 83), 377, *P.Landlisten*, p. 10. But this example seems sound and shows that it included the village of Magdola Mire. Some notion of the

activities of landholders in this area in an earlier period can be obtained from the Sarapion archive (J. Schwartz, *Les archives de Sarapion et de ses fils*, IFAO, 1961). Cf. n. 55, above.

<sup>86</sup> It would be natural to assume that there were some town residents who owned no land except for a small garden or orchard plot. For such holdings elsewhere cf. H. Geremek, *Karanis, communauté rurale de l'Égypte romaine au IIe–IIIe siècle de notre ère* (1969), 60 ff., 105 ff. Note the small amounts of such land attested for the Hermopolite villages in *SPP* V, 120. 107–9, 117–18.

<sup>87</sup> Jones, 251, estimated 900–1,000 urban landowners in Hermopolis but the areas of uncertainty seem to me to prevent us making any useful estimate.



pagus and so the holdings recorded in G and F will not constitute a complete tally of their land. Finally, the absence of any record for the 7th pagus may distort our picture of the number of landholders who owned land in more than one pagus; that is, many of those in G and F who have holdings recorded in only one pagus may in fact have owned land in the 7th pagus as well. This factor obviously limits the value of the statistics presented in Table VII, which shows the number of landholders with land in more than one of the 16 pagi represented in G and F (incomplete entries are included). For what they are worth, they show that a relatively small number of people had land in more than one pagus and that the incidence of 'split holdings' is proportionally much higher amongst the larger owners. Of the largest holdings (500+ arourai), there is only one which is located in a single pagus, that registered to the heirs of Ammonios son of Hyperechios (F 299-1,370 arourai).

It would be possible to tabulate the examples of the larger 'split holdings' if any profit were to be gained from doing so. An example may be taken from F 274-81 which lists the following holdings for Hierokles son of Helladios:<sup>88</sup>

Pagus no.	Private land	Public land
6	179 ar.	32
8	516	25.5
9	43.75	
10	75.5	
14	9.75	
15	5.25	
17	6.75	
?	45.5 (in the name of Horion son of Paris)	

There are two obvious reasons why such a tabulation might well not give us any real guide to the degree of fragmentation of such holdings. First, it is possible that estates lying in different pagi were in fact contiguous and possibly, in some sense, consolidated. Second and conversely, it might well not be the case that the holding in any individual pagus was consolidated. An analogy for this comes from the property of Calpurnia Heraklia in the Oxyrhynchite, about a century earlier.<sup>89</sup> This lady declared about 1,700 arourai (which certainly was not the whole of her property), spread through five villages in the eastern toparchy. Even with the detail provided in her declaration it is impossible to tell whether any of the various bits of her estate were contiguous; but if we had only an equivalent of the Hermopolite lists, her property declaration would appear simply as 1,700 arourai in the eastern toparchy, perhaps subdivided into land categories.

It is thus difficult to see how the Hermopolite landlists can give us more than general indications of the configurations of landholding among the wealthy. Any detail would have to come from other sources. It seems likely, however, that the owners of more than 200 arourai of land typically tended to have holdings in different locations. As the example of Hierokles indicates, holdings in different pagi might have varied greatly in size; he had c. 542 arourai in the 8th pagus, which was close to Hermopolis, and c. 5 arourai in the 17th pagus, which was in the southern part of the nome. This might seem to us to be the opposite of the dictates of economic rationality; but the way in which the land was acquired and the manner in which it was exploited need to be taken into account. The Oxyrhynchite property of Calpurnia Heraklia seems to have been acquired in a rather piecemeal and haphazard fashion over a period of two and a half centuries.<sup>90</sup> It consisted of both large and small holdings in different categories. There is some reason to believe that a significant quantity of land continued to change hands in this way in the mid-fourth century (see p. 154). Nor do G and F give us any reason to believe that holdings of over 200 arourai were simply huge estates, functioning as centralized agricultural concerns of a semi-feudal kind. In fact, the holdings of Aurelia Charite (365 arourai in G 252 ff., 263

<sup>88</sup> He appears at G 72 but most of the holdings are lost. For the possible complexity of such holdings we can compare the land owned by the descendants of Hyperechios (above, n. 45) or that of Aurelia Charite,

analysed in *P.Charite*, pp. 10-12.

<sup>89</sup> *P.Oxy.* XLII, 3047, cf. 3048.

<sup>90</sup> *P.Oxy.* XLII, 3047 introd.

arourai in F 466 ff.) were, as documents from her archive clearly show, sometimes leased out in very small parcels.<sup>91</sup>

It is thus clear that we cannot say, on the basis of G and F, that there is evidence for the build-up of what are conventionally thought of as the large estates of the Byzantine period. Nor can we necessarily suppose that exploitation through free tenancy was being replaced by some other mode of exploitation more akin to a 'tied colonate'. In fact, if almost all land did become private property in the decades after Diocletian's reign, those who were already fairly wealthy will have been better able to increase their wealth than were the small landholders. Thus the gap between rich and poor will have been accentuated and it is this phenomenon which the inequality of distribution in G and F might be taken to show. On the other hand, it might be argued that the evidence from Philadelphia (above, p. 151) shows a similar sort of gap over a century earlier. The 'privatization' of land in the fourth century would naturally entail the disappearance of the large class of farmers who leased land from the state. But if it is correct that landholders continued to lease out parcels of their land as one of the main modes of exploitation, then it follows simply that state tenants of the earlier period were now the tenants of private landowners. It may be this development which created the conditions for the existence of a 'tied colonate'. But the patterns which can be deduced from G and F are very far from showing the existence of such a phenomenon in the middle of the fourth century.<sup>92</sup>

Some further light may be cast on this general picture by an examination of what G and F can tell us about the extent to which land changed hands at this period. The evidence is set out in Table VIII. VIII, A lists those landholders who appear in G but not F; if G is the earlier list, as is assumed, their disappearance is significant (and the incompleteness of the lists in G is irrelevant). The results show 14.33 per cent of the landowners in G failing to appear in F; the amount of land disappearing is 13.76 per cent of the land in G.<sup>93</sup> The range is large and includes holdings from 0.25 aroura to 467 arourai. What this tabulation will not tell us, of course, is what happened to this land. Was it being steadily acquired by the larger owners or did it circulate amongst landholders over the whole spectrum of wealth? Table VIII, B might provide some pointers. Here we are dealing only with the overlap, those landholders who appear in both G and F with different holdings; and the changes are reckoned as gains or losses against G on the assumption that it is the earlier of the two lists. The changes affect 23.05 per cent of the landholders, and the amount of land involved in the changes is 22.61 per cent of the total amount of land in that portion of G which overlaps with F. It is, incidentally, worth noting that the Antinoite section shows a heavy loss, mainly due to large changes in three holdings (G 339, 411, 542) and this is consistent with (and may indeed partially explain) the difference between the total Antinoite holdings in G and F (above, p. 146). The gains and losses seem to occur over a very broad range of wealth, but only one of the very large holdings appears (G 37). Small and medium landholders gain and lose land and this would rather suggest that land was not simply moving steadily in the direction of the very wealthy.<sup>94</sup>

The total amount of land affected by change seems quite astonishingly high for this period—over 35 per cent of the land in G. It is, however, impossible to put this figure into any meaningful context because there is, so far as I know, no indication for any period in Roman Egypt of a 'normal' or expected level of movement of land. But the combined

<sup>91</sup> e.g. *P.Charite* 2, an offer to lease a parcel of 5 arourai from 20 arourai which she owned near the village of Nache; *P.Charite* 8 shows a tenant leasing 10 arourai from her in parcels of 3 and 7 arourai in different places and paying a half share of the crop as rent. Note the variety of tenants: military men (*P.Charite* 6, 7, 8), magistrates of Hermopolis (2, 3), villagers (5, probably also 1 and 4); taxes are paid through γεωργοί in 14 and 26 (cf. above, p. 142).

<sup>92</sup> It is interesting to compare the remarks of Boak and Youtie on Karanis in the earlier fourth century, *P.Cair.Isid.*, p. 79: '... the report reveals the relatively minor role played by metropolitans in the early fourth

century. Not only did the villagers outnumber them 6:1 but they also produced over 6 times as much wheat and 9 times as much barley. The metropolitans were not a group of wealthy landowners whose expanding estates were surrounded by the small properties of villagers.' Cf. n. 91, above.

<sup>93</sup> There may be some hidden cases of inheritance, in which a landholder had died in the interval between G and F and the land appears under the name of the heir (not as a κληρονόμος-entry), but I have found no examples in which the names suggest that this would account for the change.

<sup>94</sup> cf. n. 92, above.

evidence for movement of land in the form of holdings which either disappear or increase or decrease in size certainly suggests a free market in land which was far from ossified. But at present this somewhat tentative conclusion can only await the test of time and further research.

#### CONCLUSION

The Hermopolite landlists, which date to around A.D. 350, are unable to yield a complete picture of the patterns of landownership in mid-fourth-century Egypt, but analysis of the data suggests certain pertinent features which may be summarized briefly.<sup>95</sup>

(i) Almost all land appears to have been effectively in private ownership at this period, including so-called public land which was simply subject to a higher rate of taxation.

(ii) The holdings of town residents might conceivably account for as much as 30 per cent of the land in the nome; but perhaps a figure of around 25 per cent is a more reasonable maximum. Town landholders probably held rather less public land, proportional to private land, than their village counterparts.

(iii) The holdings of town residents covered a very great range, from less than one aroura to over 2,000 arourai, with a high degree of inequality of distribution. According to our most complete figures 42.6 per cent of the landholders owned a mere 3.7 per cent of the land, whilst 1.8 per cent of the owners accounted for 36.6 per cent of the land (figures in F). But this level of inequality is not dissimilar to that found among private landowners at Philadelphia in the Fayum over a century earlier and this might suggest that we ought to be cautious in deducing any great change during the third and early fourth centuries.

(iv) The geographical distribution of the holdings shows that land owned by town residents tended to be concentrated in the pagi closest to the towns of Hermopolis and Antinoopolis.

(v) The registers give no clear indication of the extent to which the larger estates were consolidated or fragmented. They provide no clear pointers to the build-up of large consolidated estates worked by a tied peasantry.

(vi) The lists suggest that a considerable amount of land changed hands over a fairly short period of time, which perhaps points to an active market in land which affected small, medium and large landholders. It is difficult to find any clear indication in the registers that the very wealthy were systematically absorbing the holdings of the less prosperous landowners to a more marked degree than earlier. It does, therefore, seem fair to say that if the prime evidence for the development of the 'Byzantine large estate' can be found in the fourth century it will not come from the Hermopolite land-lists.

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<sup>95</sup> Some preliminary and general observations were made in *Imperial Revenue, Expenditure and Monetary Policy in the Fourth Century A.D.* (ed. C. E. King, *BAR*

*International series* 76, 1980), 30-1, with some errors and misconceptions of detail.

TABLE I.

## A. LANDHOLDINGS IN G

	Total (arourai)	Private	Public	No. of Owners	Owners of Public land	Owners of Public land only
(i) Hermopolites (G 1-282)						
Complete entries	6,054.75	5,573.75	481	139	46*	3
Incomplete	1,203.5	1,066	137.5	6	4	1
Ousia	169.75	168.5	1.25	3	1	—
Total	7,428	6,808.25	619.75	148	51	4
(ii) Antinoites (G 283-588)						
Complete entries	6,415.25	6,115.5	299.75	162	64*	2
Incomplete	160.25	160	0.25	7	1	—
Ousia	207.5	206	1.5	3	1	—
Total	6,783	6,481.5	301.5	172	66	2
Total at G 589-90	9,928	9,468	460			
(iii) Holdings in G (1-588)						
Complete entries	12,470	11,689.25	780.75	301	100*	5
Incomplete	1,363.75	1,226	137.75	13	5	1
Ousia	377.25	374.5	2.75	6	2	—
Total	14,211	13,289.75	921.25	320	117	6

\* Excluding entries in which the holding of public land is lost (5 in the Hermopolite list, 2 in the Antinoite)

B. LANDHOLDINGS IN F

	Total (arourai)	Private	Public	No. of Owners	Owners of Public land	Owners of Public land only
(i) Hermopolites (F 43-487)						
Complete entries	15,078·5	13,859·25	1,219·25	238	90†	3
Incomplete	1,106·25	974·25	132	2	2	
Ousia	148·25	148·25	—	3	—	
Total	16,333	14,981·75	1,351·25	243	92	3
(ii) Antinoites (F 488-814)						
Complete entries	7,576·75	7,198·75	378	203	77†	1
Incomplete	372·5	366·25	6·25	3	2	
Ousia	294	292·5	1·5	3	1	
Ousia (incomplete)	100	100	—	1	—	
Total	8,343·25	7,957·5	385·75	210	80	1
(iii) Holdings in F (43-814)						
Complete entries	22,655·25	21,058	1,597·25	441	167†	4
Incomplete	1,478·75	1,340·5	138·25	5	4	
Ousia	442·25	440·75	1·5	6	1	
Ousia (incomplete)	100	100	—	1	—	
Total	24,676·25	22,939·25	1,737	453	172	4

† Excluding entries in which the holding of public land is lost (2 in the Hermopolite list, 1 in the Antinoite)

TABLE II. MEAN HOLDINGS\*

	Private land	Public land†	All land
G Herm.	40·99 arourai	10·46 arourai	43·56 arourai
G Ant.	38·22	4·68	39·60
G	39·49	7·10	41·43
F Herm.	58·98	13·55	63·36
F Ant.	35·64	4·91	37·32
F	48·19	9·56	51·37

\* Incomplete entries and ousiai are excluded

† Excluding entries in which the holding of public land is lost (7 in G, 3 in F)

TABLE III. PROJECTED DISTRIBUTION OF LAND

## A. HOLDINGS OF TOWN RESIDENTS

1. Total land in nome	2. Total land held by town residents	3. (2) as % of (1)	4. Private land held by town residents	5. (4) as % of (2)	6. Public land held by town residents	7. (6) as % of (2)
400,000	98,600	24.65%	90,660	91.95%	7,940	8.05%
300,000	93,600	31.2%	86,060	91.95%	7,540	8.05%

## B. PRIVATE AND PUBLIC LAND

1. Total land in nome	2. Total private land in nome	3. (2) as % of (1)	4. Total public land in nome	5. (4) as % of (1)
400,000	324,000	81%	76,000	19%
300,000	243,000	81%	57,000	19%

## C. HOLDINGS OF VILLAGERS

1. Total land in nome	2. Total land held by villagers	3. (2) as % of (1)	4. Private land held by villagers	5. (4) as % of (2)	6. Public land held by villagers	7. (6) as % of (2)
400,000	301,400	75.35%	233,340	77.42%	68,060	22.58%
300,000	206,400	68.8%	156,940	76.04%	49,460	23.96%

TABLE IV. PATTERNS OF DISTRIBUTION

## A. LANDHOLDINGS IN G

Size category	G Herm.		G Ant.		G	
	Total (arourai)	No. of owners	Total (arourai)	No. of owners	Total (arourai)	No. of owners
0-9 arourai	317.5	72	253.25	56	570.75	128
10-19	399.25	30	544.25	38	943.5	68
20-29	218.75	10	498.5	20	717.25	30
30-39	230	7	353.75	10	583.75	17
40-49	189.5	4	217	5	406.5	9
50-79	257.75	4	424	7	681.75	11
80-99	278.75	3	776.75	9	1,055.5	12
100-199	620	4	1,728	12	2,348	16
200-499	1,451	4	1,620	5	3,071	9
500+	2,092.25	1	—	—	2,092.25	1
Total	6,054.75	139	6,415.25	162	12,470	301

B. LANDHOLDINGS IN F

Size category	F Herm.		F Ant.		F	
	Total (arourai)	No. of owners	Total (arourai)	No. of owners	Total (arourai)	No. of owners
0-9 arourai	520	116	325.25	72	845.25	188
10-19	649.5	48	499.75	38	1,149.25	86
20-29	509.5	21	620.5	27	1,130	48
30-39	269.5	8	373.75	11	643.25	19
40-49	310.5	7	386	9	696.25	16
50-79	437.5	7	1,028	16	1,465.75	23
80-99	526.5	6	801.75	9	1,328	15
100-199	1,652	11	2,857.25	19	4,509.25	30
200-499	1,911.75	6	684.5	2	2,595.25	8
500+	8,291.75	8	—	—	8,291.75	8
Total	15,078.5	238	7,576.75	203	22,655.25	441

TABLE V. GINI COEFFICIENTS

The degree of equality of distribution is measured on a scale from 0.1 (maximum equality) to 1.0 (maximum inequality)

G Herm.	.794	
G Ant.	.637	
G	.715	
F Herm.	.815	
F Ant.	.616	[Including estimates of missing holdings .622]
F	.758	[Including estimates of missing holdings in F Ant. .753]
Kerkeosiris (116/115 B.C.)	.374	
Philadelphia (A.D. 216)	.737	

TABLE VI. DISTRIBUTION OF LANDHOLDINGS BY PAGUS\*

Pagus no.	G Herm.		G Ant.		G		F Herm.		F Ant.		F	
	Total (arourai) owners	No. of owners	Total (arourai) owners	No. of owners	Total (arourai) owners	No. of owners	Total (arourai) owners	No. of owners	Total (arourai) owners	No. of owners	Total (arourai) owners	No. of owners
1	71	3	86	3	157	6	155	5	176	8	331	11
2	244	3	121	1	365	4	816	6	134	4	950	10
3	301	5	21	2	322	7	853	12	10'5	1	863'5	13
4	7	1	—	—	7	1	400	3	65	2	465	5
5	9	1	1,629	46	1,638	47	151	12	1,231	50	1,382	62
6	1,586	51	2,610	67	4,196	118	2,428	79	2,891	79	5,319	158
8	2,261	71	846	25	3,107	96	4,367	96	633	24	5,000	120
9	139	6	28	3	167	9	865	11	464	6	1,329	17
10	49	5	460	8	509	13	1,032	12	609	9	1,641	21
11	89	4	32	1	121	5	164	9	152	2	316	11
12	136	4	48	2	184	6	438	10	106	4	544	14
13	84	7	272	7	156	14	217	12	234	6	451	18
14	63	4	—	—	63	4	177	12	30	1	206	13
15	519	11	246	8	765	19	3,327	25	165	1	3,492	26
16	32	1	—	—	32	1	3	1	—	—	3	1
17	16	3	—	—	16	3	261	5	144	2	405	7

\* Including incomplete holdings but excluding oustiai



TABLE VII. OWNERS WITH LAND IN MORE THAN ONE PAGUS\*

Size category	G		G		G		F		F		F	
	Herm.	n	Ant.	n	G	n	Herm.	n	Ant.	n	F	n
0-9 arourai	3	73	2	58	5	131	5	116	1	73	6	189
10-19	4	30	1	42	5	72	7	48	2	38	9	86
20-29	2	11	1	20	3	31	—	22	2	27	2	49
30-39	3	7	—	10	3	17	5	8	—	11	5	19
40-49	2	4	2	5	4	9	3	7	1	9	4	16
50-79	4	5	—	7	4	12	2	7	2	16	4	23
80-99	2	3	5	9	7	12	3	6	5	9	8	15
100-199	2	6	1	13	3	19	2	11	5	20	7	31
200-499	3	4	2	5	5	9	4	6	1	3	5	9
500+	2	2	—	—	2	2	8	9	—	—	8	9
Total	27	145	14	169	41	314	39	240	19	206	58	446

\* Incomplete entries are included

TABLE VIII. THE MOVEMENT OF LAND

A. LANDHOLDERS IN G WHO DO NOT APPEAR IN F\*

Reference (G)	Amount (arourai)	Reference	Amount (arourai)
24 (Herm.)	3	223	1.5
31	2.75	224	3
32	5	272	9
33	5.5	276	20
34	97.75	277	9.5
36	46	278	30
89	0.25	279	31
90	13	280	20.5
104†	467		
137	24.5		
148	1	320 (Ant.)	23.75
149	5.25	365	18.25
150	31.5	390	112.25
198	2	415	31
199	2	416	82
200	1	425	16.75
201	6	489	13.75
202	1.5	499	270.5
203	17.25	503	11
204	14.5	553	17
205	11	576	10
206	15	Total: 45 landholders (n = 314)	
216	383.25	1,903.25 arourai (n = 13,833.75)	
219	15.5		
221	6		
222	3		

\* Includes incomplete holdings (G 137, 489, 576), but not ousiai.

† This entry is problematic because it appears at F 328 ff. but has been crossed out. It is included here on the assumption that the deletion was intentional and signified that the landholding did not exist in F. There is no sign that the heirs appear elsewhere in F under their own names. Examination of the somewhat fragmentary individual components of the estate in G and F suggests that the total in G is pretty nearly complete.

## B. LANDHOLDERS APPEARING IN G AND F WITH DIFFERENT HOLDINGS\*

Reference (G)	Amount (arourai)	Reference (F)	Amount (arourai)	Difference
30 (Herm.)	8.25	170 (Herm.)	10.25	+2
2	0.75	197	5.75	+5
7	18	203	41.75	+23.75
11	4	215	7	+3
12	18.25	216	14.75	-4
16	74	220	128.5	+54.5
18	0.5	222	2.5	+2
22	10	228	12.25	+2.25
25	7.5	232	16.75	+9.25
37	2,092.25	241	1,452.5†	-639.75
57	58.75	254	11.5	-47.25
82	48.5	290	56	+7.5
95	10	297	13.5	+3.5
123	6	325	5	-1
125	48	326	42.25	-5.75
128	11	337	12	+1
136	10.5	345	11.5	+1
174	5.5	398	3.25	-1.75
179	5	402	2	-3
193	11	418	6.5	-4.5
208	106.25	429	154	+47.75
225	90.75	447	89	-1.75
228	25	450	19.5	-5.5
240	59.75	458	43.5	-16.25
252	375‡	466	263.25	-111.75
281/73	65.25	480	7.5	-57.75
268	24	483	44.75	+20.75
291 (Ant.)	42.75	497	56.25	+13.5
316	92	499	94.5	+2.5
293	57	502	61.5	+4.5
296	17	507	12	-5
301	18.5	514	12.75	-5.75
303	24.5	516	46	+21.5
306	11	521	13.5	+2.5
322	12	536	16.5	+4.5
333	150	550	58.5	-91.5
339	466.25	554	8	-458.25
337	189.25	556	192.25	+3
343	186	559	183.5	-2.5
344	21	560	20	-1
356	16.5	575/814	21	+4.5

\* All doubtful cases (including incomplete holdings) are excluded, as are the *ousiai*. The match between the beginning of G and the relevant part of F does not present a perfect fit since the first part of G has been lost; the correspondence proper begins at F 197, but I have included G 2 = F 170, G 4 = F 182 and G 5 = F 183. Since the assumption is that G is the earlier of the lists, the differences are recorded as losses and gains from the amounts in G. All differences of less than 1 aroura have been disregarded (as being perhaps simply differences of measurement).

† This holding preserves a total of 1,362.5 arourai, which has elsewhere been treated as a complete holding (see n. 45); it is possible that up to 90 arourai are lost and this amount has been added here simply in order to present the minimum possible difference between the holdings recorded in G and F.

‡ It is worth noting that the total of 375 arourai does not represent the maximum size which Aurelia Charite's holdings are known to have reached. *P. Charite* 12 (undated) shows a total of almost 519 arourai.

TABLE VIII. B (cont'd)

Reference (G)	Amount (arourai)	Reference (F)	Amount (arourai)	Difference
367	4	581/801	8	+4
369	138.75	583	177.5	+38.75
373	398.5	589	392.5	-6
383	80	604	74.75	-5.25
409	17.5	611	11	-6.5
405	123.5	622	122.5	-1
411	277.25	625	77	-200.25
488	28	652	24	-4
440	5	658/813	10.25	-5.25
478	28.5	705	25	-3.5
513	26	732	22	-4
518	26.5	737	21.5	-5
542	151.75	760	21.5	-130
548	45	767	46.75	+1.75
552	19.75	771/809	21.75	+2
565	22.25	782	20	-2.25
583	6.75	795/802	7.75	+1
586	6.5	798	11	+4.5

Totals: Hermopolites: 27 landholders ( $n = 110$ )

land changing hands: 1,173.25 arourai ( $n = 4,372.25$  arourai)

Antinoites: 32 landholders ( $n = 156$ )

land changing hands: 1,045 arourai ( $n = 5,442.5$  arourai)