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Estates and the Land in Late Roman Asia Minor*

Under modern tax-systems, the state exacts for its own use a fixed proportion of the resources of each individual under its authority. Revenues are regulated by periodic raising or lowering of the percentage of each individual's resources – usually, his income – which is claimed by the state. In the fourth century AD things were different. A standing register or *census* listed the resources of the empire as a whole, assessed in terms of land, humans, and livestock. The revenue to be collected by the state in any particular year (*annona*) was determined in advance by the praetorian prefect. The proportion of this revenue due from each individual corresponded to his resources as a proportion of the resources of the empire as a whole: in short, the fourth-century tax-system was a *distributive* one. Once the total required revenue had been established, the tax-burden was distributed (in theory) equitably among the empire's landowners in proportion to their wealth.[1]

This tax-system was the result of the fiscal reforms of Diocletian in the last years of the third century AD.[2] Throughout antiquity, tax had essentially been levied on land

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[1] N. Oikonomidès, De l'impôt de distribution à l'impôt de quotité: à propos du premier cadastre byzantin (7e–9e siècle), ZRVI 26, 1987, 9–19.

[2] The workings of the Diocletianic fiscal system are complex and controversial. The clearest introduction is now that of J.-M. Carrié – A. Rousselle, L'Empire romain en mutation des Sévères à Constantin, 192–337, 1999, 190–195, 593–615; see also J.-M. Carrié, Dioclétian et la fiscalité, AntTard 2, 1994, 33–64. For the inscribed census records from the *dioecesis Asiana*, I have found most useful E. Déléage, La capitation du bas-empire, 1945, 163–196; A. H. M. Jones, Census Records of the Later Roman Empire, JRS 43, 1953, 49–64; J. Karayannopulos, Das Finanzwesen des frühbyzantinischen Staates, 1958, 28–53; W. Goffart, Caput and Colonate: Towards a History of Late Roman Taxation, 1974, 113–121; A. Cerati, Caractère annonaire et assiette de l'impot foncier au bas-empire, 1975, 244–260; T. R. Elliott, Diocletianic

and persons. Diocletian's innovation was to create a single, ‹double-bracket› scale on which, in theory, the entirety of the empire's taxable wealth could be expressed. Under this system, individuals' total tax-liability (or, more precisely, *annona*-liability) was expressed in theoretical arithmetic units known as *iuga* (Gr. ζυγά) and *capita* (Gr. κεφαλαί). A schedule of conversion, differing from province to province, determined the relationship between actual resources and theoretical units: one *iugum* corresponded to *x iugera* of arable land, *y iugera* of vineyard, *z* olive trees; one *caput* was equivalent to *x* free adult males, *y* slaves, *z* head of cattle, and so forth. The *iugum* and the *caput* were then treated as equivalent for the purposes of the *annona*. The result was that an individual land-owner's *annona*-liability could be expressed in terms of a single unit, the *zygokephalon*, representing *iuga* plus *capita* on a single scale (*iugatio siue capitatio*). As we have seen, the *zygokephalon* was not, strictly speaking, a unit of taxation. Rather it was a way of expressing the total taxable resources of an individual as a proportion of the total resources of the empire. What the *zygokephalon* represented in real terms – in cash or in kind – varied from year to year according to the needs of the state.

In order for this system to function, the state required an accurate assessment of the total taxable resources of the empire. In practice, there is no reason to suppose that a single register was ever centrally collated. The praetorian prefect delegated the process of recension and revision downwards to smaller administrative units: to the diocese, thence to the province, and finally, in most parts of the empire (certainly Greece, Asia Minor, and Egypt), to the individual city.[3] Responsibility for tax-returns devolved, naturally, on the individual taxpayer, but it is clear that the cities also acted as fiscal ‹cells›, with some level of collective responsibility for their own returns – a strong incentive to keep full and accurate records of their fiscal resources.[4] Eleven of these local census-records have survived in fragmentary form. The results of the census appear to have been inscribed on stone in cities belonging to only three of the new Diocletianic provinces, *Caria* (Miletos, Mylasa), *Asia* (Hypaipa, Magnesia, Tralles), and *Insulae* (Astypalaia, Chios, Cos, Mytilene, Samos, Thera), all three of which were part of the new *dioecesis Asiana*.[5] It seems more likely that the order to inscribe the tax-records

Census Inscriptions from the Aegean Islands and Asia Minor, unpublished MA thesis (Chapel Hill), 1997.

[3] Organisation of recension (and returns) by city may not have been universal. In *Coele Syria*, *Palaestina*, *Phoenice* and *Arabia*, collective fiscal responsibility seems to have devolved as far down as individual villages: F. Millar, The Roman Near East, 31 BC – AD 337, 1993, 196; M. Sartre, Nouvelles bornes cadastrales du Hauran sous la Tétrarchie, Ktema 17, 1992, 130–131. See also J. Karayannopulos, Die kollektive Steuerverantwortung in der frühbyzantinischen Zeit, VSWG 43, 1956, 289–322.

[4] J.-M. Carrié, Un roman des origines: les genealogies du «Colonat du Bas-Empire», Opus II/1, 1983, 218.

[5] Miletos: I. Milet (VI 3) 1389–1390. Mylasa: I. Mylasa 271–281. Hypaipa: I. Ephesos 3804–3806. Magnesia: I. Magnesia 122. Tralles: I. Tralleis 250 (re-edited below). Astypalaia: IG XII 3, 180 (re-edited in Appendix below), 181–182, with XII 3 Suppl. p.278, and Déléage (above, n. 2) 190–194. Chios: Déléage (above, n. 2) 182–186. Cos: R. Herzog, Koische For-

came from the office of the diocesan *uicarius* than independently from the separate offices of the *proconsul Asiae* and the *praesides Cariae* and *Insularum*.[6] The Edict on Maximum Prices, promulgated in late 301, provides a point of comparison. Although intended to be enforced throughout the empire, the Edict appears only to have been inscribed on stone in the provinces of Egypt, Crete-Cyrenaica, Achaea, Phrygia, and Caria; all the copies are in Latin, apart from the fragments from Achaea, where the Edict was inscribed in Greek. It appears that provincial governors had the freedom to disseminate the Edict in whatever manner seemed best to them; a few chose to have it inscribed on stone, and one ordered its translation into Greek.[7] Similarly, one particular *uicarius* (or three provincial governors) decided that the census-records in his diocese were best displayed publicly on stone.

The surviving census documents from the *dioecesis Asiana* fall broadly into two groups, those which record the raw census-data – measurements of land, numbers of persons and livestock – and those which record the liability of land-owners and their estates in terms of *iuga* and *capita*. Records of the first type are found at Thera, Mytilene, Hypaipa, Mylasa, and Miletos (‹land-registers›); of the second type, at Chios, Samos, Cos, Astypalaia, Tralles, and Magnesia on the Maeander (‹tax-registers›). Even within these groups, the structure and layout of the registers differ significantly from city to city. This need not be an obstacle to regarding them as the result of a single diocesan initiative. Individual cities could easily have been given a free hand in the organisation of the assessment of villages and estates on their own territory: they could record their census-results in whatever way they liked. The only hint that we might be dealing with more than one phase of recension comes from Mytilene. In one of the seven surviving fragments of the Mytilenean tax-register, IG XII 2, 79, vineyards, arable land, and olives are divided into those of first and second quality. This differentiation between classes of land is not found in any of the other Mytilenean fragments, nor indeed in any of the other census-inscriptions, although it is attested in the schedule

schungen und Funde, 1899, no. 14; M. Segre, Iscrizioni di Cos, 1993, ED 151; substantial new fragments will be published shortly by K. Hallof. Mytilene: IG XII 2, 76–80; Charitonides, I. Lesbos Suppl., no. 17; E. Erxleben, Zur Katasterinschrift Mytilene IG XII 2, 77, Klio 51, 1969, 311–323 (to be used with caution); SEG 45, 1090. Samos: IG XII 6, 980. Thera: G. Kiourtzian, Recueil des inscriptions grecques chrétiennes des Cyclades, 2000, no. 142; E. Geroussi-Bendermacher, Propriété foncière et inventaire d'esclaves: Un texte inédit de Perissa (Thera) tardo-antique, in: V. I. Anastasiadis – P. N. Doukellis (eds.), Esclavage antique et discriminations socio-culturelles, 2005, 335–358.

[6] For administration of the *annona* by diocese, cf. above all CTh 7.6.3 (377): one system for the Asianic and Pontic dioceses, others for Egypt and Oriens, Thrace, and Scythia and Moesia. Cf. also CJ 11.52.1 (393): Thracian diocese exempted *en bloc* from *capitatio*. For the administration of the *dioecesis Asiana*, see D. Feissel, Vicaires et proconsuls d'Asie du IV^e^ au VI^e^ siècle, AntTard 6, 1998, 91–104.

[7] S. Corcoran, The Empire of the Tetrarchs, 1996, 229–232.

described in the Syro-Roman lawbook.[8] However, the lettering, layout, and physical form of IG XII 2, 79 are identical to those of the other Mytilenean texts. Several of the other tax-registers contain slight variations in the form of individual declarations and the manner in which they are recorded, and such is probably the case here too.[9]

There is no internal evidence for the date of the Asianic census-registers. The Hypaipa register has sometimes been dated to the brief period between AD 307/8–313 on the supposition that one fragment involves the taxation of the *plebs urbana*, but this is by no means a necessary interpretation of the relevant passage.[10] A pre-Constantinian date, however, seems certain. There is an entry at Magnesia for a large property (10 $^{1}/_{75}$ $^{1}/_{600}$ *iuga*) registered as [χω(ρίον) Ἀρ]τέμιδος πρὸς συνορ(ίοις) μονοπύργου Ἡρακλίτου.[11] These appear to be sacred lands in the possession of the city's tutelary goddess Artemis Leucophryene. It is notable that Artemis' estate, although included in the *annona*-assessment, is the only property in the Magnesian register with no stated declarant: the land was still in the possession of the goddess. In the mid-320s this land would almost certainly have been confiscated and added to the *res priuata*.[12]

Historical considerations may, with appropriate caution, take us a little further. If, as has often been supposed, the *census* was revised every five years, the registers could in theory reflect one of any number of tax-assessments in the fourth or even fifth century. However, the evidence does not support the idea of full-scale pentennial revision of the *census*. The example of Egypt is significant. The Diocletianic tax-system was not introduced *en bloc* as a single event; rather we should think of a series of reforms extending from AD 287 well into the fourth century.[13] In Egypt, reform of local administration had been underway for ten years by the time of the well-known Edict of Aristius Optatus in 297, which served to clarify the Egyptian scale of tax-rates under the *iugatio-capitatio* double-bracket system.[14] The actual process of recension in Egypt did not begin until 298, and was still incomplete in AD 310. Given this, it is impossible to believe that the census could have been effectively updated empire-wide on a five-

[8] W. Selb – H. Kaufhold, Das syrisch-römische Rechtsbuch, 2002, II 157 (text, ch. 106c), III 226–8. In I. Ephesos 42.12–13, *quod intra Asiam rei publicae iuga esse uideantur cuiusque qualitatis*, the issue of ‹quality› seems only to be whether they are *opima atque idonea* or *defecta ac sterilia* (15–16).

[9] Goffart (above, n. 2) 114–115.

[10] Erxleben (above, n. 5) 314.

[11] Magnesia a3. Kern favoured σύνορ(α), but in these registers πρός in the sense ‹by, near› always takes the dative.

[12] A. H. M. Jones, The Later Roman Empire 284–602, 1964, 415, 732, though cf. P. Debord, Aspects sociaux et économiques de la vie religieuse dans l'Anatolie gréco-romaine, 1982, 143–144. Note also the presence of a ἱερεὺς Ὑψίστου at Magnesia d13.

[13] A. K. Bowman, Some Aspects of the Reform of Diocletian in Egypt, in: Akten des XIII. Internationalen Papyrologenkongresses, 1974, 43–51; Carrié, Fiscalité (above, n. 2) 57–60; F. Mitthof, CPR XXIII 124–125.

[14] P. Cair. Isid. 1 (16 March, 297).

yearly basis.[15] The evidence rather suggests that alterations in the tax-liability of individual cities were carried out on an ad hoc basis as the result of extraordinary petitions.[16] Moreover, the inscription on stone of a city's complete tax- or land-register is an expensive and time-consuming process. The Magnesian register alone must have had around a thousand separate entries.[17] If a complete revision of the tax-register were to occur in only five years' time, rendering the inscription obsolete, the inscription of the register would be a truly absurd process. It therefore seems reasonable to assume *a priori* that the inscription of these census documents was always envisaged as a one-off; the registers ought then to date to the first years of the new tax-system, at the time of the establishment of the initial property-register. The period over which the census was actually carried out in the *dioecesis Asiana* is unknown. In Egypt, as we have seen, the process appears to have taken at least twelve years. In Syria, the boundary-stones set up by the *censitores* show that recension was already underway in AD 296/7; none appear to be later than 305.[18] The Asianic registers ought to date towards the end of this period of provincial recension: a date c. 310 seems most likely.

It is important to appreciate that these texts were intended to be of permanent value. As we have seen, the assessment of the total fiscal potential of a city's agricultural resources was considered to be final and lasting, and it was only with the greatest reluctance that the state permitted alterations to a city's *iugatio*-liability. A remarkable instance of this administrative conservatism is provided by a rescript of the emperor Justinian to the inhabitants of the new city of Justinianopolis (formerly the Milesian village of Didyma), dating to AD 533.[19] Justinianopolis, granted civic status no more than six years earlier, is still paying its taxes through the intermediary of Miletos; that is to say, the village's taxable resources are recorded on the Milesian land- or tax-register. The sum involved is negligible: Justinianopolis' current tax-liability is a mere 41 *solidi*, payable to the treasury of the praetorian prefect (with a further 20 *solidi* to the *sacrae largitiones*). The citizens of Justinianopolis petition the emperor to be relieved entirely of this insignificant burden. However, in order that the state might not find itself out of pocket, they propose that an identical sum be levied instead on hitherto

[15] Carrié, Fiscalité (above, n. 2) 57–59, criticising the position of T. B. Barnes, The New Empire of Diocletian and Constantine, 1982, 226–237. It is possible, but unproven, that the introduction of the 15-year indiction cycle in Egypt in 313 reflects an intention to update the census every fifteen years: R. S. Bagnall – K. A. Worp, Chronological Systems of Byzantine Egypt, ²2004, 7–42.

[16] J. Durliat, Les finances publiques de Diocletian aux Carolingiens (284–889), 1990, 16, 27.

[17] R. Duncan-Jones, Structure and Scale in the Roman Economy, 1990, 137–138.

[18] Millar (above, n. 3) 193–196, 535–544; Sartre (above, n. 3). Note, however, Z. Uri Ma'oz, The Civil Reform of Diocletian in the Southern Levant, SCI 25, 2006, 105–119, who wishes to dissociate the boundary stones from the tax-reform altogether.

[19] D. Feissel, Un rescrit de Justinien découvert à Didymes (1er avril 533), Chiron 34, 2004, 285–365. For the government's reluctance to make piecemeal alterations to the cadaster, see Jones (above, n. 12) 454–455.

unassessed agricultural land elsewhere in Milesian territory: «on those places which have been turned into land, previously having been sea, but which have now become subject to taxation». No new *census* is undertaken. More extraordinary still, there is no attempt to assess the real productive value of the newly-created alluvial land in the Maeander delta plain: far from wishing to extract the maximum possible tax-revenue from the city of Miletos, the state's main concern is that the city's total tax-liability should remain exactly as it was.[20] Practices of this kind – tax-remission through arbitrary redistribution of tax-liability within an individual city's territory – render it all too easy to see how a tax-register inscribed on stone in the early fourth century could still be of practical use a century or more later.

It is, admittedly, harder to see how this principle applies to the *capitatio*. One might have supposed that the *capitatio* was subject to such rapid change through birth, death, and migration, that the register would be out of date within a few years. However, this is to misunderstand one of the basic purposes of the new fiscal system. The complete recension of land and manpower undertaken at the turn of the fourth century was intended precisely to restrict internal migration by tying tax-payers and peasants to a particular locality. The principle of collective fiscal responsibility bound a *curialis* to his city of origin just as tightly as it bound the individual peasant to his ἀγρός or χωρίον.[21] The inscription of the newly-established tax- or land-register was a visible guarantee of the permanent immobility of the provincial population.[22] For the decurial class, this was not all bad news. Since the local *curiae* were responsible for the exaction of the *annona* from lease-holders and small freeholders, individual decurions had ample opportunity to influence the distribution of the tax-burden. The result, so it has been argued, was an ominous tightening of the bonds of rural patronage.[23]

Of the five surviving land-registers, those from Miletos, Hypaipa, and Mylasa are too fragmentary for us to be able to extract any real statistical evidence concerning land tenure and land use. The registers from Mytilene and Thera are better preserved: in both cases we are able to reconstruct several complete or near-complete estates made up of multiple smaller properties. Of the six surviving tax-registers, the Chios register preserves the registrations of around a dozen holdings, but for some reason the figures for *iugatio* and *capitatio* were never inscribed. It is possible that the numerals would have been painted on, facilitating periodic revision of the register; perhaps

[20] The same spirit of administrative economy can be seen, for example, in Theod., Nov. XX.2 [= Just., Cod. 7.41.3], on tax-exemption for marshlands newly brought under cultivation. The problem is studied in more detail in my doctoral thesis, The Maeander (forthcoming).

[21] For the terminology, see below, pp. 454–457.

[22] Carrié (above, n.4) 217–225.

[23] C. Lepelley, Quot curiales, tot tyranni. L'image du décurion oppresseur au Bas-empire, in: E. Frézouls (ed.), Crise et redressement dans les provinces européennes de l'Empire, 1983, 143–156; P. Sarris, Economy and Society in the Age of Justinian, 2006, 181–193. For an attempt to curb inequable distribution of the tax-burden by the decurial class in Caria, see SEG 44, 909.

the inscription was simply left incomplete.[24] Samos offers *iugationes* for a mere six holdings, apparently all from a single estate. The published part of the Coan register also includes no more than half a dozen preserved *iugationes*, once again all from a single large estate; the main unpublished fragment provides complete registrations for a further twelve land-holdings. The Astypalaian register, although of no great surviving length, is of some interest in preserving the complete tax-registration of an estate of ten separate plots. By far the most important of the tax-registers are those of the cities of Magnesia and Tralles, neighbours in the lower Maeander valley. Thanks to these two registers, statistical evidence for land-tenure in the lower Maeander valley in the Late Roman period is more extensive than for any other part of the Mediterranean world outside Egypt. The census records are laid out on different principles at the two cities. At Magnesia, the tax-register is organised by alphabetical order of holding (*chorion*).[25] We have the greater part of the register for land-holdings with names beginning with *alpha* and *beta*, and a small fragment of the properties beginning with *epsilon*. Each holding is given the name of its proprietor – or, more precisely, its declarant – and separate figures for *iugatio* and *capitatio*.[26] Predictably, the names of several large land-owners turn up more than once in the course of the list. By way of illustration, the first fragment begins as follows:

[χω(ρίον) Α - -], ἐξ (ἀπογραφῆς) Βαλεριανοῦ Ῥώμου, ζυ(γὰ) γ ι′ε′ο′ε′, κε(φαλαὶ) [-]
[χω(ρίον) Αὐλ?]ητρίδες, ἐξ (ἀπογραφῆς) Εὐτυχίωνος ἀκροβάτ(ου), ζυ(γὰ) <
[χω(ρίον) Ἀρ]τέμιδος πρὸς συνορ(ίοις) μονοπύργου Ἡρακλίτου, ζυ(γὰ) ι ο′ε′χ′
[χω(ρίον) Α]ἰγίραν ἄοικον, ἐξ (ἀπογραφῆς) Ζηνωνίδος ὀρφ(ανῆς), ζυ(γὰ) λ′ο′α′σ′
[χω(ρίον)] Ἀθηναγόρα, ἐξ (ἀπογραφῆς) Μητροδώρου διασημ(οτάτου), ζυ(γὰ) α γ′κ′χ′, κε(φαλαὶ) ς′ ξ′
χ[ω(ρίον)] Ἀσκλήπιον, ἐξ (ἀπογραφῆς) Εὐδώρου, ζυ(γὰ) β γ′κ′δ′σ′, κε(φαλαὶ) ζ< ς′ν′
χω(ρίον) Ἀνθιανήν, ἐξ (ἀπογραφῆς) Παύλου φιλοσεβ(άστου), ζυ(γὰ) α ε′

[*chorion* Α…], from (the declaration of) Valerianus Romus (?), 3 $^{1}/_{15}$ $^{1}/_{75}$ *iuga*, [-] *capita*.[27]

[24] Elliott (above, n. 2) 83–84.

[25] A *chorion* denotes, in this text, a ‹plot of land› or ‹tax-assessable land-holding›. The term is used differently in the Tralles tax-register: see below, pp. 454–457.

[26] Proprietor and declarant were not necessarily the same person: note Thera a6, 9–10. At Magnesia a14, the declaration is made on behalf of a certain Quadratus by one Syneros (a characteristic slave-name): presumably an absentee landlord and his slave bailiff.

[27] There is no doubt about the reading of the name: Valerianus Romus also appears in e17–18. As a personal name, Romus is extremely rare: CIL VI 13204 (M. Aur. Augg. lib. Romus);

[*chorion* ?Aul]etrides, from (the declaration of) Eutychion the *akrobates*, $^{1}/_{2}$ *iugum*.[28]

[*chorion* of Ar]temis, on the boundaries of the tower of Heraklitos, 10 $^{1}/_{75}$ $^{1}/_{600}$ *iuga*.

[*chorion* A]igiran, uninhabited, from (the declaration of) the orphan Zenonis, $^{1}/_{30}$ $^{1}/_{70}$ $^{1}/_{1200}$ *iuga*.

[*chorion*] of Athenagoras, from (the declaration of) Metrodoros, *vir perfectissimus*, 1 $^{1}/_{3}$ $^{1}/_{20}$ $^{1}/_{600}$ *iuga*, $^{1}/_{6}$ $^{1}/_{60}$ *capita*.[29]

chorion Asklepion, from (the declaration of) Eudoros, 2 $^{1}/_{3}$ $^{1}/_{24}$ $^{1}/_{200}$ *iuga*, 7 $^{1}/_{2}$ $^{1}/_{6}$ $^{1}/_{50}$ *capita*.

chorion Anthianen, from (the declaration of) Paulus, *philosebastos*, 1 $^{1}/_{5}$ *iuga*.[30]

At Tralles, by contrast, the tax-register is organised by the individual proprietor. The land-owner's name is followed by a list of all his properties, again with their associated *iugatio* and *capitatio*. We have complete records for five proprietors: a priest by the name of Fulvius; three decurions, Tatianos, Kritias, and Latron; and a short and puzzling entry for a certain Zotikos, also known as Trophimos. The two inscriptions thus complement one another. The Trallian tax-register, which describes the entire landed property of three major decurial land-owners, provides precious evidence for the make-up of provincial private estates in the later Roman period. But there is no reason to think that these men's property was necessarily wholly characteristic of the region. A wealthy landowner would certainly have owned larger individual plots of land, with a higher degree of agricultural specialisation, than would a small-holder or subsistence farmer. The Magnesian census, organised alphabetically by the individual plot, ought to give a more representative picture of the patchwork of land holdings in the lower Maeander valley. Once again, we have the large plots owned by decurions (and senators), units within large dispersed estates, worked by slaves or *coloni*; but we also find here the modest family plots of individual male and female smallholders, entirely absent from the surviving part of the Tralles register.

The tax-registers from the *dioecesis Asiana* have attracted little serious scholarship. Probably the most influential study has been A. H. M. Jones' 1953 article, the con-

AE 1938, 97. It is conceivable that we have an internal abbreviation Ῥωμ(αί)ου: compare a9 and d2, where we appear to have ἀγρ(ίδι)ον (note the abbreviation mark on the *omicron* in a9). See H. I. Bell, Abbreviations in Documentary Papyri, in: Studies Presented to D. M. Robinson, 1953, II 424–433. It is, however, hard to see what *Rhomaios* would signify at this date.

[28] I restore [Αὐλ]ητρίδες, on the basis that Eutychion is an ἀκροβάτης; the two religious offices are found together in I. Magnesia 237, ὁ τόπος τρικλείνου ἱερῶν αὐλητρίδων καὶ ἀκροβατῶν; cf. also I. Magnesia 119.17. Magnesian ἀκροβάται are ‹mountain-walkers›: see L. Robert, Documents d'Asie Mineure, 1987, 35–46. For ἀκροβάται at neighbouring cities, see I. Ephesos 943.4, with commentary; I. Erythrai 64.6 (μιμαντοβάτην, ‹walker on Mt Mimas›).

[29] For the genitive Ἀθηναγόρα, cf. e.g. IG II^{2} 7458; the property also appears at Magnesia b5.

[30] Ἀνθιώην Kern; I read Ἀνθιανήν from the squeeze in Berlin. Jones (above, n. 2) 53, plausibly interprets *philosebastos* as signifying ‹member of the *philosebastos boule*›, i.e. ‹decurion›.

clusions of which were reprised in his Later Roman Empire.[31] Jones' primary interest, however, was not in the estates themselves, but in the rural population, more particularly the ratio of slave to free labour. As we shall see, the inscriptions in fact reveal almost nothing on this subject; Jones' arguments were based on a number of misconceptions about the registered *capitationes* (see below, p. 458, 478). The situation has not been helped by the lack of adequate editions of the texts. In this article I offer a revised text and commentary of one of the most interesting and complicated of the tax-registers, that of Tralles; in an Appendix I re-edit the much shorter, but no less interesting tax-register of Astypalaia. After treating various problems specific to the Tralles tax-register, I move on to a broader examination of the nature of land-tenure in Western Asia Minor and the Aegean islands in the fourth century, as revealed by the registers. I argue that our documents can be used to generate reliable statistical evidence on agricultural specialisation, size of land-holdings, and the size and nature of private estates. I hope also to have explained for the first time the nature and origin of the ‹curious fractions› found in the tax-registrations of individual farms, by means of a new reconstruction of the details of the Diocletianic tax-régime in the *dioecesis Asiana*.

The Tax-Register of Tralles

Block of blue-white marble, complete but for a corner broken off at top right. Removed from the paving of a road between Aydın and the Maeander river, subsequently in the collection of the Evangelical School at Smyrna (Inv. 170), later built into the façade of the girls' school Ὁμήρειον at Smyrna. Presumed destroyed in 1923. Dimensions: H. 1.03, W. 0.755, Th. 0.37, Lh. 0.01. Ed. A. Fontrier, Μουσεῖον 3, 1880, 133–136 no.176; corrected edition, id., BCH 4, 1880, 336–338, with facsimile between pp. 64 and 65; M. Pappakonstantinou, Αἱ Τράλλεις ἤτοι Συλλογὴ Τραλλιανῶν ἐπιγραφῶν, 1895, 43–45 no. 65, Pl.9; (F. Poljakov, Die Inschriften von Tralleis und Nysa I, 1989, 202–208 no. 250). A transcription of the text made by J. Keil in Nov. 1910 is reproduced by Poljakov, p. 208. Date: AD c. 310.

Fontrier's transcript appears to have been extremely accurate in respect of numerals, and in ambiguous cases I have on the whole followed him in preference to his successors. The ordinary Greek alphabetical system is used (α = 1, β = 2 etc.). The symbol < signifies $^1/_2$. Whole numerals have no further distinguishing mark (γ = 3). Fractions are signified by a rising stroke above and to the right of the numeral (γ′ = $^1/_3$). Fractions expressed in two numerals have only a *single* rising stroke, between the two letters (ι′β = $^1/_{12}$); contrast the Magnesian tax-register, where such fractions are expressed with strokes above each letter (ι′β′). The numeral twenty (ϰ) can be distinguished from the abbreviation for ϰ(εφαλαί) by the addition of a short stroke at the base of the lower diagonal in the latter case. The figure ø signifies ‹sum total›: it is common in Roman Egypt as an abbreviation for ὁ(μοῦ) (e.g. P. Lond. IV 601).

The forms of the numerous abbreviations in the text seem also to be more accurately rendered by Fontrier than by Pappakonstantinou or Keil. Abbreviations are sometimes indicated with a single elevated letter, as χ^{ω} (passim), ϰ^{ω} (passim), συνκτ^{η} (Col. II 19–20), sometimes with the symbol ^{ς}, as ἀγρ^{ς} (passim), βουλ^{ς} (Col. II 14, 33, 45), χωρ^{ς} and ἐνβαθρ^{ς} (Col. II 48). This latter symbol (marking any kind of abbreviation, not necessarily a *sigma*) seems not to be common be-

[31] Jones (above, n. 2).

fore the fourth century: A. Chaniotis, The Jews of Aphrodisias: New Evidence and Old Problems, SCI 21, 2002, 215; A. Blanchard, Sigles et abbreviations dans les papyrus documentaires grecs, 1974, 8, 11. It may well ultimately derive from Latin documentary practice: N. Duval – F. Prévot, Recherches archéologiques à Haïdra I: Les inscriptions chrétiennes, 1975, 395–397.

Column I

5	[- - - τῆς?] αὐτῆς	… the same
	[- - -]N κ(εφαλαὶ) νδ ς′ι′ε (?)ρ′ν	… 54 $^{1}/_{6}$ $^{1}/_{15}$ $^{1}/_{150}$ *capita*
	[- - -]	
	[- - - ?ζώ]ων κ(εφαλαὶ) ε<ς′ν′σ′μ	… of livestock, 5 $^{1}/_{2}$ $^{1}/_{6}$ $^{1}/_{50}$ $^{1}/_{240}$ *capita*
	[- - - ζ]ώων κ(εφαλαὶ) ς<ξ′	… of livestock, 6 $^{1}/_{2}$ $^{1}/_{60}$ *capita*
10	[- - - ζ]ώων κ(εφαλαὶ) γ ε′ν′υ′	… of livestock, 3 $^{1}/_{5}$ $^{1}/_{50}$ $^{1}/_{400}$ *capita*
	[- - -]	
	[- - -] κ(εφαλαὶ) β	… 2 *capita*
	[- - -]ονδαμοις· ζυ(γὰ) β ν′ α′σ	… -ondamoi/-ondama, 2 $^{1}/_{50}$ $^{1}/_{1200}$ *iuga*
	[- - -]	
15	[- - -]	
	[- - -]ω· ζυ(γὰ) δ, κ(εφαλαὶ) δ<	4 *iuga*, 4 $^{1}/_{2}$ *capita*
	[- - -]π′ε ρ′ν ω	… $^{1}/_{85}$ $^{1}/_{150}$ $^{1}/_{800}$
	[- - -]K	
	[- - -] ζυ(γὰ) β	… 2 *iuga*
20	[- - -]	
	[- - -] κ(εφαλαὶ) ς γ′ι′π′	… 6 $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{80}$ *capita*
	[- - -]ι′ε ρ′κ	… $^{1}/_{15}$ $^{1}/_{120}$
	[- - -]ιν· ζυ(γὰ) γ η′λ′	… -in, 3 $^{1}/_{8}$ $^{1}/_{30}$ *iuga*
	[- - -]Δ ρ′ν α′σ	… $^{1}/_{150}$ $^{1}/_{1200}$
25	[- - -]τ′, κ(εφαλαὶ) γ ε′ξ′ρ′	… $^{1}/_{300}$ [*iuga*], 3 $^{1}/_{5}$ $^{1}/_{60}$ $^{1}/_{100}$ *capita*
	[- - -]ΜΑΔ, κ(εφαλαὶ) δ υ′	… 4 $^{1}/_{400}$ *capita*
	[- - -]της· ζυ(γὰ) η γ′ι′ε ο′ε	… 8 $^{1}/_{3}$ $^{1}/_{15}$ $^{1}/_{75}$ *iuga*
	[- - χω(ρίῳ) Κε]ρασκόρδοις· ζυ(γὰ) ι ρ′	… [the *chorion* Ke]raskorda, 10 $^{1}/_{100}$ *iuga*
	[- - -]	
30	[- - -]ΣΑΥ· ζυ(γὰ) α ι′β	… 1 $^{1}/_{12}$ *iuga*
	[- - -] ζυ(γὰ) γ′ι′ε	… $^{1}/_{3}$ $^{1}/_{15}$ *iuga*
	[- - -] ζυ(γὰ) β<δ′μ′	… 2 $^{1}/_{2}$ $^{1}/_{4}$ $^{1}/_{40}$ *iuga*
	[- - -] ζυ(γὰ) γ<γ′κ′δ	… 3 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{24}$ *iuga*
	[- - -]Σ	
35	[- - -]	
	[- - -Τραλλιανὸ]ς βουλ(ευτής)	… Trallian decurion
	[- - -]	

	[- - -]	
	[- - -]	
40	[- - -]Υ κ(εφαλαὶ) ι΄ς	… $^{1}/_{16}$ *capita*
	[- - -]	
	[- - -]κοπίῳ Βασιλικοῦ	… the [-] of Basilikos
	[- - -]	
	[- - -]	
45	[- - -] ζυ(γὰ) β γ΄η΄π΄α΄, κ(εφαλαὶ) α<	… 2 $^{1}/_{3}$ $^{1}/_{8}$ $^{1}/_{80}$ $^{1}/_{1000}$ *iuga*, 1 $^{1}/_{2}$ *capita*
	[- - -]	
	[- - -]	
	[- - -] κ(εφαλαὶ) ι΄ς	… $^{1}/_{16}$ *capita*
	[- - -]	
50	[- - -]Γ, κ(εφαλαὶ) β<δ΄κ΄ο΄	… 2 $^{1}/_{2}$ $^{1}/_{4}$ $^{1}/_{20}$ $^{1}/_{70}$ *capita*

For the fragmentary first column, I generally follow Fontrier's facsimile of the text in BCH, since he appears to have been able to read considerably more than either Pappakonstantinou or Keil. In more than one place his readings make numerical sense where those of his successors do not (e.g. line 13). In line 5, I assume that the word αὐτῆς forms part of a clause such as that in Col. II 20. The *capitatio* in the following line, if we can trust the reading here, is extraordinarily large: 54 $^{1}/_{6}$ $^{1}/_{15}$ $^{1}/_{150}$. (Fontrier's ΒΛ at the end of the numeral is senseless; I restore ρ΄ν, also attested as a *capitatio*-fraction in Col.I 17, 24, II 11, 46.) The largest *capitatio* otherwise known in these texts is attached to the huge 75-*iuga* senatorial estate at Magnesia (c2), which had a corresponding *capitatio* of 52 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{20}$ $^{1}/_{1200}$ (κε(φαλαὶ) νβ < γ΄ι΄κ΄α΄σ: so I read from the squeeze in Berlin). This has important consequences for the nature of the properties listed in this column: see below, n. 118.

Lines 8–10 clearly preserve part of an entry listing the slaves and livestock located in various villages, as in Col. II 15–7, 34–7, and 46. In Col. II these entries follow immediately after the proprietor's name; we may then have a new entry beginning in line 8, with the total *iugatio* of the previous entry in the short line 7. In line 13, Fontrier's readings give a plausible *iugatio* (2 $^{1}/_{50}$ $^{1}/_{1200}$); the alternative reading ρν would give us a *iugatio* of more than 150, twice as large again as the largest plot otherwise known. In line 28, presumably we have a holding [ἐν or πρὸς χω(ρίῳ) Κε]ρασκόρδοις; compare Col. II, 35, χω(ρίου) Κερασκόρδων. *κεράσκορδον ought to mean ‹horn-garlic›; compare ἐλαφόσκορδον, ὀφιόσκορδον, ἀγριόσκορδον (Diosc. 2.152). A village Σκόρδων is attested in Roman Egypt (M. Drew-Bear, Le Nome Hermopolite: toponymes et sites, 1979, 257–258), and compare perhaps Σκορδαπία in Phrygia (TIB 7: Phrygien und Pisidien, 384–385). In line 42 we ought to have the name of an agricultural resource of some kind: most likely a [χορτο]κοπίῳ, ‹place where one cuts fodder› (Chr. Schuler, Ländliche Siedlungen und Gemeinden im hellenistischen und römischen Kleinasien, 1998, 126), or conceivably a [ξυλο]κοπίῳ, ‹coppice›, ‹place where one cuts wood›. For the latter term, cf. D. Papachryssanthou, Archives de l'Athos XV: Actes de Xénophon, 1986, doc.1 (AD 1089), line 135, ξυλοκοπεῖον τῆς μονῆς τοῦ Βαρναβίτζη. Around AD 600, the villagers of Halioi and Apoukomis in north Galatia came to blows over their rights to a τόπος ξυλοπάροχος: Vita Theodori Sykeonis (ed. A.-J. Festugière, 1970), ch. 150. Presumably a holding is here registered [σὺν ξυλο-/χορτο]κοπίῳ, as in IG XII 2, 76 (Mytilene) e12, σὺν ἐλεου[ργ]ε[ίῳ] (olive-press). In IG XII 6 (Samos), 980.2 we appear to have a plot registered σὺν δροιμοῖς (i.e. δρυμοῖς), ‹along with the woods›.

Column II

[- - -]K[- - -]
[- -]ΤΟΛΕΠΗ[- -]
ἀγρ(ὸς) ?Λινος ἤτο[ι - -]
τόπος Ἰωνιον[- -]
τοπάρια Διονυ[σ- -]
ἀγρ(ὸς) ΣΗΛΕΧΗΡΙΟΝ [- -]Λ̣ΒΔ̣ΣΟΥΚ[- -]
ø ζυ(γὰ) [- -]
Ζωτικὸς ⟨ὁ⟩ καὶ Τρόφιμος οἰκῶν ἐν [- -]
ὑπὸ ἐμβαθρώνην πρόσοδον K[- -]
Φούλβιος ἱερεὺς *vac.*
ἀγρ(ὸς) Κοζανατα· ζυ(γὰ) γ ξ′, κ(εφαλαὶ) α<ι′ε ρ′ν
ἀγρ(ὸς) Συανα πρὸς Λευκοπέτρ(οις)· ζυ(γὰ) ε′ξ′χ′, κ(εφαλαὶ) β<η′
ø ζυ(γὰ) γ ε′ξ′χ′
Τατιανὸς Τραλλι⟨α⟩νὸς βουλ(ευτής)· ζώων κ(εφαλαὶ) δ′ι′ς
ἐν χω(ρίῳ) Μονναροις· δούλων καὶ ζώων κ(εφαλαὶ) γ<ς′μ′ε
ἐν χω(ρίῳ) Μονναροις· ζώων κ(εφαλαὶ) γ<γ′ι′ν′
ἐν χω(ρίῳ) Παραδείσῳ· δούλων καὶ ζώων κ(εφαλαὶ) δ δ′κ′ρ′
ἀγρ(ὸς) Τόμος καὶ Ὑπερβολὴ τὸ κ(αὶ) Πύργιον· ζυ(γὰ) ιζ<ξ′, κ(εφαλαὶ) θ
ἀγρ(ὸς) Τραρα συνκτή(σεως) τῆς περὶ Παράδεισον· ζυ(γὰ) ι′ς
ἀγρ(ὸς) Τραλλικὼν συνκτή(σεως) τῆς αὐτῆς· ζυ(γὰ) <η′
τόπος ἐν Παρκαλλοις Ἀλεξάνδρου κοπιδέρμου· ζυ(γὰ) ε′κ′ε
χω(ρίον) Μονναρα· ζυ(γὰ) <γ′ι′ν′ς′μ, κ(εφαλαὶ) ιε<λ′μ′
ἀγρ(ὸς) Νεικοστρατιανός· ζυ(γὰ) β<γ′[.]α′ς
ἀγρ(ὸς) Αραρα ἐν κώ(μῃ) Αραροις· ζυ(γὰ) δ<[..]η′ξ′γ′, κ(εφαλαὶ) γ′λ′ρ
ἀγρ(ὸς) Πριάπιον καὶ Ἑκατέου αὐλή· ζυ(γὰ) ι′ν′τ′, κ(εφαλαὶ) ς<ς′υ′
ἀγρ(ὸς) Νύμφαι· ζυ(γὰ) δ′κ′π′ε, κ(εφαλαὶ) α<
ἀγρ(ὸς) Κολεα ἤτοι Κυπαρίσσιον· ζυ(γὰ) γ<η′, κ(εφαλαὶ) ς<ε′λ′
ἀγρ(ὸς) Καλύβια· ζυ(γὰ) α<ε′π′
ἀγρ(ὸς) Μόναυλις πρὸς κώ(μῃ) Ορδομου κήπ(οις)· ζυ(γὰ) ε<ι′β ο′,
κ(εφαλαὶ) ε
ἀγρ(ὸς) Ορβηλα· ζυ(γὰ) ε<γ′η′ξ′υ′, κ(εφαλαὶ) γ<η′μ′
ἀγρ(ὸς) Αλκιζω κώ(μη)· ζυ(γὰ) ς ι′ν′τ′, κ(εφαλαὶ) ζ<ι′β π′
ø ζυ(γὰ) να<η′ξ′ο′
Κριτίας Τραλλιανὸς βουλ(ευτής)· ζώου κ(εφαλαὶ) η′
ἐν ἀγρ(ῷ) Ορδομου κήποις· δούλων καὶ ζώων κ(εφαλαὶ) β
ἐν ἀγρ(ῷ) Πλατάνῳ, χω(ρίου) Κερασκόρδων· ζώων κ(εφαλαὶ) [-]
ἐν χω(ρίῳ) Πεισωνιανοῖς· ζώων κ(εφαλαὶ) δ′
ἀγρ(ὸς) Κλαστανους καὶ Λύκου Μόναυλις· ζυ(γὰ) ς ς′ο′
ἀγρ(ὸς) Εὔκαρπος ἐν κώ(μῃ) Ορδομου κήπ(οις)· ζυ(γὰ) γ γ′η′ν′ο′
ἀγρ(ὸς) Ορδομου κῆπ(οι)· ζυ(γὰ) γ<δ′ι′ε ο′ε υ′

ἀγρ(ὸς) Μόνοικος· ζυ(γὰ) α<γ΄ι΄κ΄σ΄ω΄, κ(εφαλαὶ) γ<η΄ρ΄
ἀγρ(ὸς) Λευκὴ κώ(μη) πρὸς τῷ χάρακι Μ Πο(?)· ζυ(γὰ) δ<γ΄ξ΄υ΄,
κ(εφαλαὶ) [-]
ἀγρ(ὸς) Ῥοδέα· ζυ(γὰ) <λ΄μ΄τ΄, κ(εφαλαὶ) ε (?)
τόπος Βλέπων· ζυ(γὰ) π΄
ø ζυ(γὰ) κ<ε΄ι΄β ρ΄ν
Λάτρων Τραλλιανὸς βουλ(ευτής)·
ἐν χω(ρίῳ) Δάφνῃ· δούλων καὶ ζώων κ(εφαλαὶ) γ<κ΄ρ΄ν
ἀγρ(ὸς) τὰ περὶ Δάφνην καὶ Μυρσίνην καὶ Δρῦν· ζυ(γὰ) η
χωρ(ίον) Βουνὸς ἐνβαθρ(ικόν)· ἀγρ(ὸς) Ἀμπελών· ζυ(γὰ) α<γ΄ι΄β
ἀγρ(ὸς) Ἱππικὴ καὶ Σύμβολος, χω(ρίου) Βουνῶν· ζυ(γὰ) α ι΄
ἀγρ(ὸς) Βουνὸς τοῦ αὐτοῦ χω(ρίου)· ζυ(γὰ) ς κ΄
ø ζυ(γὰ) ιζ γ΄π΄
Παυσανίας ὁ καὶ Ἀχόλιος· ζώων κ(εφαλαὶ) ς΄μ΄η΄
ἀγρ(ὸς) Λύγος· ζυ(γὰ) δ<γ΄[.], κ(εφαλαὶ) ΓΙ[.]ΧΓΖΒ΄Η΄Μ΄Ι
ἀγρ(ὸς) Λ[- -] ΓΙΓΚ΄ΔΒ΄ΝΑΓΡ
- - - - - - - -

Translation

An *agros* Linos (?), also known as …,
A place Ionion …
Places Diony[s …
An *agros* …
Total: [-] *iuga*.
Zotikos, ⟨also known as⟩ Trophimos, living in …,
under the category of embathronic revenue …
Fulvius, priest.
An *agros* Kozanata, 3 $^{1}/_{60}$ *iuga*, 1 $^{1}/_{2}$ $^{1}/_{15}$ $^{1}/_{150}$ *capita*
An *agros* Syana near Leukopetra, $^{1}/_{5}$ $^{1}/_{60}$ $^{1}/_{600}$ *iuga*, 2 $^{1}/_{2}$ $^{1}/_{8}$ *capita*
Total: 3 $^{1}/_{5}$ $^{1}/_{60}$ $^{1}/_{600}$ *iuga*
Tatianos, Trallian decurion. Of livestock, $^{1}/_{4}$ $^{1}/_{16}$ *capita*.
At the *chorion* Monnara, of slaves and livestock, 3 $^{1}/_{2}$ $^{1}/_{6}$ $^{1}/_{45}$ *capita*.
At the *chorion* Monnara, of livestock, 3 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{50}$ *capita*.
At the *chorion* Paradeisos, of slaves and livestock, 4 $^{1}/_{4}$ $^{1}/_{20}$ $^{1}/_{100}$ *capita*.
An *agros* Tomos and Hyperbole, also known as Pyrgion, 17 $^{1}/_{2}$ $^{1}/_{60}$ *iuga*, 9 *capita*.
An *agros* Trara, of the joint possession in the vicinity of Paradeisos, $^{1}/_{16}$ *iuga*.
An *agros* Trallikon, of the same joint possession, $^{1}/_{2}$ $^{1}/_{8}$ *iuga*.
A place in Parkalla, of Alexandros *kopidermos*, $^{1}/_{5}$ $^{1}/_{25}$ *iuga*.
A *chorion* Monnara, $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{50}$ $^{1}/_{240}$ *iuga*, 15 $^{1}/_{2}$ $^{1}/_{30}$ $^{1}/_{40}$ *capita*.
An *agros* Neikostratianos, 2 $^{1}/_{2}$ $^{1}/_{3}$ [.] $^{1}/_{1200}$ *iuga*.
An *agros* Arara in the village Arara, 4 $^{1}/_{2}$ […] $^{1}/_{8}$ $^{1}/_{60}$ $^{1}/_{3000}$ *iuga*, $^{1}/_{3}$ $^{1}/_{30}$ $^{1}/_{100}$ *capita*.
An *agros* Priapion and the farmstead of Hekateos, $^{1}/_{10}$ $^{1}/_{50}$ $^{1}/_{300}$ *iuga*, 6 $^{1}/_{2}$ $^{1}/_{6}$ $^{1}/_{400}$ *capita*.
An *agros* Nymphai, $^{1}/_{4}$ $^{1}/_{20}$ $^{1}/_{85}$ *iuga*, 1 $^{1}/_{2}$ *capita*.
An *agros* Kolea, also known as Kyparission, 3 $^{1}/_{2}$ $^{1}/_{8}$ *iuga*, 6 $^{1}/_{2}$ $^{1}/_{5}$ $^{1}/_{30}$ *capita*.
An *agros* Kalybia, 1 $^{1}/_{2}$ $^{1}/_{5}$ $^{1}/_{80}$ *iuga*.

An *agros* Monaulis, by the village Ordomou Kepoi, 5 1/2 1/12 1/70 *iuga*, 5 (?) *capita*.
An *agros* Orbela, 5 1/2 1/3 1/8 1/60 1/400 *iuga*, 3 1/2 1/8 1/40 *capita*.
An *agros* Alkizo Kome, 6 1/10 1/50 1/300 *iuga*, 7 1/2 1/12 1/80 *capita*.
Total: 51 1/2 1/8 1/60 1/70 *iuga*.
Kritias, Trallian decurion. One head of livestock, 1/8 *capita*.
In the *agros* Ordomou Kepoi, of slaves and livestock, 2 *capita*.
In the *agros* Platanos, of the *chorion* Keraskorda, of livestock, [-] *capita*.
In the *chorion* Peisoniana, of livestock, 1/4 *capita*.
An *agros* Klastanous and Lykou Monaulis, 6 1/6 1/70 *iuga*.
An *agros* Eukarpos, in the village Ordomou Kepoi, 3 1/3 1/8 1/50 1/70 *iuga*.
An *agros* Ordomou Kepoi, 3 1/2 1/4 1/15 1/75 1/400 *iuga*.
An *agros* Monoikos, 1 1/2 1/3 1/10 1/20 1/200 1/800 *iuga*, 3 1/2 1/8 1/100 *capita*.
An *agros* Leuke Kome, by the ?fence/palisade M Po (?), 4 1/2 1/3 1/60 1/400 *iuga*, [-] *capita*.
An *agros* Rhodea, 1/2 1/30 1/40 1/300 *iuga*, 5 (?) *capita*.
A place Blepon, 1/80 *iuga*.
Total, 20 1/2 1/5 1/12 1/150 *iuga*.
Latron, Trallian decurion.
In the *chorion* Daphne, of slaves and animals, 3 1/2 1/20 1/150 *capita*.
An *agros* in the region around Daphne and Myrsine and Drys, 8 *iuga*.
A *chorion* Bounos, enbathric; an *agros* Ampelon, 1 1/2 1/3 1/12 *iuga*.
An *agros* Hippike and Symbolos, of the *chorion* Bounoi, 1 1/10 *iuga*.
An *agros* Bounos, of the same *chorion*, 6 1/20 *iuga*.
Total, 17 1/3 1/80 *iuga*.
Pausanias, also known as Acholios. Of livestock, 1/6 1/48 *capita*.
An *agros* Lygos, 4 1/2 1/3 [-] *iuga*, [- -] *capita*.
An *agros* … [- -]

Lines 1–7: **3** ΛΙΓΡΙΟΣ Keil; ΛΙΝΟΣ Fontr., Papp. I restore ἤτοι by comparison with Col. II 27 and Magnesia b15. **4** Πανιωνι̣[- -] Keil; Ιωνιον Fontr., Papp. **5** Διο[-] Fontr.; Διονυ[-] Papp.; Λ̣Ι̣Ǫ[-] Keil. **6** ΣΗΛΕΧΗΡΙΟΝ Fontr., Papp.; ΕΙΙΑΓ[.]Ρ[- -] Keil. Λ̣ΒΛ̣ΣΟΥΚ Keil; ΕΟΥΚ Fontr.

Lines 8–9: The stone reads Ζωτικὸς καὶ Τρόφιμος. There are a few cases in other tax-registers of joint property-ownership: compare Magnesia b7–8 (Themison, Tiberius, and Philippos of Tralles); Thera a9–10 (Euporia, Paregorios, and Sophronios, heirs of Paregorios). However, the singular participle here (οἰκῶν not οἰκοῦντες) is difficult. Hence we probably ought to supplement the text Ζωτικὸς ⟨ὁ⟩ καὶ Τρόφιμος; cf. II 52, Παυσανίας ὁ καὶ Ἀχόλιος. The formulae ‹living in one's own house› (οἰκ(ῶν) ἐν οἰκ(ίᾳ) ἰδίᾳ) and ‹living in a particular village› (οἰκ(ῶν) ἐν κώ(μῃ) τῇ δεῖνα) appear in the Hypaipa register (I. Ephesos 3804–5). Both formulae are found in census returns of earlier periods: a tax-declaration from the Judaean desert of AD 127 is introduced with the formula Βαβθα Σίμωνος Μαωζηνή … οἰκοῦσα ἐν ἰδίοις ἐν αὐτῇ Μαωζᾳ (P. Yadin 16.13–14, with H. M. Cotton, Land Tenure in the Documents from the Nabataean Kingdom and the Roman Province of Arabia, ZPE 119, 1997, 255–265). It is unclear why Zotikos is the only declarant in this text to specify his place of residence: perhaps he was the only declarant not permanently resident in the city of Tralles. For the phrase ὑπὸ ἐμβαθρώνην πρόσοδον, ‹under (the category of) embathronic revenue›, see below, pp. 459–463.

10: For the designation ἱερεύς, compare Magnesia d13 (Ἀρτεμᾶ ἱερ(έως) Ὑψίστου), a2 (Εὐτυχίωνος ἀκροβάτ(ου): see above, n. 28), and perhaps d3 (προ(φήτιδος)?).

11: Κοζαναταὶ Keil. (ad fin.) B′N Fontr., Papp.; P′II Keil. Κοζανατα is an indigenous name: personal names in Κοζα- are known in Pisidia and Isauria (L. Zgusta, Kleinasiatische Personennamen, 1964, 238), and the termination is well-paralleled (id., Kleinasiatische Ortsnamen, 1984, Rückläufiger Index).

12: Σιανα Fontr. (BCH), Keil; Συανα Fontr. (Mouseion), Papp. Σιανα is the better-attested reading, but Συανα looks more authentically Carian (cf. the placename Συαγγελα): W. Blümel, Einheimische Ortsnamen in Karien, EA 30, 1998, 178–179. The termination is very common across Anatolia (Tyana, Komana etc.). Λευκοπετραν Papp., Λευκοπετρ *v.* Fontr., Keil. I assume that the place-name is (τὰ) Λευκόπετρα. Leukopetra is attested on Trallian coinage under Valerian I, rev. legend ἐπὶ γρ. Μ. Αὐρ. Ἱέρωνος Λευκοπετρείνου (F. Imhoof-Blumer, Monnaies grecques, 1883, 391: Paris, Berlin): either an (extremely rare) example of an ethnic on coinage, or (as Chr. Schuler plausibly suggests, per litt.) a second *cognomen* or *alias* of Hieron, derived from his native village.

13: The readings of the numerals in ll. 11–13 are uncontroversial, but the sum does not add up: we ought to have 3 $^{1}/_{5}$ $^{1}/_{30}$ $^{1}/_{600}$ *iuga* (ζυ(γὰ) γ ε΄λ΄χ΄). This is presumably an error of the *tabularius* or the stone-cutter. However, it is notable that in all four lists of estates in the second column there is a slight discrepancy between the actual sum of the inscribed *iugationes* and the nominal sum-total (lines 13, 32, 44, 51); although some fractions are missing for the estate of Tatianos (lines 23 and 24), the figures cannot be so restored as to make the sum work. In no case, however, is the discrepancy more than a fraction of a *iugum*: the largest discrepancy is that for the estates of Latron (lines 45–51), where the total of the figures given is 17 $^{1}/_{15}$ *iuga*, compared to the given sum total of 17 $^{1}/_{3}$ $^{1}/_{80}$ *iuga* (see below, note on line 51). It seems probable that there has been some rounding up or down in the process of accounting. Such rounding-off can be proved beyond doubt in the case of Astypalaia (IG XII 3, 180), where there are three clear instances of slight rounding up or down to produce running-totals in ζ(υγο)κ(εφαλαί), and substantial rounding down of fractions to produce the sum-totals for the estate as a whole: see Appendix below.

15: Μονναρα: the termination (similarly Τραρα, l. 19, and Αραρα, l. 24) is well-paralleled in indigenous toponymy: cf. Kydrara (Hdt. 7.3), Panamara, Pinara etc.

17: Παράδεισος: probably not a Persian relic, simply a ‹walled tree-garden›. See M. Carroll-Spillecke, ΚΗΠΟΣ. Der antike griechische Garten, 1989, 54–55, 58–59; Schuler, Ländliche Siedlungen, 1998, 123–125.

18: Πυρνιον (Keil); for Carian Πυρνος, see L. Robert, OMS VII 305, but -ιον is not a Carian termination, and Πύργιον (Fontr., Papp.) is considerably easier. The largest single land-holding in the Tralles tax-register was originally two plots, Tomos and Hyperbole, later amalgamated and known as Pyrgion, ‹the tower›. For other such amalgamations, cf. Col. II 37, 49, Magnesia d5, e13.

19: The term σύνκτησις is extremely rare. Elsewhere in the tax-registers, it appears only at Magnesia g1, where I read from the squeeze in Berlin [σ]ύνκτησις ἡ περὶ Διδασσας. The term also occurs in an inscription from Hypaipa dating to AD 301 (I. Ephesos 3803 b4–5, c10, e13, f4, with T. Drew-Bear, An Act of Foundation at Hypaipa, Chiron 10, 1980, 532–533), denoting a jointly-owned property, probably shared between the members of one or more guilds (συστήματα). One fragment of the Hypaipa text forbids alienation of any part of this joint property (f4–5: [οὐδ]ὲ ἐξέσται τινὶ ἐ[ξαλλοτριῶσαι … μέ]ρος τι τῆς συνκτή[σεως]). In the Theran, Magnesian, Coan and Astypalaian registers, we have examples of plots of land which are designated as a μέρος, a ‹part› of what we may assume to be a single jointly-owned χωρίον: Thera a5, χω(ρίον) Οἴκων μέρος; Thera b3, χω(ρίον) Καλάμου μέρ(ος) < (so I read from the squeeze); Magnesia e18, χω(ρίον) Βωπαίων μέ(ρος) <; IG XII 2, 182.3, χω(ρίον) Βάρρος μέ(ρος) <; IG XII 2, 182.4, χω(ρίον) Βατράχου μέ(ρος) δ΄ (i.e. $^{1}/_{4}$); Herzog, Koische Forschungen 14.6, χω(ρίον) Μεγάλου Ἀγροῦ μέρ(ος) δ΄ (several more examples in unpublished Coan fragments); IG XII 2, 181.4, χω(ρίον) Βᾶρις μέρ(ος) < ι΄ (i.e. $^{3}/_{5}$). However, at Tralles, the two holdings Trara and Trallikon are both part of the *same* σύνκτησις near Paradeisos, and hence the term σύνκτησις ought to signify not a single land-holding divided into a number of μέρη, but a group or ‹parcel› of plots in the joint possession of Tatianos and other landowners at Paradeisos. The Magnesian [σ]ύνκτησις ἡ περὶ Διδασσας has only a single declarant, Philippos of Tralles (g1);

however, the same individual appears as part of a Trallian property-consortium at Magnesia in b7–8, suggesting that here too we may be dealing with jointly-owned property. This sense of ‹parcel› is explicit in a letter of the emperor Julian of AD 356, in which he gives as a gift to the *rhetor* Euagrius a συγκτησείδιον ἀγρῶν τεττάρων (Ep. 4), a ‹parcel› of four separate but (presumably) contiguous plots of land – in this case all in the emperor's possession.

20: Τραλλικών: Pliny knew a village called *Trallicon* near Harpasa, which no longer existed in his day (HN 5.109).

21: The indigenous termination -αλλα is well-paralleled, especially in Pisidia: L. Zgusta, Kleinasiatische Ortsnamen, 1984, Rückläufiger Index. κοπιδερμία is the subject of an obscure passage of Malalas concerning the anti-slavery legislation of Anastasius: ἐξεφώνησεν … διάταξιν, ὥστε μὴ ποιεῖν τινα ἔγγραφον κοπιδερμίας, μήτε δὲ αὐτὸ τὸ ὄνομα τοῦ κοπιδέρμου ὀνομάζεσθαι, μήτε τὸ πρᾶγμα γίνεσθαι, τῆς αὐτοῦ νομοθεσίας ἐχούσης οὕτως, ὅτι ‹ἡμῖν ἐστιν εὐχὴ τοὺς ἐν ζυγῷ δουλείας ἐλευθερεῖν· πῶς οὖν ἀνεξόμεθα τοὺς ἐν ἐλευθερίᾳ ὄντας ἄγεσθαι εἰς δουλικὴν τύχην;› (Malalas 16.14). κοπιδερμία appears to be something unpleasant done to a free man which reduces him to a ‹slavish› condition; an Aesopic proverb (ὄνος καὶ κοπίδερμος μίαν τυχὴν ἔχουσιν, Aes. Prov. 15) and some Latin glosses (CGL V 444.60, 457.2, 501.10: *flagello*, *verbero*, *casabus*) confirm the general sense. On the most plausible modern explanation, κοπιδερμία is a crude slang word for castration, and a κοπίδερμος is a eunuch (B. Baldwin, κοπιδερμία/κοπίδερμος, Glotta 59, 1981, 117–118). The existence of a συνέδριον of κοπίδερμοι at Phrygian Hierapolis (SEG 45, 1747; C. Zimmermann, Handwerkervereine im griechischen Osten des Imperium Romanum, 2002, 26) hence comes as something of a surprise. A Hierapolitan guild of eunuchs does not seem very likely. Presumably the term here designates a trade: perhaps ‹leather-cutters›? In what sense the τόπος in Parkalla ‹belonged to› Alexander the eunuch/leather-cutter is wholly unclear. At the end of the line, I read ζυ(γὰ) ε′κ′ε (1/5 1/25 *iuga*), rather than Poljakov's ζυ(γὰ) ε′, κ(εφαλαὶ) ε′ (1/5 *iuga*, 1/5 *capita*) on the basis that neither Fontrier nor Keil indicate an abbreviation mark on *kappa*, although usually punctilious in so doing. For the fraction 1/5 1/25 *iuga*, compare Magnesia d6, f2.

23: The Latinising form Νεικοστρατιανός is the clearest example in this text (along with the village-name Πεισωνιανά in line 36) of a property named after an earlier proprietor (Νεικόστρατος). This adjectival formation, common in the tax-registers (e.g. Magnesia b17, χω(ρίον) Ἀρτεμιδωριανόν), derives from the Latin form *fundus Antonianus*, ‹former property of Antonius›: Th. Mommsen, Die Italische Bodentheilung und die Alimentartafeln, Hermes 19, 1884, 394–398; G. M. Parassoglou, Imperial Estates in Roman Egypt, 1978, 11–13.

24: The *iugatio* is incomplete, but the two fractions missing must be large (between 1/2 and 1/8). The last two figures of the *iugatio* are ξ′γ′, i.e. 1/60 1/3000. For this combination of fractions, compare the Astypalaian census, IG XII 3, 180 line 8, for the holding Donakous (see Appendix below).

25: For the term αὐλή (= farmstead), here the former possession of a certain Hekataios, see Schuler, Ländliche Siedlungen, 1998, 59–62; elsewhere in the census-registers, perhaps IG XII 6, 980.3. Note the iotacism Ἑκατέου for Ἑκαταίου, the only example in an otherwise orthographically accurate text.

27: For the place-name Κυπαρίσσιον, cf. Kiourtzian (above, n. 5) no. 97, χορίου Κυπαρισίου (Syros, VI AD); Life of St Nicholas of Sion (ed. I. Ševčenko – N. P. Ševčenko, 1984), ch. 70, χωρίου Κυπαρίσσου; MM IV p. 321 (Latros, AD 1195), προαστείῳ τῷ ἐπονομαζομένῳ τὸ Κυππαρίσιον.

28: καλυβία, ‹cottages›: e.g. P. Oxy. 2197.34, κτῆμα Καλύβης; I. Kaunos 33.14, with BE 1956, 274b.

29: The *capitatio* is unclear; Fontrier's facsimile has *epsilon*, Pappakonstantinou's *eta*; the numeral appears to have been on the very edge of the stone (as on Keil's facsimile), and it is impossible to tell whether it had a fractional mark. For the fraction 1/70, see below, n. 144.

31: Αλκιζω κώμη: compare perhaps the bishopric of Ἄλγιζα in western Asia Minor (location uncertain), attested only in later lists of the Notitiae Episcopatuum (7.153, 10.29, 13.50): L. Zgusta, Kleinasiatische Ortsnamen, 1984, 59.

36: It is conceivable that the village Πεισωνιανά or Πεισωνιανοί is to be connected with P. Lucilius Pisonianus, who owned a *familia* of gladiators at Tralles at an unknown date (I. Trall. 100).

37: Κλαστανους. The word is unattested, and its morphology uncertain (κλαστάνους gen., κλαστανοῦς nom.). The name presumably has to do with vine-dressing (κλάω, κλαστάζω, ἡ κλάσις τῶν ἀμπέλων etc.). A κλαστήρ is a vine-dresser in CPR 10.56 (V AD).

41: A Mylasan Λευκὴ κώμη: I. Mylasa 211.9, with commentary. Since χάρακι has the article τῷ, it is unlikely to be a proper name (‹Charax›). It is unclear whether we should take it to mean ‹fence›, as in BGU III 830.5–6, συμβαλὼν χάρ[ακα] περὶ τοῦ ἐ[λαιῶν]ος, or ‹fort, palisade›, as in I. Ephesos 2001; Coll. Froehner 73; P. Köln 186.3 (see L. Robert, OMS VI 649 n.12; Schuler, Ländliche Siedlungen, 1998, 126). I do not understand the abbreviation (Μ Πο) which follows. πο() is a standard abbreviation for πό(λις), found in the tax-register of Magnesia in exactly this form (d14: *pace* Kern, a small *omicron* is clearly visible above the *pi* on the squeeze in Berlin), and normal on Diocletianic milestones (e.g. TAM V 2, 873–6; cf. SEG 44, 909.10), but it is hard to see what it could mean here. It is conceivable that we could have e.g. τῷ χάρακι Μ(αγνήτων) πό(λεως), but the sense is unsatisfactory (‹the fort of the city of Magnesia›?).

48: For the toponym Βουνός/Βουνοί (apparently interchangeable here?) cf. M. Drew-Bear, Le Nome Hermopolite: toponymes et sites, 1979, 82–83.

49: Σύμβολος. For the toponym, cf. the Life of St Nicholas of Sion (ed. I. Ševčenko – N. P. Ševčenko, 1984), ch.57.

51: The sum total for the *iugatio* given here (17 $^{1}/_{3}$ $^{1}/_{80}$ *iuga*) differs significantly from the actual total of the listed *iugationes* (17 $^{1}/_{15}$ *iuga*). The totals can be brought closer together if we hypothesise a mason's error in line 50: reading ζυ(γὰ) ς γ′ for ζυ(γὰ) ς κ′ would give us an actual total of 17 $^{1}/_{3}$ $^{1}/_{60}$ *iuga* for the listed figures.

53: Λύγος = *agnus castus*; cf. Magnesia e12, χω(ρίον) Βούκοπρον ἐν χω(ρίῳ) Λυγωνίῳ, and L. Robert, OMS VII 38–41.

Toponymy

The tax-register includes several non-Greek place names: Κοζανατα, Συανα, Μονναρα, Τραρα, Παρκαλλα, Αραρα, Κολεα (?), Ορδομου κῆποι, Ορβηλα, Αλκιζω κώμη. There is no reason to doubt that the majority of these are relics of the indigenous Carian toponymy of the region.[32] Literary sources are clear that Tralles was a Carian settlement.[33] The city's name is certainly Carian; in the fourth century, it shows a char-

[32] All are subject to Greek declination as if neuter plurals (Μονναρα-Μονναροις, ἀγρ(ὸς) Αραρα ἐν κώ(μῃ) Αραροις). Compare the inconsistencies in the Mnesimachos lease (IV-III BC) from the plain of Sardis: Sardis VII, no.1, Col. I 6, κλῆρος ἐν Κιναροα πλησίον Τοβαλμουρα; Col. I 14, ἐν Τβαλμουροις αὐλήν.

[33] Tralles is Carian for Xenophon (Hell. 3.2.19, Τραλλεῖς τῆς Καρίας) and Diodoros (19.75.5–6). There is little evidence (despite Stephanos, s.v. Τράλλεις) for a Lydian element. The coin legend ΖΕΥΣ ΛΥΔΙΟΣ (Lindgren Coll. As. Min., A839A), is of little significance: the same type is found at Carian Kidrama (L. and J. Robert, La Carie II: Le plateau de Tabai et ses environs, 1954, 356).

acteristically Carian fluctuation between Τράλλεις and Τράλδεις.[34] The city has furnished two Carian-language inscriptions, probably also of the fourth century,[35] and the two earliest attested Trallians both have Carian names: Paos son of Pythes and Hyssaldomos son of Paos.[36]

Strabo preserves a tradition according to which Tralles was a joint Argive and Thracian foundation. The historical basis of this is very dubious, and it has rightly been rejected as legend based on a chance homonymy.[37] However, we have a Trallian *theoros* at Samothrace in the first century BC with an unambiguously Thracian name, Ἀμάτοκος Δημητρίου.[38] Furthermore, in our tax-register, the toponym Ορβηλα (II 30) has no Anatolian parallels, and looks clearly Thracian; compare the Thracian toponym Ὄρβηλος, τὸ Ὄρβηλον ὄρος.[39] The toponym Τραρα (II 19) also recalls the Thracian tribe Τρῆρες/Τρᾶρες, said by Strabo to have been responsible for the destruction of Magnesia on the Maeander during one of the semi-mythical Thracian-Cimmerian raids in Asia Minor.[40] None of this necessarily weakens the argument that the Thracian origins of Tralles were purely mythological. Rather, the legendary origins of Tralles had a direct influence on personal names and toponymy at Tralles in the Hellenistic and Roman Imperial periods: farmers named their farms after Thracian tribes and mountains, and a father could give his son the old Odrysian royal name Ἀμάτοκος.

The place name Ορδομου κῆποι is more difficult. Evidently this derives from a personal name Ορδομου (gen.): ‹the gardens of Ordomos/-as›. Names from the root Ορδ- are concentrated in Pisidia,[41] Pamphylia,[42] and Lycia;[43] stray cases also appear at

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[34] For the spelling Τράλδεις in I. Trall. 3.4–5, see now R. Dinç – G. Meyer, Mélanges de cultures et de populations à Tralles d'après deux nouvelles inscriptions, MediterrAnt 7/1, 2004, 294, 300. In Lycian B, the dative or locative of the place-name seems to have been *Tralije* and/or *Trelewñne*: H. Craig Melchart, A Dictionary of the Lycian Language, 2004, 131.

[35] L. Deroy, Les inscriptions cariennes de Carie, AntClass 24, 1955, 307–309, nos.1–2, with Dinç – Meyer (above, n. 34) 297: personal names Paos (twice), Artemon and Artemis.

[36] Παος Πυθέω Τραλλεύς: SEG 47, 1632 (V/IV BC). The patronym is Ionian. Υσσαλδωμος Παου: Dinç – Meyer (above, n. 34) 289–305 (early IV BC). The Carian name Ἑκατόμνως is found at I. Trall. 191.6. The names Σεικιλος (I. Trall. 219) and Κοιβιλος (I. Trall. 77) lack parallels, and may be misreadings.

[37] Strabo 14.1.42: κτίσμα δέ φασιν εἶναι τὰς Τράλλεις Ἀργείων καί τινων Θρᾳκῶν Τραλλίων, ἀφ' ὧν τὸ ὄνομα. See L. Zgusta, Kleinasiatische Ortsnamen, 1984, 630–632; dismissed without argument by Dinç – Meyer (above, n. 34) 299–300.

[38] IG XII 8, 190.

[39] E. Oberhummer, RE Suppl. VIII, 1956, 372–373; D. Detschew, Die thrakischen Sprachreste, ²1976, 343–344.

[40] Strabo 14.1.40; Detschew (above, n. 39) 521–522.

[41] Ορδου (gen.), at Termessos: TAM III 1, 414; Ορδος (?) at Selge: L. Robert, Noms indigènes dans l'Asie Mineure gréco-romaine, 1963, 431–432; cf. Ουρδιου (gen.) at Termessos: TAM III 1, 325.

[42] Ορδοῦτος (gen.) at Aspendos: SEG 46, 1693.

[43] Ορδηλις (nom.) at Balboura: SEG 40, 1268 A18; Ορδανις (nom.) at Myra: E. Petersen – F. von Luschan, Reisen in Lykien, Milyas und Kibyratis, 1889, no. 51.

Kyme and Pergamon.[44] This element is also found, however, in Iranian onomastics: a certain Ορδανης (compare the name Ορδανις at Myra) is mentioned by Arrian as an Iranian noble who had revolted in Drangiana or Arachosia during Alexander's absence in India.[45] Given the geographical isolation of our Trallian Ορδομου from the Lycian-Pisidian onomastic group, it is conceivable that it is of Persian origin. There seem to be other traces of Iranian onomastics at Tralles.[46] Place-names of the type Ορδομου κῆποι, survivals from the period of Achaemenid rule in Western Asia Minor, are not uncommon: compare for example Pharnakou Chorion, in the territory of Aphrodisias, or Dareiou Kome, in the upper Hermos valley.[47]

The toponymy of the tax-register cannot be used to argue for the survival of an indigenous population in the Trallian countryside; place-names have a long life-span.[48] Nonetheless, the landscape does bear the clear imprint of a Carian past. This stands, at first sight, in stark contrast with the Magnesian tax-register, where only one of around fifty toponyms could plausibly be considered to be indigenous.[49] However, the contrast is only apparent. Numerous villages on Magnesian territory known from other sources carried non-Greek names: Καδυιη, Ταβαρνις, Ωλασηα, Αττουκλεις.[50] The Magnesian countryside thus conforms to a pattern seen in late Roman Egypt and Syria, in which indigenous toponymy survives in the names of villages, while individual holdings and estates (including hamlets forming part of estates) usually carry Greek or Roman names, tending as they do to be named after individual proprietors.[51]

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[44] Ορδεος (gen.): I. Kyme 31, with BE 1976, 583; Ορδοβετου (gen.): Robert (above, n. 41) 432.

[45] Arrian 6.27.3; cf. Curtius 9.10.19 (*Ozines*). For the name, F. Justi, Iranisches Namenbuch, 1895, 351–353.

[46] The only clear example is the name Mandane in I. Trall. 53. The names Mithradates (SEG 46, 1434, II BC; I. Trall. 76), Pharnakes (I. Trall. 247) and Mitra (I. Trall. 180.3) need not indicate an Iranian residue (N. V. Sekunda, in: H. Sancisi-Weerdenburg – A. Kuhrt [eds.], Achaemenid History VI, 1991, 85–86, 101–102); Dinç – Meyer (above, n. 34) 312 n. 136, are over-enthusiastic.

[47] CIG II 2827.16 (where we should certainly read Φαρ⟨ν⟩άκου χωρίῳ); TAM V 2, 1335, with N. V. Sekunda, REA 87/1, 1985, 22.

[48] This point is not understood by Chr. Chandezon, in: F. Prost (ed.), L'Orient méditerranéen de la mort d'Alexandre aux campagnes de Pompée, 2003, 206.

[49] Magnesia d3, ἀγρ(ίδι)ον Βαβειν. Also perhaps g1, [σ]ύνκτησις ἡ περὶ Διδασσας. The peculiar-looking personal name Ζωείου(ς) Σαρου in Magnesia f2 is a simple misreading: I read from the squeeze Ζωσίμου Γαίου.

[50] I. Magnesia 113.24; I. Magnesia 215a40, 251; I. Magnesia 116.37; SEG 32, 1149; etc. For the village names Αττουκλεις and Μανδραγορεις in SEG 32, 1149, see P. Thonemann, Neilomandros, Chiron 36, 2006, 35. Note also the Carian name Μοκολδης at Magnesia (SEG 45, 1595); cf. the Carian ethnic Μοκολδεύς at Apollonia Salbake, L. and J. Robert (above, n. 33) no. 162.11.

[51] D. Feissel, Noms de villages de Syrie du Nord. Élements grecs et sémitiques, in: O Ελληνισμός στην Ανατολή, 1991, 300–301.

Terminology

The normal term in the Diocletianic tax-registers for an individual plot of tax-assessable land is χω(ρίον).[52] At Thera and Astypalaia, all the registered properties are designated as χωρία. At Chios, Mytilene, Samos and Cos, both χωρία and κῆποι or κηπία (‹market gardens›) are found; Chios also provides one example of an ἄρουρ(α), Samos an instance of a περίβολος (‹enclosure›) and Mytilene one example of a τόπιον.[53] At Magnesia, χωρία predominate, with a few instances of τόποι, ἀγροί and/or ἀγρίδια. There is no obvious distinction between τόποι/ἀγροί and χωρία at Magnesia, and I take the terms to be broadly synonymous.[54]

At Tralles, by contrast, an individual plot is generally an ἀγρ(ός). It seems clear that ἀγρ(ός) here refers to the same thing described in the other tax-registers as a χω(ρίον), namely a single plot of agricultural land.[55] At Tralles we also find, as at Magnesia, three plots of land designated as τόπος (without abbreviation), and a plot described as τοπάρια. Of the two τόποι for which the *iugatio* is preserved, one is small (Col. II 21: $^{1}/_{5}$ $^{1}/_{25}$ *iuga*), the other very small (Col. II 43: $^{1}/_{80}$ *iuga*), suggesting that at Tralles (unlike Magnesia) the term τόπος was reserved for a plot smaller than an ἀγρ(ός).[56] None of this is particularly problematic. It is a little surprising to find this degree of terminological variation between neighbouring cities (Tralles and Magnesia) in contem-

[52] The abbreviated form χωρ(ίον) is already found in a document from Hadrianic Athens, apparently a register of rent payments of 8 % on plots of civic land on perpetual lease: S. G. Miller, A Roman Monument in the Athenian Agora, Hesperia 41, 1972, 50–95. Numerous different abbreviations of the term are found in papyri of the sixth and seventh centuries.

[53] κῆποι were located in the immediate vicinity of urban centres, supplying them with fresh fruit and vegetables. Note IG XII 6, 980.6, κῆπος ἐν τῇ πόλι; the same phrase is found at Chios (Déléage [above, n. 2] 185). For the restoration ἄρουρ(α) (‹arable field›) rather than ἀρούρ(ιον), see Elliott (above, n. 2) 90. περίβολος: IG XII 6, 980.4. τόπιον: IG XII 2, 78 b1.

[54] Magnesia a9 and d3 (ἀγρόν = ἀγρ(ίδι)ον?); a12 and d13 (ἀγρ() = ἀγρ(ός)?); e7 and e15 (τό(πος)). At Cos, we have a χω(ρίον) Ἀγρίδιον and a χω(ρίον) Μεγάλου Ἀγροῦ (Herzog, no. 14, lines 3 and 6).

[55] ἀγρός may perhaps be used in this semi-technical sense in a prefectorial ordinance of AD 480 concerning the collection of the *annona* in Caria: SEG 44, 909.10–11, τοὺς οἰκοῦντας τὰς πό(λεις) κὲ τοὺς ἐν ἀγροῖς ὄντας [ἢ κ]ώμες.

[56] For the term τόπος as designating an element of a rural estate in the late Roman period, compare D. Feissel, Notes d'épigraphie chrétienne (VIII), BCH 116, 1992, 404–407 (SEG 42, 1363), a τόπος on the territory of Seleucea Pieria belonging to the future emperor Justinian (AD 521–527). The term is vague: Chr. Schuler, Ländliche Siedlungen und Gemeinden im hellenistischen und römischen Kleinasien, 1998, 81–83. At Magnesia τόπος was used of quite a large property (e7, τό(πος) Βωμοὶ πρὸς Κρόκῃ, $2\ ^{1}/_{2}\ ^{1}/_{4}\ ^{1}/_{20}$ *iuga*), and a large farm at Samos had the name χω(ρίον) Φλοὸς τό(πο)ς (IG XII 6, 980.6, $3\ ^{1}/_{3}\ ^{1}/_{50}\ ^{1}/_{600}$ *iuga*). However, the smallest property in the Thera land-register, 6 *iugera* of arable, had the name χω(ρίον) Τοπάριον.

porary documents of the same type; similar variation can, however, be found in estate-registers from different regions in Late Antique Egypt.[57]

More difficult is the use of the term χω(ρίον) at Tralles. The case of χω(ρίον) Μονναρα is instructive: 7 $^{1}/_{2}$ *capita* of slaves and livestock are registered as being housed at Monnara in II 15–16, with a further 15 $^{1}/_{2}$ *capita* registered in II 22, all concentrated on a little less than one *iugum* of agricultural land. It seems clear that χωρίον here refers to a nucleated settlement, a village or hamlet.[58] The Tralles tax-register is one of the earliest texts to employ χωρίον in this sense.[59] In the Hellenistic period, χωρίον seems usually to have denoted a ‹fortified place›. The sense ‹plot of land›, and more specifically ‹fiscal unit of agricultural exploitation›, is dominant in epigraphical texts of the Roman imperial period, and continues to be found in legal texts as late as the tenth century AD.[60] In the popular language, however, the turning point appears to have been the fourth century AD. In the Life of St Theodotos of Ancyra, dating to the mid-fourth century, the village of Malos near Ancyra, still described in an inscription of the mid-third century as a κώμη, is consistently described as a χωρίον.[61] We begin regularly to find χωρίου in the genitive to signify village of origin in the late fourth century.[62] In the acts of the council of Ephesus in 431, the origins of four signatories are given with reference to villages on the territory of Philadelphia, with κώμη and χωρίον apparently used interchangeably: Ζήνων χωρίου Σαγαρίου Πυθᾶ, Εὐτύχιος χωρίου Αὔλακος, Διομήδης οἰκῶν ἐν κώμῃ Κάκκαβα, Πατρίκιος δευτερόπρεσβυς κώμης Παραδιοξύλου.[63] By the sixth century, χωρίον has overtaken κώμη as the standard term for village in both epigraphic and hagiographic sources.[64]

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[57] At Oxyrhynchus, χωρίον was generally used of estate vineyards, while ἐποίκιον was used of estate settlements; in the Hermopolite nome, the usual term for an estate settlement was χωρίον (J. Banaji, Agrarian Change in Late Antiquity, 2001, 175; Sarris [above, n. 23] 91).

[58] Rightly assumed by Jones (above, n. 2) 54.

[59] The village of Ἀτυοχωρίον (ethnic Ἀτυοχωρείτης) at Akkent, near the sanctuary of Apollo Lairbenos in southern Phrygia, is first securely attested in AD 169 (T. Ritti, Documenti epigrafici dalla regione di Hierapolis, EA 34, 2002, 66–69: SEG 52, 1333); an unpublished inscription at Çivril, also of the second century, shows that the village was also known as Ἀττακώμη.

[60] χωρίον in the Hellenistic and Roman periods: Schuler (above, n. 56) 49–53; in the Byzantine period: M. Kaplan, Les hommes et la terre à Byzance du VI^{e} au XI^{e} siècle, 1992, 95–101. The argument of W. Brandes and J. Haldon, Towns, Tax and Transformation, in: G. P. Brogiolo et al. (eds.), Towns and their Territories between Late Antiquity and the Early Middle Ages, 2000, 149–150, that the changing terminology reflects an ironing-out of the juridical differences between free κῶμαι and dependent χωρία, is too simplistic.

[61] S. Mitchell, The Life of Saint Theodotus of Ancyra, AS 32, 1992, 95–96.

[62] The earliest datable example I can locate is ICUR 4271 (AD 392), Ἀλέξανδρος υεἱὸς Ἀμβροσίου χωρίω Μικρᾶς Κώμης. Late fourth and fifth-century examples are numerous in eastern Phrygia and Galatia: e.g. IGCVO 400; MAMA VII 589; MAMA I 188, 339; ICUR 5669, 5676; etc.

[63] D. Feissel, Tyche 11, 1996, 108 n. 12; F. Millar, Repentant Heretics in Fifth-century Lydia: Identity and Literacy, SCI 23, 2004, 123–128.

[64] In the late sixth-century Life of St Symeon the Stylite, the term χωρίον is all but universal for village: Feissel (above, n. 51) 288–294. For sixth-century epigraphy, see e.g. Feissel, In-

Three holdings are designated as being ‹of› a particular χω(ρίον) (II 35, 49–50). This ought to mean that the holdings are ‹part of› or in some sense ‹dependent on› the χωρίον (compare the use of συνκτή(σεως) in II 19–20). Indeed, this form of registration recalls the western *forma censualis*, according to which each *fundus* is to be registered along with the *pagus* and *ciuitas* in which it is located: ἀγρ(ὸς) Ἱππικὴ καὶ Σύμβολος χω(ρίου) Βουνῶν would correspond to a Latin *fundus Hippica et Symbolus pagi Bunorum* (sc. *finibus Tralliensium*).[65] But the indication of the location of holdings in relation to villages is sporadic and inconsistent: apart from the genitive χω(ρίου), we also find ἐν κώ(μῃ) (II 24, 38, cf. 21), πρὸς κώ(μῃ) (II 29, cf. 12, 41), and, most commonly, no indication at all.[66] We appear to have a haphazard attempt to describe the Trallian countryside in terms of a form of settlement hierarchy (*fundus* and *pagus*) which was by no means universal in western Asia Minor.

I see no reason to suppose that a Trallian κώμη is an essentially different kind of habitat from a Trallian χωρίον. However, there is a clear distinction in the usage of the two terms. κώμη never appears in a technical sense, defining a property for tax-purposes; nowhere do we find a κώμη *qua* κώμη assessed for *iugatio* and *capitatio*. In a case such as II 31, ἀγρ(ὸς) Αλκιζω κώ(μη), the term κώμη is simply a fossilised part of the place-name. Similarly, in later periods, once the standard term for a village was χωρίον, one often finds villages described as ‹χωρίον of Gordiou κώμη› and suchlike.[67] Presumably here we are dealing with small hamlets or former villages (the *capitatio* of the ἀγρός Alkizo Kome is only half that of the χωρίον Monnara), possessed in their entirety by large landowners and hence definable as ἀγροί rather than χωρία.

These cases should be carefully distinguished from those where we find the same toponym being used of both ἀγροί and κῶμαι. So we have a κώ(μη) Ορδομου κῆπ(οι) in Col. II 29 and 38, and an ἀγρ(ὸς) Ορδομου κῆπ(οι) in Col. II 39; similarly, in Col. II 24 we find an ἀγρ(ὸς) Αραρα ἐν κώ(μῃ) Αραροις. This phenomenon is well attested in late antique and early Byzantine Egypt, where we frequently find estates

scriptions grecques en Vénétie, Aquileia Nostra 47, 1976, 155–172; id., BCH 118, 1994, 277–283. The development of the usage χωρίον = village between the fourth and sixth centuries is intimately bound up with the decline of the *ethnikon*, a problem I hope to study in detail elsewhere.

[65] Ulp., Dig. 50.15.4: *forma censuali cauetur, ut agri sic in censum referantur, nomen fundi cuiusque et in qua ciuitate et in quo pago sit et quos duos uicinos proximos habeat.* See M. Tarpin, Vici et pagi dans l'occident romain, 2002, 192–211. The *fundi* of the Volcei tax-register of AD 323 are listed by *pagus*: InscrIt III.1, 17.

[66] There are a few parallels in the other tax-registers. At Mytilene, a κηπίον πρὸς τῇ οἰκίᾳ Ἀθηναδιον (?), and a κηπίον πρὸς τῇ πεδιάδι (IG XII 2, 78 b5–6); at Magnesia, a [χω(ρίον) Ἀρ]τέμιδος πρὸς συνορ(ίοις) μονοπύργου Ἡρακλίτου (a3); χω(ρίον) Ἀπολλωνάρειον πρὸς χω(ρίῳ) Ἀθηναγόρα (b5); πρὸς Ἑκαδίοις (d4); πρὸς τ(ῇ) παλαιᾷ πό(λει) (d14); πρὸς Κρόκῃ (d7); ἐν χω(ρίῳ) Λυγωνίῳ (e12).

[67] See e. g. n. 62 above. Later Byzantine examples are collected by Kaplan (above, n. 60) 99–100. His identification of the Gordiou Kome of Peira 23.3 with the bishopric of Juliopolis is unacceptable. Gordiou Komai are numerous in inland Anatolia: Schuler (above, n. 56) 292.

(οὐσίαι) or estate-settlements (ἐποίκια) carrying the same name as larger villages (κῶμαι) in the vicinity, without it necessarily being the case that the given estates actually *included* the village.[68] Likewise in the Tralles tax-register, although Kritias owned a holding (ἀγρός) called Ορδομου κῆποι and another holding (Εὔκαρπος) in the village of Ορδομου κῆποι, the village itself seems to have been independent; the ἀγρ(ὸς) Ορδομου κῆποι merely takes its name from the nearest large settlement.

Decurial declarations

The three decurial declarations take a standardised form. Each is headed with the individual's name, ethnic, and status: ‹Tatianos of Tralles, decurion›. The use of the ethnic Τραλλιανός is striking. There is not the least doubt that the inscription derives from the city of Tralles. It is true that in the Roman imperial period, in contrast with earlier periods, the ethnic is frequently used within one's own city.[69] Here, however, the ethnic seems to have a particular force, since it is only the decurions who are described as ‹Trallians›, though there is no real reason to doubt that the other landowners (Fulvius the priest, Zotikos, Pausanias) are also citizens of Tralles.[70] It seems likely that the ethnic is to be taken closely with βουλευτής in the sense ‹decurion of the Trallian *curia*›.[71] Two of the three entries then begin, immediately after the name of the declarant, with a small number of animals, listed without a place of residence: Tatianos declares $^1/_4$ $^1/_{16}$ *capita*, Kritias $^1/_8$ *capita*, and the non-decurial Pausanias $^1/_6$ $^1/_{48}$ *capita*. Interestingly, Kritias' $^1/_8$ *capita* are explictly indicated as only pertaining to a single animal: ζώου κ(εφαλὴ) η΄. It seems possible that we are dealing with the landowners' private animals, their horses and dogs, which would move around as their owner did.[72]

This entry is followed by separate enumerations of groups of animals and slaves located in particular *choria* or *agroi*: ‹in the *chorion* Daphne, 3 $^1/_2$ $^1/_{20}$ $^1/_{150}$ *capita* of slaves and animals›. It is unclear why these groups of slaves and animals are listed separately.

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[68] Banaji (above, n. 57) 174–176: e.g. SB VI 9583 (VII AD) fr.3, 7–8 (χωρ(ίον) Κερκήσε(ως) and ἐποίκ(ιον) Κερκ(ήσεως)), 15 & 17 (χωρ(ίον) Θεαξ(ενίδος) κώμ(ης) and χωρ(ίον) Θεαξενί(δος) οὐσίας).

[69] E.g. BE 1974, 458; T. Drew-Bear, Nouvelles inscriptions de Phrygie, 1978, 105.

[70] In the Magnesian tax-register, only citizens of neighbouring cities are distinguished with the ethnic: b7–8, 14, 16, c3, d3, g1 (Τραλλ(ιανοί)), d4, 8, 11, e13, 15, f9, h2 (Ἐφ(έσιοι)), h5 (Κολοφ(ώνιος)).

[71] Cf. e.g. I. Ephesos 3828: Αὐρ. Σωκράτους τοῦ καὶ Εὐφρονίου Ὑπαιπηνοῦ βουλ(ευτοῦ); I. Thr. Aeg. 396: Αὐρ. Κρονίων … βουλ(ευτὴς) Μαρωνείτης; MAMA III 262: Αὐρ. Εὐσανβατίου Μενάνδρου Κωρυκιώτου βουλευτοῦ; F. A. Pennacchietti, Nuove iscrizioni di Hierapolis Frigia, AAT 101, 1966–7, 298–299 nos. 8–9: M. Αὐρ. Διοδώρου β΄ Ἱεραπολείτου βουλευτοῦ; V. Scheibelreiter, Stifterinschriften auf Mosaiken Westkleinasiens, 2006, Nr. 8 (Sardis): Αὐρ. Ἀλέξ[αν]δρος ὁ κα[ὶ Ἀν]ατόλιο[ς Σα]ρδ(ιανὸς) βουλ(ευτής).

[72] Jones (above, n. 2) 51 n. 21. Note the single horse registered in the Mytilene register at IG XII 2, 76e7.

It is probably significant that no *paroikoi* are listed in these groups, since from the outset *paroikoi* were tied to particular properties; slaves appear not to have been so tied until 371. We may assume that all registered Trallian *paroikoi* were included in the *capitationes* of particular land-holdings.[73] In some cases, the *chorion* or *agros* on which these ‹untied› groups are registered was not owned by the relevant proprietor: so the *chorion* Paradeisos, where Tatianos registered 4 $^{1}/_{4}$ $^{1}/_{20}$ $^{1}/_{100}$ *capita* of slaves and animals, did not belong to Tatianos, but lay in the close vicinity of two of his holdings, Trara and Trallikon.[74] In such cases, presumably the proprietor chose to stable his livestock and slaves in the nearest village rather than on the property itself. More difficult are cases where the relevant *chorion* or *agros* is actually owned by the proprietor concerned. So Tatianos stabled 3 $^{1}/_{2}$ $^{1}/_{6}$ $^{1}/_{45}$ *capita* of slaves and livestock at the *chorion* Monnara (II 15); a further 3 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{50}$ *capita* of livestock alone (II 16); and registered a further 15 $^{1}/_{2}$ $^{1}/_{30}$ $^{1}/_{40}$ *capita* as directly attached to the *chorion* (II 22).[75] Why he did not simply register 23 $^{1}/_{8}$ $^{1}/_{30}$ $^{1}/_{45}$ $^{1}/_{50}$ as the *capitatio* for Monnara is unclear. It is possible that the two separately-registered groups of ‹untied› slaves and livestock did not pertain specifically to Monnara, but were a mobile workforce and herd, employed at a number of farms in the vicinity; the *capitatio* attached specifically to Monnara (II 22) would represent his *paroikoi*, and the animals and slaves permanently installed there.[76] But this is no more than speculation.

At the end of each individual's declaration on the Trallian register, we have a sum-total for that individual's tax-liability in *iuga.* It is hard to see why the Trallian *tabularius* chose only to add up the *iugationes*, since this sum would have represented only a part of each individual's tax-liability; at Astypalaia and Thera, more rationally, the *capitationes* and *iugationes* were added together to give total figures in κεφαλόζυγα.[77] Probably we are simply dealing with a quirk of local accounting. The Trallian *curia* may have thought that the *iugatio* would be less subject to change than the *capitatio*. It is true that *capitatio* and *iugatio* could be treated as separate taxes: so in AD 393 the Thracian diocese was relieved of its *capitatio* in its entirety, while continuing to be assessed on its *iugatio* as usual.[78] Similarly it is possible – though nothing could be more

[73] CJ 11.48.7; Jones (above, n. 2) 51. In one of the fragments of the Chian tax-register, the *capitatio* is broken down into slaves, livestock, and *paroikoi*.

[74] Col. II 17, cf. 19–20; similarly the *chorion* Daphne, II 46, cf. 47.

[75] No less striking is the case of the farm Ορδομου κῆποι. Kritias made a separate entry for 2 *capita* of slaves and livestock located at Ordomou Kepoi (II 34); in the entry for the farm itself (II 39), which is quite substantial (more than 3 *iuga*) there is no registered *capitatio* at all.

[76] Jones' attempt ([above, n. 2] 57; [above, n.12] 793) to extrapolate the proportion of slave to free labour at Tralles is misguided; we have no way of knowing how many slaves or animals were also included in the *capitationes* attached to particular farms.

[77] U. Hildesheim, Personalaspekte der frühbyzantinischen Steuerordnung, 1988, 140–141.

[78] *per uniuersam dioecesim Thraciarum sublato in perpetuum humanae capitationis censu iugatio tantum terrena soluatur* (CJ 11.52.1).

controversial – that Oriens and Egypt were, at least in some periods, subject only to the *iugatio terrena*.[79] But this was certainly not the case in the *dioecesis Asiana*.

‹*Enbathric*› *properties*

As we have seen, the names of a number of villages (χωρία) appear in the Tralles tax-register, both as topographical points of reference (ἀγρ(ὸς) Α χω(ρίου) Β) and as the location of groups of livestock and manpower (ἐν χω(ρίῳ) Α δούλων καὶ ζώων κ(εφαλαί)). On two occasions only, a χωρίον forms an integral part of the list of an individual's taxable properties: in Col. II 22, the χωρίον of Monnara is registered as the property of the decurion Tatianos, and in Col. II 48, the χωρίον of Bounos appears among the estates of the decurion Latron. There is, however, a difference in the tax-status of these two villages. Monnara is registered as if it were an ordinary land-holding; since it is in fact not a land-holding but a village, the *iugatio* is unusually small and the *capitatio* unusually large. Bounos, however, is listed without *iugatio* or *capitatio*, and is instead qualified with the single word ἐνβαθρ(ικόν). The term is an exceedingly rare one. In the Magnesian tax-register, the word ἐνβαθρικόν is attached to one of six holdings named Apollonareion, probably parts of a single large plot of land broken up on the owner's death.[80] As in the case of the χωρίον of Bounos, there are no figures given for the *iugatio* or *capitatio* of this plot of land; it is, however, difficult to judge the significance of this, since the single ‹enbathric› plot comes at the end of a sequence of six holdings without tax-assessment details, and there is no reason to think that any of the other five holdings are also enbathric. The only other attestation of the term known to me occurs in a funerary inscription from Cos of the late third or fourth century, which refers to a δεσπότης τοῦ ἐνβαθρικοῦ χωρίου; it is unclear whether χωρίον here has its ‹Trallian› sense of ‹hamlet, village›, or its more usual sense in this period, ‹plot of land, holding›.[81] This does not get us very far.

More helpful is the entry for the property of Zotikos in the Tralles register, Col. II 8–9. This appears to be only entry in the Tralles register where we have no sum total (introduced by ὁ(μοῦ)) for the declarant's total tax-liability. Instead, in the second and final line of the entry, we find the curious phrase ὑπὸ ἐμβαθρώνην πρόσοδον. I have tentatively accented ἐμβαθρώνην (a hapax) on the assumption that the word is a com-

[79] CTh 7.6.3, with Hildesheim (above, n. 77) 102–113.

[80] Magnesia b6: χω(ρίον) Ἀπολλωνάρειον ἐνβαθρικόν, ἐξ (ἀπογραφῆς) Τυχικοῦ, the sole example of the word cited in LSJ.

[81] W. R. Paton – E. L. Hicks, Inscriptions of Cos, 1891, no. 360: Κλαυ(δία) Εὐφρο|σύνη ἡ καλ[ῶς] | σ⟨υ⟩νοικήσ|ασα ἔτη λ | τῷ ἀγαθῷ | Γαίῳ Ποπ⟨λ⟩ί|ου τῷ δεσ|πότῃ τοῦ | ἐνβ̣αθρικο|ῦ χωρίου ἐ̣[ν]|θάδε κεῖ|⟨τ⟩αι. I tentatively restore the name Ποπ⟨λ⟩ί|ου in ll. 6–7, although it produces an odd form of name. The script (cursive *omega* and rectangular *sigma*) suggests a date in the third century or later. If Paton – Hicks are right to restore a cross in the final line, a fourth-century date would be preferable. For the title δεσπότης τοῦ χωρίου, cf. SEG 35.1272; I. Iznik 767. In neither case is it clear exactly what kind of office is being referred to.

pound from ὠνεῖσθαι of the type σιτώνης, ὑλώνης (Agora XV L8 103, 141), ἁλώνης (I. Priene 111.115), used adjectivally (though I cannot find a parallel for this) with πρόσοδος in the sense ‹revenue from the collection of embathric leases›. The sense of ὑπό, I suggest, is that the property of Zotikos ‹falls under the category of «embathronic» revenue›, and therefore, like the χωρίον of Bounos, does not need to be registered in terms of *iuga* and *capita*.

The absence of any figures for tax-liability in any of the three ‹enbathric› properties on the tax registers – the holding Apollonareion at Magnesia, the village Bounos and the estate of Zotikos at Tralles – can hardly be a coincidence. The natural conclusion is that enbathric properties were not assessable for the *annona*. That is not to say that the proprietor paid no tax or rent on them, only that any tax or rent was assessed and paid separately. It seems most likely, as we have seen, that we are dealing with lands under lease. The term ἐνβαθρικός itself does not shed much light on the status of these properties;[82] it is possible that ἐνβαθρικός is simply a synonym for ἐμφυτευτικός, a term which does not become standard for perpetual land-leases before Constantine.[83] We probably ought not to think of imperial estates, since it is very unlikely that leases from the *res priuata* would have been recorded on a tax-register of this kind.[84] In the later fourth century, the lands on the territory of Caesarea in Cappadocia were either registered on an independent tax-register (ἐλευθέρα ἀπογραφή) or were under the administration of the βασιλικὸς οἶκος.[85] In Egypt, it is true, things were different: it is abundantly clear from tax-registers both before and after the Diocletianic reform that public and private lands were combined in a single register, although of course taxed at different rates.[86] But there is no evidence for anything of this kind in the Asianic tax-registers.

It is, I suggest, more likely that the ‹enbathric› villages and land-holdings of the Magnesian and Trallian tax-registers are civic or curial lands under emphyteutic lease

[82] In the Marcian Treatise (tenth or early twelfth century), the term ῥίζα χωρίου is used of the total tax liability of a village: F. Dölger, Beiträge zur Geschichte der byzantinischen Finanzverwaltung, 1927, 114 ll. 22–23). The terms βάθρον (‹base›) and ῥίζα (‹root›) are, if not synonymous, clearly in the same semantic group. On this parallel, ἐνβαθρικός could mean «for which the owner/lessee undertakes the entire fiscal responsibility».

[83] Jones (above, n. 12) I 417–420; A. D. Rizakis, L'emphytéose sous l'empire en pays grec, in: S. Follet (ed.), L'hellénisme de l'époque romaine, 2004, 56–57. There is a reference to the *ius* ἐμφυτευτικόν by Ulpian, but it is unclear whether he is referring to the institution known in later periods: I. Avotins, Glotta 60, 1982, 256–257.

[84] In SEG 44, 909 (AD 480) it is not necessary to suppose that the abuses of the local *curia* directly affected the land owned by the *res priuata*, only the condition of the imperial tenants, some of whom no doubt possessed private lands of their own.

[85] Basil, Ep. 104; cf. NJ 30.1. See J. Frösen et al., The Petra Papyri I, 2002, 76.

[86] Jones (above, n. 2) 58–64; J. Rowlandson, Landowners and Tenants in Roman Egypt, 1996, 32–48, 63–69. The second-century tax-registers from the Judaean desert are ambiguous on this point: H. M. Cotton, Land Tenure in the Documents from the Nabataean Kingdom and the Roman Province of Arabia, ZPE 119, 1997, 255–265.

to the relevant landowners.[87] Much of the private estate of the decurion Latron is concentrated around the enbathric village of Bounos, suggesting that the leases were perpetual and hereditary (*locatio perpetua*): Latron's ancestors concentrated their purchases around the village on which they possessed the perpetual leasehold.[88] It is true that it was strictly illegal for civic lands to be leased to decurions.[89] In fact this law was a dead letter, since civic land could quite legally be leased to decurions as *possessiones agonotheticae*, in order to assist them in the performance of liturgies. In the mid-fourth century, Libanius can say that «you decurions farm practically all the city's estates (τοὺς ἀγροὺς τῆς πόλεως, i.e. of Antioch), thus ensuring that the revenues (πρόσοδος) are forthcoming in their entirety … some of these estates are large, others quite small, and the large ones are assigned to the decurions according to an entirely just and proper convention, the smaller ones to other people, not liable for liturgies.» The implication is that the lease of civic lands to decurions in the form of liturgical compensation was not only possible, but the norm.[90]

This would explain why these particular properties were not (to all appearances) assessable for the *annona*: rents would be payable to the city or *curia*, who would take on the tax-responsibility for these plots.[91] I assume that the system of tax-declarations at Tralles and Magnesia asked landowners to declare all their estates, including those under lease, although the final tax-assessment would only apply to their privately-owned plots. If this hypothesis is correct, it is notable that so little civic land was on lease to Magnesian and Trallian landowners. But there is other evidence to suggest that civic holdings in western Asia Minor were not hugely extensive.[92] In AD 371/2, the total *iugatio* of all civic lands in the province of Asia amounted to only 6,736 $^1/_2$ *opima atque idonea iuga*, with a further 703 *defecta ac sterilia iuga* – not much greater than

[87] For perpetual leases of civic land in the fourth century, see A. Chastagnol, La législation sur les biens des villes au IV^e siècle à la lumière d'une inscription d'Éphèse, in: Atti dell'Accademia romanistica Costantiniana VI, 1986, 77–104; R. Delmaire, Largesses sacrées et res privata, 1989, 645–668. For earlier instances, J.-L. Ferrary – D. Rousset, Un lotissement de terres à Delphes au II^e siècle après J.-C., BCH 122, 1998, 277–342; Rizakis (above, n. 83) 55–76.

[88] Decurial status was effectively hereditary by this point: F. Quass, Die Honoratiorenschicht in den Städten des griechischen Ostens, 1993, 389–390.

[89] Pap. Dig. 50.2.6; Ulp. Dig. 50.8.2; CTh 10.3.2.

[90] Lib. Or. 31.16–17; cf. Julian, Misopogon 370D-371A. I follow the interpretation of Delmaire (above, n. 87) 646–647, in preference to the complex explanation offered by P. Petit, Libanius et la vie municipale à Antioche, 1955, 97–103.

[91] On this hypothesis, the preserved registers would only include tax-assessments for privately-owned land. Public land would then be assessed separately, and the taxes due on it would be paid directly by the *curia* out of their rental income. (I should emphasise that there is not the least evidence for this.) An inscription from Athens of the early second century AD is a register of payments of an 8 % rent on civic lands on perpetual lease: Miller (above, n. 52).

[92] The office of ἐπιμελετὴς χωρίων δημοσίων τῆς πόλεως is attested at Laodikeia on the Lykos and Colossae: I. Laodikeia 47; IGR IV 870. In MAMA V 219, we find an entire village near Nakoleia under lease to an individual (μισθωτὴς τῆς κώμης), but it is not clear whether this village was civic or imperial property.

the total *iugatio* of a single small city such as Magnesia, which, as we shall see, probably totalled somewhere between four and five thousand *iuga*.[93] A Trallian decurion must have been considerably less well cushioned from liturgical expenditure than a decurion at Antioch.

One further peculiarity in Latron's declaration ought to be noted. In large estates, it seems to have been usual for the *capitatio* to be somewhat greater than the *iugatio*: to take the only other three estates for which the total *capitatio* and *iugatio* are known, Tatianos, the Trallian decurion, was assessed for 51.66 *iuga* and 66.35 *capita*; the priest Fulvius was assessed for 3.22 *iuga* and 4.20 *capita*; Heraklides, a relatively substantial land-owner at Astypalaia, was assessed for 10.75 *iuga* and 14.68 *capita*.[94] Latron, however, registered only 3 $^{1}/_{2}$ *capita* of slaves and animals, all of them at Daphne, for an estate of 17 $^{1}/_{3}$ *iuga*, the greater part of which was located at and around the village of Bounos. Latron's estate is very short of manpower and livestock. It seems very likely, then, that the enbathric lease on the village of Bounos included the village's population and livestock, which, on the parallel of other similar estates, would have otherwise been liable to taxation at a rate of c. 15–20 *capita*.

At any rate, the two cases of Monnara and Bounos, one owned outright, the other probably under emphyteutic lease from the city of Tralles, should be added to the small Late Antique dossier for villages in the eastern provinces possessed in their entirety by single landowners, private, civic or imperial.[95] Libanius classified villages on the territory of late fourth-century Antioch as those divided among many *despotai* and those which have only one; a concrete example of the latter is given by Theodoret, in his short life of the monk Maesymas, where he depicts a decurion of Syrian Antioch travelling out to a village of which he is ‹master› (τὸν τῆς κώμης ἐκείνης δεσπότην) to collect his annual dues in kind.[96] Similarly, in his Vita Malchi, Jerome describes how the village of Maronias, on the territory of Antioch, «after many former masters or patrons, devolved to the possession of the Bishop Evagrius».[97] In neither case is it clear whether the villages concerned were strictly private property, or whether they were held on long-term lease from the city of Antioch. Villages in imperial hands may have been more common. In the late sixth century, χωρία subject to the *res priuata* are attested on the territory of Pamphylian Attaleia and Syrian Antioch; at this date, it is most likely that the term refers to ‹villages› rather than simply ‹estates›.[98] The prob-

[93] I. Ephesos 42.14–16, with Chastagnol (above, n. 87).

[94] Tralles, Col. II 14–32; Col. II 10–13; IG XII 2, 180 (see Appendix below).

[95] Banaji (above, n. 57) 11–12, 172–173. Some possible cases in western Asia Minor from the high Imperial period are discussed by Schuler (above, n. 56) 220–221.

[96] Libanius, Or. 47.4, 11; Theodoret, Hist. Phil. 14.4. In Procopius, HA 30.18–19, a *rhetor* from Caesarea buys a coastal *kome* for 21,600 *solidi*, only to have it confiscated by Justinian; presumably the *rhetor* bought the freehold rather than a lease.

[97] Jerome, Vita Malchi ch.2: *hic [uiculus] post multos uel dominos uel patronos … ad papae Euagrii possessionem deuolutus est.* I am grateful to J. Adams for the reference.

[98] IGCAsMin 308bis; IGLS II 528, with PLRE IIIB 805–7.

lems arising from the Late Antique and early Byzantine Egyptian material cannot be explored here. It is true that we have no clear Egyptian examples of κῶμαι owned in their entirety by individuals. However, private estates were certainly organised around substantial nucleated settlements, called in some regions ἐποίκια (as in the Oxyrhynchite) in others χωρία (as in the Fayum).[99] It is hard to see why Egyptian villages should have enjoyed immunity from private ownership. We may simply be dealing with a terminological distinction: Egyptian villages in private ownership had one name (ἐποίκια-χωρία), independent villages another (κῶμαι).[100]

Farms and estates in the dioecesis Asiana

The estates of the Tralles tax-register, like those of Magnesia, Astypalaia, Samos and Cos, are registered in terms of artificial fiscal units (*iuga* and *capita*), rather than real assessments of land and manpower. Quantitative analysis requires us first to determine the schedule of conversion between the original land assessments and the fiscal units derived from them. The preserved *capitationes* will largely be ignored, since there is insufficient evidence to determine how many sheep, or female slaves, or adult male *paroikoi*, might make up one *caput*. Tempting though it may be to suppose that one *caput* corresponds to one adult male *paroikos*,[101] we really have no right to assume this: the *caput*, after all, was an entirely artificial unit, created for the convenience of the taxman, not the demographer (although see Appendix below).

Things are different for the *iugum*. Evidence for the Asianic schedule of conversion from land assessments into tax-units is provided by the first column of the Theran census.[102] This column records the land-assessments, in *iugera* of arable and vineyard and by the single tree for olives, for three estates on Thera, each made up of a number of separate land-holdings. It appears that the three estates had formerly all belonged to one Paregorios, upon whose death they had been divided among his heirs. Crucially, three figures in *kephalozyga* are also preserved, the first and third of which ap-

[99] A similar variation is discussed above, pp. 454–457.

[100] For the terminological distinction, see Jones (above, n. 12) III 252; Banaji (above, n. 57) 173–176. An ἐποίκιον could have upwards of 150 inhabitants (e.g. CPR X 65, VI AD); it is perverse to deny this the status of a village, simply because it is not called a κώμη.

[101] This illicit assumption unfortunately underlies much of the argument of Jones (above, n. 2).

[102] The Syro-Roman lawbook (above, n. 8) provides what purports to be the Diocletianic schedule for Syria. The problems associated with this schedule cannot be treated here; at any rate, it is easily shown on a number of different grounds to be incompatible with the epigraphical material from Asiana, and we may safely ignore it: R. MacMullen, Roman Government's Response to Crisis A.D. 235–337, 1976, 279 n. 76; Chastagnol (above, n. 87) 92–93; Hildesheim (above, n. 77) 97–116; Carrié, (above, n. 2) 47–49. Yet another schedule seems to have been in use at Petra in the sixth century AD, where 10 *iugera* of (perhaps) first-class arable land was equivalent to one *iugum*: J. Frösen et al. (above, n. 85) 101–104, with the comments of L. Koenen, Akten des 23. Internationalen Papyrologen-Kongresses, 2007, 12–13.

pear to represent the total *iugatio siue capitatio* of the first and third of the three estates listed in the column.[103] The second figure seems to be a sub-total for a single holding on the first estate; there appears to be no preserved tax-assessment for the second estate, consisting of the single land-holding of Skopelos.[104] The registration for the third estate is incomplete, and the reading of the total tax-assessment figure in *iuga siue capita* is uncertain; the calculations for this estate are further complicated by the presence of slaves, coloni and livestock.[105] In practice, the first estate, that of Euphrosyne, is all we have to go on.

Δ̣ε̣σ̣ποτίας Ε̣ὐφρο[σύ]νης θυγατρὸς Παρηγορίο[υ]·
χω(ρίον) Μέσα· γῆ̣[ς] ἰο(ύγερα) μ, ἀμπέλ(ων) ἰο(ύγερα) β<δ, ἐλεῶν γῦρ(οι) ̂ γ
χω(ρίον) Σεράπιον· γῆς [ἰο(ύγερα)] κη<, ἀμπέλ(ων) ἰο(ύγερα) γ, ἐλεῶν γῦρ(οι) ξζ
χω(ρίον) Ἀποψίδιν· γῆς ἰο(ύγερα) λ· ἔχουσιν κ(εφαλό)ζ(υγα) α<γ΄μ΄σ΄
χω(ρίον) Οἴκων μέρος· γῆς ἰο(ύγερα) ιη, ἐλεῶν γῦ̣(ροι) κζ. ἔχι κ(εφαλό)ζ(υγα) ε΄μ΄τ΄

Domain of Euphrosyne, daughter of Paregorios:
A *chorion* Mesa, 40 *iugera* of (arable) land, 2 $^{1}/_{2}$ $^{1}/_{4}$ *iugera* of vines, ̂3 olive stands.
A *chorion* Serapion, 28 $^{1}/_{2}$ *iugera* of (arable) land, 3 *iugera* of vines, 67 olive stands.
A *chorion* Apopsidin, 30 *iugera* of (arable) land. They come to 1 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{40}$ $^{1}/_{200}$ *kephalozyga.*
A *chorion*, part of Oikoi, 18 *iugera* of (arable) land, 27 olive stands. It comes to $^{1}/_{5}$ $^{1}/_{30}$ $^{1}/_{300}$ *kephalozyga.*[106]

[103] Contra Duncan-Jones (above, n. 17) 203–204. His argument leads to the conclusion that on the Diocletianic schedule of conversion for Asiana, 30 *iugera* of ordinary arable land was *precisely* equivalent to 1 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{40}$ $^{1}/_{200}$ *iuga*. I find this implausible.

[104] This second figure (a5, $^{1}/_{5}$ $^{1}/_{30}$ $^{1}/_{300}$ *iuga siue capita*) is problematic. It certainly cannot refer to the second estate (Skopelos, a6–8, where I read γῆς ἰο(ύγερα) π̣η̣, ἐλεῶν γῦ(ροι) δ̣, βοῦς β, ὄνον α, πρόβατα η, i.e. 88 *iugera* of arable land, 4 olive trees, 2 head of cattle, one donkey, 8 sheep), since this would set an impossibly low value on arable land (at least 450 *iugera* of arable land *per iugum*). Hence the figure in a5 can only refer to the single land-holding of a5 (Οἴκων μέρος: 18 *iugera* of arable land, 27 olive trees). On the conversion rate proposed below (which of course requires *including* Οἴκων μέρος in the *iugatio siue capitatio*-figure in a4!) this plot would be valued at $^{1}/_{5}$ $^{1}/_{15}$ $^{1}/_{300}$ *iuga siue capita*. This is close enough to the preserved *iugatio siue capitatio*-figure in a5 to suggest that we may here be dealing with a minor accounting error. I concede that this is methodologically not very satisfactory.

[105] I tentatively read the figure in a11–12 as κ(εφαλό)ζ(υγα) ι̣γ̣ μ΄σ΄ (13 $^{1}/_{40}$ $^{1}/_{200}$ *iuga siue capita*). On the schedule proposed below, the total *iugatio* of the third estate would come to 9 $^{1}/_{3}$ $^{1}/_{30}$ $^{1}/_{100}$ *iuga*, leaving a *capitatio* of 3 $^{1}/_{2}$ $^{1}/_{10}$ $^{1}/_{20}$ $^{1}/_{100}$ for the slaves, *paroikoi* and animals. The figures are evidently of the right order of magnitude.

[106] My readings from the squeeze in Berlin confirm those of Kiourtzian, with two exceptions. At Mesa (l.2), the figure for arable is not λη N, but μ; the *kephalozyga* total (l.4) is not α<γ΄μς΄, but α<γ΄μ΄σ΄. The *tabularii* who produced these texts use a strictly limited range of re-

In tabulated form, the estate consists of:

	Arable (*iugera*)	Vines (*iugera*)	Olive trees
Mesa	40	2 3/4	⁂ 3
Serapion	28 1/2	3	67
Apopsidin	30	-	-
Oikôn *meros*	18	-	27
Total:	116 1/2	5 3/4	94 + *x*

This corresponds to 1 1/2 1/3 1/40 1/200 *iuga siue capita*.

The problem is not as difficult as it appears, given two premises. (1) The conversion ought to work out exactly. Earlier proposed schedules do not fulfil this crucial condition: if a *tabularius* gives fractions down to 1/200 of a *iugum* and smaller, it seems a reasonable assumption that his calculations are precise.[107] (2) It is evident from the restricted range of fractions in which *iuga* are expressed in all the census documents – 1/12, 1/20, 1/30, etc. – that the schedule is based on products of primes no greater than 5. This makes practical sense. A schedule which required calculating e.g. 47 1/9 olive trees to the *iugum* would cause a mutiny among the empire's *tabularii*. Conversion-rates based on round numbers, tens or hundreds, of trees and *iugera* are to be anticipated. Given these premises, I propose the schedule:

1 *iugum* = 100 *iugera* arable

or: 15 *iugera* vineyard
or: 300 olive trees

The calculations for the estate of Euphrosyne are then as follows:

116 1/2 *iugera* at 100 *iugera* per *iugum* = 1 1/10 1/20 1/100 1/200 *iuga*
5 3/4 *iugera* at 15 *iugera* per *iugum* = 1/3 1/20 *iuga*
94 olives at 300 olives per *iugum* = 1/4 1/20 1/100 1/300 *iuga*
Total = 1 1/2 1/3 1/40 1/300 *iuga*

ciprocal fractions; they favoured reciprocals whose denominators could be expressed as the product of primes no larger than 5, for reasons which will become clear. 1/46 is not such a fraction. When such fractions appear in printed texts of the tax-registers, they seem invariably (where checkable) to be misreadings: so the *capitatio* βωμ′ in Magnesia f5 was corrected by Déléage (above, n. 2) 194, to β ϛ′μ′; the figure ιμα′ in Thera a15 should be corrected to ια; the fraction ξγ′ in IG XII 3, 180.8 must be ξ′γ′, 1/60 1/3000. See further Appendix below.

[107] Hence the schedules proposed by Jones (above, n.2) 49–50, and Duncan-Jones (above, n. 17) 203–204, are to be rejected: an ‹approximate› conversion-rate is by definition the wrong conversion-rate.

In order for this schedule to work out precisely, the three olive trees at Mesa have each to be taken as equivalent to $^1/_{1800}$, rather than $^1/_{300}$ *iugum* (1 $^1/_2$ $^1/_3$ $^1/_{40}$ $^1/_{300}$ *iuga* + ($^1/_{1800} \times 3$) = 1 $^1/_2$ $^1/_3$ $^1/_{40}$ $^1/_{200}$ *iuga*). This is not as difficult as might appear. We are evidently not dealing with a cultivated olive grove. The odd symbol before the numeral (ϡγ) could be taken to signify ‹wild› or ‹second-class› or ‹uncultivated› olives. The three ‹wild› olive trees of Mesa would then each be assessed at $^1/_6$ of a cultivated olive tree (1 *iugum* = 1,800 wild olives), not an implausible rate of assessment.

The advantages of this schedule, as compared to earlier proposals, are that it precisely explains the fractions generated by the *tabularius*, and provides an satisfyingly straightforward series of conversion rates (15, 100, 300).[108] This schedule potentially allows us to do two things. (1) It certainly permits us to compare the financial value of farms and estates on the better-preserved land-registers (Thera and Mytilene) with those on the surviving tax-registers (Magnesia, Tralles, Samos, Astypalaia, Cos). (2) In theory, it might help us to estimate the real size of the farms and estates on the tax-registers. In practice, of course, there is no way of telling whether a 3-*iuga* holding at Tralles is a 300-*iugera* arable plot or 900 olive trees spread over 18 *iugera* of land. Despite this apparently vast margin of error, I shall argue that it is possible to come up with some usable, if hypothetical figures.

We should begin with the Theran land-holdings. Here we have the records of three substantial estates: the former estate of Paregorios, divided into three portions among his heirs, of which the land-register appears to be complete (Thera fragment a); the estate of a relative of a senator by the name of Attalos, the register of which is incomplete at the end (Thera fragment b); the estate of a third, unnamed individual, incomplete at both beginning and end (Thera fragment c).[109] Assuming a (maximal) figure of 50 olive trees per *iugerum* (which is likely to be on the dense side), it is a relatively simple matter to establish the minimal size of these estates in acres (one *iugerum* = 0.6232 acres):[110]

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[108] Some corroboration comes from the fact that the larger denominators of fractions in the preserved *iugationes* are very often multiples of 300. In the *iugationes* of the Magnesian census, by far the commonest small fractions are $^1/_{300}$ (10 instances) and $^1/_{600}$ (13 instances). This strongly implies a schedule based, in part, on multiples or fractions of 300. Fractions smaller than $^1/_{300}$ would represent ‹wild› olives. The 100-*iugera* conversion-rate for arable land can be paralleled in Egypt: J.-M. Carrié, Observations sur la fiscalité du IV^e^ siècle pour servir à l'histoire monétaire, in: L' «inflazione» nel quarto secolo d.C., 1993, 116–130.

[109] I use Kiourtzian's figures throughout, with four exceptions: a2 (Mesa) γῆ[ς] ἰο(ύγερα) μ (with Ross, Hiller; already assumed above); a7 (Skopelos) γῆς ἰ̣ο̣(ύγερα) π̣η̣, ἐλεῶν γῦ(ροι) δ̣; a13 (Ophragorea) ἀμπέλ(ων) ἰο(ύγερα) δ; a15 (Agros) ἀμπέλ(ων) ἰο(ύγερα) ια.

[110] Here, as in all the land-registers, olives are listed by the individual stand (γῦροι), rather than by *iugera*. I know of no research on the typical density of olive plantations in Asia Minor or the islands in antiquity; for the possible degree of regional and chronological variation, D. J. Mattingly, JRA 1, 1988, 45. For the figure of 50 olive trees per *iugerum* (= c.80 per acre or 200 per ha), see Paton, IG XII 2 p.38 (tentatively endorsed by G. Labarre, Les cités de Lesbos aux époques hellénistique et impériale, 1996, 226–227).

The former estates of Paregorios, consisting of 10 separate plots, covered 594.29 *iugera* (= 370.4 acres);
The estates of Attalos' relative, consisting of at least 16 separate plots, covered more than 805.36 *iugera* (= 501.9 acres);
The third group of estates, consisting of at least 17 separate plots, covered more than 650.72 *iugera* (= 405.5 acres).[111]

The spatial division of the land into arable, vineyard, and olive grove is more or less constant across the three estates: within each group, between 76.5 % and 85 % of the land was arable, between 13.3 % and 20.1 % was vineyard, and between 1.9 % and 3.5 % was olives. Therefore, what is more important for our purposes, the proportion of the *iugatio* made up of arable, vines, and olives respectively is also almost constant. So on the Paregorian estates, the total *iugatio* of 12.135 *iuga* was roughly 42 % arable, 43 % vines, 15 % olives; on the Attalan estates, the total *iugatio* of 21.69 *iuga* was roughly 28 % arable, 50 % vines, 22 % olives; in the third group of estates, the total *iugatio* of 14.63 *iuga* was roughly 36 % arable, 51 % vines, 13 % olives. A general breakdown of the tax-liability of land-holdings on Thera, then, would reveal that a third of the *iugatio* pertained to the 80 % of the land sown for arable cultivation; half the *iugatio* was accounted for by the 17 % of the land planted with vines; a sixth of the *iugatio* was provided by the 3 % of the land given over to olives.[112]

Agricultural priorities at Mytilene were different. The first stone of the Mytilenean land-register gives us the breakdown for seventeen land-holdings, for fifteen of which we have the figures for arable, vineyard, and olives.[113] These fifteen plots cover a total of 1,703.97 *iugera* (= 1,061.9 acres), of which 87.7 % was arable land, 6.4 % vineyard, and 5.9 % olive groves: a landscape strikingly unlike that of Thera. However, the Mytilenean holdings (unlike those on Thera) fall naturally into two qualitatively different groups. The first is a group of three large plots, between them covering 1,044.76 *iugera* (= 651.1 acres), more than 97 % of which consists of arable land. Specialist arable farms of this kind appear simply not to have existed on Thera. The remaining twelve plots, covering 659.22 *iugera* (= 410.8 acres), are both physically smaller and more agriculturally diverse: 72.8 % arable, 14.1 % vineyard, 13.1 % olives. Here too, the distribution of crops differs significantly from the situation on Thera. Olive-cultivation

[111] The two other small fragments of land-assessments (Thera f and g) add a further 250.86 *iugera*; the total for the surviving parts of the register is 2,301.2 *iugera* (= 1,434 acres). I have no idea how Geroussi-Bendermacher (above, n. 5) 339, reaches her total of 8,200 acres.

[112] On the basis of his conjectural schedule of conversion, Jones (n. 2) 53, had calculated an even division of the *iugatio* at Thera and Lesbos between arable on the one hand and vines and olives on the other; this can clearly be rejected.

[113] IG XII 2, 76, conveniently tabulated by Paton, p. 38: in the fifteenth column, the second figure should be 94, not 9. My calculations differ from those of Labarre (above, n. 110) 227–229, since he includes the two incomplete land-holdings d13-e3 and k8–12, and also, more importantly, the pasturage attached to each holding. Since pasture is not recorded at Thera, I leave it out of account here also.

is significantly more important on Lesbos, vine-cultivation slightly less so. This is unsurprising. The large East Aegean islands are better suited to oleiculture than the Cyclades, and olive cultivation on modern Lesbos has approached the status of monoculture: in the mid-twentieth century, 11.6% of all olive-trees in Greece were on Lesbos.[114] By contrast, the volcanic soil of Santorini is exceptionally well-suited to vine-cultivation, and in modern periods, the greater part of the Theran landscape has been given over to the vine.[115] It is true that in the Classical and Hellenistic periods, Lesbos had been famous for its viticulture, and had also been heavily dependent on imported grain.[116] For whatever reason, things had clearly changed by the fourth century AD. There is no suggestion of extensive viticulture in the Mytilenean land-register, and there appears to be no shortage of arable land.

Despite these differences in the nature of the rural landscape on Thera and Lesbos, the two islands offer strikingly similar overall conversion-rates between *iugera* and *iuga*. At Thera, the mean area of assessable land per tax-unit on each of the three estates works out as (1) 48.97 *iugera* per *iugum*; (2) 37.13 *iugera* per *iugum*; (3) 44.48 *iugera* per *iugum*, an overall average of 43.53 *iugera* per *iugum*. At Mytilene (again ignoring pasturage), the three ‹arable› plots give a average of 76.49 *iugera* per *iugum* (i.e. relatively low-profit land-use), and the twelve ‹non-arable› plots an average of 25.97 *iugera* per *iugum* (i.e. relatively high-profit land-use). However, when all fifteen Mytilenean land-holdings are taken together, the mean area of land per tax-unit is 43.65 *iugera* per *iugum*, a strikingly similar figure to that found at Thera. This is a significant result. Both in a relatively homogeneous rural landscape (Thera) and in a landscape characteristed by relative diversity of farm types (Mytilene), the total area of land per tax-unit tends, across a large number of land-holdings, towards a norm of 43.5 *iugera* per *iugum*.

Figures survive from five census-inscriptions drawn up in *iuga*: those of Tralles, Magnesia, Astypalaia, Samos, and Cos. We may begin with Tralles and Magnesia. At Tralles, the average tax-assessment across all 40 land-holdings for which the *iugatio* survives is 3.49 *iuga*. This figure may, however, be slightly distorted by a handful of uncharacteristically large plots. If we discount the largest and smallest 10% at either end of the scale, we come up with an average of 2.97 *iuga*, satisfyingly close to the median tax-assessment across all forty holdings (2.78 *iuga*). Otherwise there is little to be

[114] P. Brun, Les archipels égéens dans l'antiquité grecque (V^e^-II^e^ siècles av. notre ère), 1996, 83; Labarre (above, n. 110) 226 n. 21. For specialised oleiculture, note especially the plot at IG XII 2, 76f11-g1: only 3 *iugera* of arable land, no pasturage, 10 $^{1}/_{4}$ *iugera* of vineyard, and 600 olive trees, spread over a minimum of 12 *iugera*: more olives than the entire estate of Paregorios on Thera.

[115] F. Hiller v. Gaertringen, Thera I, 1899, 73–76, 134; Thera IV, 1909, 148–150. Two of the farm-names in the Theran land-register may reflect vine-cultivation: Ἀλωπέκιον and Κάνθαρον (Kiourtzian [above, n. 5] 235, 240).

[116] Lesbian viticulture: Brun (above, n. 114) 79 n. 68; Labarre (above, n. 110) 236. Grain: Labarre, 221–223.

made of the distribution of farm-sizes, but to note that individual plots larger than 6 *iuga* are, on the available evidence, unusual. At Magnesia, the average across all 81 land-holdings is somewhat larger, coming out at around 4.21 *iuga* per plot. This figure is certainly distorted by an enormous senatorial land-holding of 75.16 *iuga*, almost four times the value of the next largest plot of land (21.15 *iuga*). Again, discounting the largest and smallest 10 %, we come to an average of 2.62 *iuga* per plot, very similar to the average at Tralles. The median, interestingly, is lower than at Tralles (1.54 *iuga*); the Magnesian register has a long ‹tail› of small plots valued at less than 1.5 *iuga* (47 %, compared to 30 % at Tralles).

It seems a reasonable assumption that patterns of land tenure at Magnesia and Tralles, neighbours in the lower Maeander valley, were broadly similar. However, as we have seen, the distribution of sizes of land-holdings differs significantly between the two documents, due to the different range of proprietors represented in the surviving fragments. At Tralles, where almost all our evidence is for decurial estates, plots seem to fall fairly naturally into two groups: the small holding of less than one *iugum*, and the medium holding of 4–7 *iuga*.[117] Only one plot of land is significantly bigger than this, the large *agros* Tomos and Hyperbole, assessed at 17 $^1/_2$ *iuga*: this is the centre of the estate of Tatianos, the wealthiest proprietor in this register.[118] At Magnesia, where we have a more socially representative range of proprietors, the spread of farm-sizes is correspondingly broader. There are proportionally far more small holdings of less than one *iugum*, reflecting a class of genuine small-holders invisible at Tralles. There is also a clear cluster of big holdings around 9–11 *iuga* in size. In short, at Tralles, we find small (0–1.5 *iuga*) and medium-sized land-holdings (4–7 *iuga*), but very few big plots of land; at Magnesia, we find many more small-holdings (0–1.5 *iuga*), a comparable number of medium-sized holdings, and an entirely new category of big plots (9–11 *iuga*).

What do these assessments represent in terms of real property? Naturally we have no way of telling how much of any given *iugatio* is arable, and how much vineyard and olives. For each *individual* land-holding, the margin of error is of course very wide. However, as we have seen, the land registers of the island estates suggest a *global* cor-

[117] A fourth-century decurial *praediolum* near Bordeaux consisted of 200 *iugera* of arable, 100 *iugera* of vines, 50 *iugera* of pasturage, and 700 *iugera* of woodland: Aus. Hered. 21–24. On the Asiatic scale of conversion, the first two elements (clearly far the more valuable) would be assessed for 8 $^1/_2$ $^1/_6$ *iuga*, comparable in scale to decurial farms at Tralles.

[118] Note, however, that the second and third most valuable holdings are both owned by the same, anonymous proprietor (Col. I 27–28). This proprietor's entry appears to end at Col. I 35, and it is difficult to find space for the declaration formula before line 8. If correct, this suggests a property consisting of up to 24 different plots, as compared to 14 for Tatianos: this man was a larger landowner than anyone in Col. II. Col. I line 6, the final line of the previous entry, gives the enormous figure of 54 $^1/_6$ $^1/_{15}$ $^1/_{150}$ *capita*. It therefore seems likely that the declarants of Col. I – maybe also decurions, on the basis of I 36 – were wealthier than those of Col. II.

respondance of 43.5 *iugera* to the *iugum*.[119] On this ratio, the biggest single unit of land in any of the census documents, the Magnesian senatorial land-holding of 75.16 *iuga*, would cover around 3,629 *iugera* (= 2,038 acres); if this was essentially an arable farm, it could be as large as 7,516 *iugera* (= 4,684 acres). This, of course, is a single plot: the senator's total estate was certainly much larger. By comparison, Tatianos, the wealthiest of the three Trallian decurions, owned, in total, around 2,247 *iugera* of land (= 1,400 acres), Kritias 904 *iugera* (= 563 acres), and Latron 755 *iugera* (= 470 acres). The average small farm of 0–1.5 *iuga* will be up to around 65 *iugera* in size (40 acres).[120] A medium-sized decurial farm of 4–7 *iuga* ought, in theory, to be around 175–305 *iugera* in size (110–190 acres), but since holdings of this size will tend to specialise in a particular crop, the margin of error is correspondingly greater. At the other end of the scale, the smallest piece of land in the Trallian register is a miniscule plot owned by the decurion Kritias, a place (*topos*) known as Βλέπων (‹the outlook›), assessed for $^{1}/_{80}$ *iugum*. The fraction is most easily explained on the assumption that this is a plot of $1\,^{1}/_{4}$ *iugera* of arable land (c. $^{4}/_{5}$ acre).[121]

The tax-registers from Astypalaia, Samos and Cos provide some material for comparison. At Samos, the *iugationes* of six holdings are preserved. The sample is not large enough for us to get much of a sense of the nature of land-tenure at Samos, but the two outlying figures ($^{1}/_{10}\,^{1}/_{800}$ *iuga* and 13 *iuga*) are at least comparable with outlying plots at Tralles.[122] The situation at Cos is similarly differentiated. The *iugationes* are preserved for 25 holdings, spread across two, or more likely three different estates. The 12 holdings of the first (or first two) estates range between $^{1}/_{40}$ and $1\,^{1}/_{2}$ *iuga*, with a concentration at the lower end of the scale, at an average of 0.38 *iuga* per farm (corresponding to around 16.53 *iugera*/10.3 acres per farm, exactly the size of the average family plot in the Classical period).[123] The remaining estate, made up of at least 13 separate plots of land, range between $^{1}/_{50}$ and $9\,^{1}/_{3}$ *iuga*, at an average of 2.1 *iuga* per land-

[119] There is no way of telling whether the *iugationes* at Tralles, Magnesia, Astypalaia and Cos include pasturage, registered at Mytilene and Mylasa, but not at Thera or Hypaipa. At Samos, pasturage was not included in the *iugatio*, but appears as a separate item in each tax-entry. Since the value of pasture-land must have been minimal, this will, in practice, not make much difference to our calculations.

[120] This fits well with estimates of the average size of the family farm in Classical Attica: between 10 and 20 acres was normal, 45–70 acres unusual, larger than 100 acres all but unknown: A. Burford, Land and Labor in the Greek World, 1993, 66–71; V. D. Hanson, The Other Greeks: The Family Farm and the Agrarian Roots of Western Civilisation, 1995, 181–193.

[121] Arable land was usually registered in whole *iugera*, but cf. e.g. Thera b3, χω(ρίον) Καλάμου μέρ(ος) < (so I read from the squeeze in Berlin), registered as $^{1}/_{2}\,^{1}/_{3}$ *iugera* of arable, hence assessable at $^{1}/_{200}\,^{1}/_{300}$ *iuga*. Compare also the tiny plot at Magnesia b11, part of the former χω(ρίον) Ἀταραχιανός, assessed at $^{1}/_{100}\,^{1}/_{600}$ *iuga*: perhaps $1\,^{1}/_{6}$ *iugera* of arable?

[122] I take the opportunity to correct a few readings in IG XII 6, 980, on the basis of the squeeze in Berlin. In line 3, read ζυ(γὰ) α < ι′ν′; line 5, read ζυ(γὰ) γ < γ′ϗ′ρ′χ′; line 6, read ζυ(γὰ) γ < γ′ν′χ′.

[123] Hanson (above, n. 120) 188–189.

holding. This latter figure is slightly distorted by two uncharacteristically large holdings; the median plot-value is a mere 0.73 *iuga*. Once again, the outlying holdings at Cos are comparable in value to those at Tralles, but as at Samos, the material is not sufficient to give much of a sense of the peculiarities of Coan land-tenure.[124] At Astypalaia, by far the smallest of the three islands, we have what appears to be the complete record for the estate of a certain Heraklides, consisting of ten plots of land. The entire estate is assessed for 10.73 *iuga*, and a little over 25 *iuga siue capita*. The estate is, therefore, about half the value of that of Kritias of Tralles, two-thirds that of Paregorios at Thera. The largest of Heraklides' land-holdings is only 2 $^{1}/_{4}$ *iuga* in value (c. 98.5 *iugera*/61 acres), and the average plot is valued at only a little over one *iugum*, considerably smaller than at Tralles or Magnesia.

The samples from Samos, Astypalaia and Cos are, however, very small, and we have no reason to suppose them to be characteristic. For a more realistic comparison, we need to return to the Theran and Mytilenean land-registers. The land-assessments of a total of 39 land-holdings at Thera can be read in their entirety with reasonable confidence. Conversion on the above schedule gives an average of 1.14 *iuga*, the most valuable holding being assessed at a mere 4 $^{1}/_{3}$ $^{1}/_{15}$ $^{1}/_{100}$ *iuga*, the least valuable at $^{1}/_{20}$ $^{1}/_{100}$ *iuga* (a tiny arable plot of 6 *iugera*).[125] This average is, however, misleadingly high, since only 12 of the 39 holdings are valued at more than one *iugum*; half of the Theran properties listed are valued at between a quarter and three-quarters of a *iugum*. The ordinary Theran plot was valued at well below one *iugum*. The conversion into *iuga* also conceals the fact that even the largest Theran properties in terms of tax assessments do not cover a large area of land (see above). The holdings assessed at more than one *iugum* almost invariably have an unusually large vineyard, assessed at a high rate of tax but not taking up much space.[126] The largest plot in terms of area is Ophragorea (a13), assessed at 2 $^{1}/_{2}$ $^{1}/_{10}$ *iuga*, which had a total of only around 148 *iugera* of arable, vines, and olives; only two other Theran properties are larger than 100 *iugera*. The Theran census therefore corroborates the impression derived from Astypalaia and Cos: land-holdings on the smaller Mediterranean island are, on average, a third or a quarter of the size and value of plots on the mainland.[127]

The estate described in the first fragment of the Mytilene land-register (IG XII 2, 76) makes an interesting contrast with both the Theran and mainland estates. Six out of fifteen properties are larger than 100 *iugera*; the largest plot covers more than 430 *iugera* of cultivated land (almost all of it arable). Land-holdings at Mytilene were bigger than those on Thera. The *iugationes* on this estate are fairly evenly distributed between $^{1}/_{2}$ $^{1}/_{5}$

[124] The Coan tax-register will be published shortly by K. Hallof.

[125] Leabaton, a11; Toparion, a14.

[126] Of the eight holdings assessed between 2 and 4.5 *iuga*, six include vine-plantations of more than 2 *iuga* in value.

[127] The analysis of Duncan-Jones (above, n. 17) 204–205, depends on the peculiar premise that holdings on the Asiatic mainland and on the islands are of roughly the same size.

$^{1}/_{300}$ *iuga* and 5 $^{1}/_{10}$ $^{1}/_{300}$ *iuga*, with an average of 2.6 *iuga*. This average is very similar to our modified averages at Tralles and Magnesia (2.97 and 2.72 *iuga* respectively), and contrasts sharply with the situations on Thera, Astypalaia and Cos. In short, land-tenure at Mytilene, with its physically large, relatively high-value properties, looks distinctly similar to the pattern familiar from the higher-value properties at Magnesia and Tralles. It is true that the upper limit of farm-value at Mytilene is not much higher than that at Thera: we have no evidence for land-holdings valued at more than 4–5 *iuga* on any of the Aegean islands. One ought, however, to be wary of arguing that the 10-*iuga* properties which were clearly quite normal at Magnesia on the Maeander are unimaginable on Lesbos. The largest Mytilenean holding, 433.5 *iugera* in extent, is of almost precisely the extent we should expect on average for a 11-*iuga* holding; as it happens, the Mytilenean plot was given over almost entirely to arable cultivation, and hence was valued at a mere 5 $^{1}/_{10}$ $^{1}/_{300}$ *iuga*. It would be perilous to assume that there were no individual properties at Mytilene on the scale of the 75-*iuga* senatorial holding at Magnesia, given how exceptional this plot is even in the Magnesian register. In conclusion: there is no good reason to suppose that land-tenure at Mytilene in the early fourth century differed significantly from land-tenure on the Anatolian mainland.

Estate-owners and small-holders at Magnesia

The only text that gives us any sense of the distribution of the land between large and small proprietors is the Magnesian tax-register. Because this is organised alphabetically by name of land-holding, rather than by the individual proprietor, we find here what is lacking in the Trallian register: a genuinely random cross-section of landowners, large and small. We can also get some sense of the total amount of *annona*-assessable land at Magnesia. On the basis of the letters of the alphabet covered in the surviving part of the register (*alpha* and *beta*, both incomplete), it can be estimated that at most c. 8 % of the total register (c. 1066 holdings) survives.[128] The *iugatio* is preserved for 81 holdings: a total of 340.82 *iuga*, or roughly 14,825 *iugera*. We can therefore extrapolate a total *iugatio* for Magnesia of 4260.2 *iuga* distributed across 1066 plots, corresponding to 185,319 *iugera* (= 115,491 acres, 180 square miles). This looks to be of the right order of magnitude.[129]

22.1 % of the total *iugatio* of the surviving part of the register is accounted for by the single huge senatorial property mentioned above. A further 32.4 % of the land assessment (110.5 *iuga*) pertains to a mere five proprietors (Valerianus Romus, Patroeine, the decurion Pollio, the tribune Severianus, Tyrannos), at least four of them with multiple properties. Thus the wealthiest six proprietors, representing under 10 % of

[128] Duncan-Jones (above, n. 17) 138.

[129] Note that if my argument concerning enbathric properties is correct (above, pp. 459–463), this total would exclude civic land. The total territory of Magnesia is estimated by R. T. Marchese, The Lower Maeander Flood Plain, 1986, I 317, as 215 square miles.

the 62 attested land-owners, were assessed for almost 55 % of the land-tax; the proportion of the total land-*area* owned by these proprietors may be even greater than this, if they chose to specialise in arable rather than vineyard or olives. Moreover, given how little of the total tax-register is preserved, multiple land-holdings must largely be hidden; it is possible that the total percentage of the land owned by the wealthiest five or six proprietors was even greater than this.[130]

Property-owners at Magnesia are a disparate group. Around a fifth of the proprietors are women.[131] More interesting are the numerous landowners – also around a fifth of the total – who are natives of the neighbouring cities of Ephesus and Tralles; a single land-owner comes from further afield, a Colophonian, the declarant of a large land-holding of 8 *iuga*. Evidently nothing prevented wealthy citizens of nearby cities buying up property on Magnesian territory.[132] The Ephesian and Trallian landowners may of course simply have been extending clusters of properties on the borders between the cities' territory, but this does not apply to the Colophonian. It may not be coincidental that his plot is the largest of the properties owned by non-Magnesians. This phenomenon reminds us that the holdings registered in the Trallian census may not have represented the total real estate of the three decurions: each may well have owned additional properties on the territory of Magnesia, Nysa, or further afield. There is, however, as we have seen, only one instance of a true absentee landlord in the Magnesian register: Quadratus, of uncertain origin, whose declaration is made in his stead by his slave bailiff, Syneros.[133]

Turning to native Magnesian proprietors, parts of the estates of six decurions are represented, whose holdings seem, as we should expect, to have been larger than the average: Heraklides owned a plot assessed at 9 $^1/_2$ *iuga*, and Pollio one assessed at more than 21 *iuga*. The decurion Paulus has four holdings registered in his name, three of respectable size (between 2 and 4 *iuga*), the fourth perhaps a specialised livestock farm (only $^1/_5$ *iugum*, but 5 $^1/_4$ *capita*). At least three senators, and two senatorial women, are listed; it was, unsurprisingly, a senator who owned the vast 75-*iuga* holding. A tribune, Severianus, is the declarant of no fewer than five properties, two of them very large (9 and almost 14 *iuga* respectively). As we have seen, the goddess Artemis owned a substantial 10-*iuga* plot of land, for which no-one felt themselves able to act as declarant. Finally, there follow a host of private individuals, mostly the owners of single

[130] Duncan-Jones (above, n. 17) 137–138.

[131] A comparable proportion of female landowners is found at Dereköy in north-west Lycia in the mid-second century AD (13 of 53): M. Wörrle – W. W. Wurster, Dereköy: Eine befestigte Siedlung im nordwestlichen Lykien und die Reform ihres dörflichen Zeuskultes, Chiron 27, 1997, 429–438.

[132] For individuals owning land in the territory of neighbouring cities, see L. Robert, Études Anatoliennes, 1937, 378–382 (Pisidia and Lycia). Dio could claim it to his credit that all the farms which made up his modest estate were on the territory of Prusa, with the implication that this might not necessarily have been the case: Dio 46.7.

[133] Magnesia a14.

small plots. The two richest are Valerianus Romus, the owner of three properties, two of them very large (10 $^{1}/_{3}$ and 11 $^{1}/_{2}$ *iuga*), and a woman called Patroeine, also the owner of three holdings, at least two of them very large (10 $^{1}/_{3}$ and 15 $^{1}/_{2}$ *iuga*). Nothing is known of the social status of these last two proprietors.

The estate of one particular individual might detain us a little longer. A certain Pistikos is listed as the owner of four properties. The two plots for which the *iugatio* is preserved are not unusually large (1 $^{1}/_{4}$ and 6 $^{3}/_{4}$ *iuga* respectively). The three preserved *capitationes* are, however, on a truly phenomenal scale (15 $^{1}/_{2}$, 91 $^{1}/_{3}$, 31). The only other *capitatio* on anything like this scale is the great senatorial 75-*iuga* holding, with almost 53 *capita*.[134] Pistikos' estates are clearly of a very specialised kind, with very large resources of manpower (or conceivably livestock) and relatively little land. It is at least suggestive that two of his properties are named Barbariane and Barbaria; the names may of course be many generations old, but it is equally conceivable that Pistikos' *capitationes* were swelled by the presence of ‹barbarian› slaves.[135] One wonders whether Pistikos might have been engaged primarily in industry, rather than agriculture. If so, one could speculate that Pistikos' men were engaged in the quarrying of emery, one of Magnesia's most important natural resources. In the early twentieth century, the emery-quarries in the vale of Gümüşköy, below the north flank of the Gümüş Dağı (Mt Thorax), were said to be the most productive in Asia Minor.[136]

A few more possible instances of industrial or artisanal properties may be noted. A holding by the name of Aprianos, owned by a senator Priscillianus, had no registered *iugatio*, and a *capitatio* of 12 $^{1}/_{4}$; another holding, neither the name nor the declarant of which is preserved, had a huge *capitatio* of 26 $^{1}/_{8}$, again with no registered *iugatio*. More interesting still is the case of Philippos of Tralles, who owns a share in a joint property near (the village of?) Didassai, with no registered *iugatio* and a *capitatio* of 7 $^{1}/_{8}$ $^{1}/_{75}$, and is also listed along with two other Trallians as the declarant of part of a holding called Apollinareion, with a *iugatio* of 2 $^{1}/_{3}$ and a *capitatio* of 8 $^{1}/_{8}$. It is tempting to suppose that Philippos and his Trallian colleagues, like Pistikos, were engaged in specialised industry of some kind.[137]

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[134] Magnesia b12, b18, d16–17. In b18, the emendation proposed by Jones (n. 2) 54 n. 48: κε(φαλαὶ) ια γ′ (11 $^{1}/_{3}$ *capita*), must be rejected: the figure ϙ = 90 is perfectly clear on the squeeze. The *capitatio* for the Magnesia senatorial property (c2) is misread by Kern: I read here νβ < γ′ι′κ′α′σ, 52 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{20}$ $^{1}/_{1200}$.

[135] Compare the new fragment of the Theran census, listing the names of 152 agricultural slaves: Geroussi-Bendermacher (above, n. 5).

[136] V. Cuinet, La Turquie d'Asie III, 1900, 364; A. Philippson, Reisen und Forschungen im westlichen Kleinasien II, 1911, 91–92; L. Robert, A travers l'Asie Mineure, 1980, 339–342. Note that Pistikos' largest plot is called Αὐλών, ‹vale› or ‹glen›, perhaps suggesting property in the hills rather than in the Lethaeus or Maeander plain.

[137] Magnesia a12, ἀγρ(ὸς) Ἀπριανός (where there is clearly a *vacat* before the *capitatio*); c4; g1 (where I read from the squeeze [σ]ύνκτησις περὶ Διδασσας, ἐξ (ἀπογραφῆς) Φιλίπ⟨π⟩ου Τραλλ(ιανοῦ) *vacat* κ(εφαλαὶ) ζ η′ο′ε); b7–8.

This is, of course, pure conjecture. The more important question raised by these peculiar ratios of *capitatio* to *iugatio* is, once again, that of agricultural specialisation. This was presumably the norm on large estates. At Prusa in the late first century AD, Dio Chrysostom is able to defend himself against accusations of hoarding during a grain shortage with the plea that his numerous farms have virtually no arable land, indeed hardly enough for his own use, and his income is derived exclusively from vines and cattle.[138] We have seen that there is some evidence of agricultural specialisation at Thera and Mytilene (vines and olives respectively). No doubt this was also true of the larger estates in the Maeander valley; it is unfortunate that the nature of the tax-registers does not allow us to be more specific.

Conclusion

I conclude with what seem to me to be the three most important characteristics of large private estates in the lower Maeander valley in the early fourth century AD.

(1) Land-holding is extraordinarily fragmented. Even the wealthiest landowners tend to possess a highly diverse range of different types of small- and medium-sized properties, ordinarily ranging between 12.5 and 250 acres (0.5–10 *iuga*) in size. The 75-*iuga* senatorial estate at Magnesia – large enough to be a parcel of former royal or imperial land, granted to the relevant senator's family *en bloc*[139] – is an isolated case. The Maeander valley in the early fourth century AD is not a latifundial landscape.

(2) These fragmented land-holdings are regularly clustered together around villages. Latron's property is all concentrated around two villages, Bounos and Daphne: three of his four plots are in the vicinity of Bounos, a village which he holds on enbathric loan from the city of Tralles. Two of Kritias' properties are near the village of Ordomou Kepoi, where he stabled livestock and slaves; his largest plot, Klastanous, has no registered *capitatio*, and may well also lie near Ordomou Kepoi. So far as we can judge, Tatianos' estates differ not only in scale (more than twice the *iugatio* of either Latron or Kritias), but also in kind. Again, some of his properties appear to be clustered around particular villages: we have evidence for concentrations around the villages of Monnara, Paradeisos, and again Ordomou Kepoi. But Tatianos also owns a number of self-sufficient farms, with *capitationes* large enough to suggest that they were not dependent on village manpower: Tomos and Hyperbole, Kolea, Alkizo Kome. This suggests that we may have two distinct patterns of decurial landholding. Smaller decurial landowners were essentially village magnates, whose properties de-

[138] Dio 46.8.

[139] We have estimated the size of this 75-*iuga* estate as 2,038 acres. By way of comparison, the arable estate in the Troad granted by Antiochos I to Aristodikides of Assos in c. 275 BC (RC nos. 10–13) was around 1,360 acres in extent: Chandezon (above, n. 48) 209–212, with examples of entire villages or groups of villages included in royal grants.

pended on village manpower and services to be economically viable; wealthier decurions, independent as they were of village labour, could maintain a far more dispersed, and thus presumably more diversified portfolio of estates.[140]

(3) There is little or no sign of an ongoing process of predatory acquisition and conglomeration. It is true that in the few cases where the toponymy shows that two properties have been combined, the resultant plots tend to be unusually large: so the largest single plot of land at Tralles, owned by the decurion Tatianos, was a conglomeration of two separate holdings, Tomos and Hyperbole.[141] But such cases are relatively unusual. Alongside this process we also see the break-up of certain very large estates: a Magnesian holding of 18 $^1/_2$ $^1/_8$ *iuga* formerly owned by a certain Euhormos, which would have been the third largest plot in any of the surviving census documents, has been divided into four plots, two of them now in the possession of the decurion Paulus.[142] In the current fragmentary state of the documentation, no single dominant tendency is visible.

None of these three characteristics is particularly unexpected. However, given the near-total absence of detailed quantitative evidence for Asiatic estates at any other period before the eleventh century AD, it is worth emphasising quite how firm the empirical bases of these statements are. And until someone is able to produce a defensible schedule of conversion between *capita* and the real rural population of Tralles and Magnesia, the Diocletianic census-registers can, I think, take us no further.

Appendix: The Tax-Register of Astypalaia

Block of blue-white marble, apparently complete. Originally in chapel of St John near Ἀγριελίδι; current location unknown. Dimensions: H. 0.40, W. 1.12, Th. 0.28, Lh. 0.03. Seen, but not published, by F. Ross in 1841 (Reisen auf den griechischen Inseln des ägäischen Meeres, 1843, II 65). Ed. F. Hiller v. Gaertringen, Inscriptiones Graecae XII 3, 1898, 180, with facsimile, and Addenda p. 230. See also Inscriptiones Graecae XII 3 Supplement, 1904, p. 278; Déléage (above, n. 2), 190–194. Squeeze in Berlin. Date: AD c. 310.

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[140] Similarly, Ausonius appears to have attempted to cluster his land-holdings around the *pagus Nouarus*: *totque mea in Nouaro sibi proxima praedia pagi* (Aus. Ep. 24.87). See R. Etienne, Ausone, propriétaire terrien et le problème du latifundium, in: M. Christol et al. (eds.), Institutions, société et vie politique dans l'empire romain au IV^e siècle ap. J.-C., 1992, 305–311.

[141] Tralles Col. II 18 (Tomos and Hyperbole, 17 $^1/_2$ $^1/_{60}$ *iuga*); Col. II 37 (Klastanous and Lykou Monaulis, 6 $^1/_6$ $^1/_{70}$ *iuga*: Kritias' largest single property); Col. II 49 (Hippike and Symbolos, 1 $^1/_{10}$ *iuga*); Magnesia d5 (Barin and Dynei, 17 $^1/_2$ $^1/_{60}$ *iuga*: the fourth largest property in the Magnesian register); e13 (Bolbianon and Virgilion, 6 $^1/_2$ $^1/_3$ $^1/_{30}$ $^1/_{300}$ *iuga*). The plot ‹Virgilion› no doubt originally belonged to a member of the great Milesian family of the Vergilii.

[142] Magnesia f5–8, with Déléage (above, n. 2) 194–196. Tychikos Eugnomonios (probably surname rather than patronym), owner of the largest part of the former estate of Euhormos (10 $^1/_{10}$ *iuga*), may be a man of recent wealth; he also owns two parts of another divided estate, Baias (e2–6).

[δ]ε̣σ̣π̣οτ̣ίας Ἡρακ⟨λ⟩είδους· ζυ(γο)κ(εφαλαὶ) κε γ′κ′υ′β′, ἐν οἷς
ζυ(γὰ) ι < ε′κ′δ σ′, ὧν [ἀνθρ(ώπων)] καὶ ζ[ώ](ων) κ(εφαλαὶ) ιδ < [η′ο′ε ψ′ν]
χω(ρίον) Σίδηρα· ζυ(γο)κ(εφαλαὶ) δ < ι′ο′ε, οὗ γῆς ζυ(γὰ) α ι′ξ′α′σ,
ἀνθρ(ώπων) κ(εφαλαὶ) γ ι′σ′ψ̣′ν, ζ̣ώ̣(ων) ⟨κ(εφαλαὶ)⟩ γ′κ′σ′α′
χω(ρίον) Σχινοῦς· ζυ(γο)κ(εφαλαὶ) β < γ′η′μ′, γῆς ζυ(γὰ) < ε′ψ′ν,
ἀνθρ(ώπων) κ(εφαλαὶ) β δ′μ′σ′ψ′ν
χω(ρίον) Βολοῦς· ζυ(γο)κ(εφαλαὶ) γ δ′μ′σ′ψ′ν, γῆς ζ[υ](γὰ) < [ς′]κ′[σ′] β′,
ἀνθρ(ώπων) κ(εφαλαὶ) α < γ′κ′δ, ζώ(ων) κ(εφαλαὶ) < ς′ξ′α′σ
χω(ρίον) Ἐγιροῦς· ζυ(γο)κ(εφαλαὶ) γ γ′κ′ρ′ν, γῆς ζυ(γὰ) β δ̣′ο′ε̣ α̣′σ,
ἀνθρ(ώπων) κ(εφαλαὶ) < δ′, ζ̣ώ̣(ων) κ̣(εφαλαὶ) γ′κ′δ α̣′
χω(ρίον) Σπαρτή·[143] ζυ(γο)κ(εφαλαὶ) γ ς′ξ′β′, γῆς ζυ(γὰ) β κ′μ̣′σ̣′β̣′,
ἀνθρ(ώπων) κ(εφαλαὶ) α ι′τ̣′
χω(ρίον) Βόριον· ζυ(γο)κ(εφαλαὶ) β δ′ο′α′σ, γῆς ζυ(γὰ) α < ο′α′σ,
ἀνθρ(ώπων) κ(εφαλαὶ) < δ′
χω(ρίον) Δοναϰοῦς, ζ(υγο)κ(εφαλαὶ) β<γ′ι′ξ′γ′, γῆς ζυ(γὰ) < ε′μ′σ′ψ′ν,
ἀνθρ(ώπων) κ(εφαλαὶ) α < γ′κ′δ, ζώ(ων) κ(εφαλαὶ) γ′ρ′α′φ
χω(ρίον) Κυάνεαι, ζυ(γο)κ(εγαλαὶ) β γ′η′λ′σ′, γῆς ζυ(γὰ) α ι′ε ο′ε,
ἀνθρ(ώπων) κ(εφαλαὶ) α γ′ι′β
χω(ρίον) Θρᾷσσα, ζυ(γὰ) γ′σ′μ *vac.*
χω(ρίον) ΚΟΔ̣Γ̣Ο[..c.3.]Α̣Ι̣, ζυ(γὰ) ε′ξ′α′σ *vac.*
- - -

The estate of Herakleides. 25 $^{1}/_{3}$ $^{1}/_{20}$ $^{1}/_{400}$ $^{1}/_{2000}$ *iuga siue capita*: in which
10 $^{1}/_{2}$ $^{1}/_{5}$ $^{1}/_{24}$ $^{1}/_{200}$ *iuga*; (and) of which 14 $^{1}/_{2}$ [$^{1}/_{8}$ $^{1}/_{75}$ $^{1}/_{750}$] *capita* of [persons] and
livestock.
A *chorion* Sidera, 4 $^{1}/_{2}$ $^{1}/_{10}$ $^{1}/_{75}$ *iuga siue capita*, of which 1 $^{1}/_{10}$ $^{1}/_{60}$ $^{1}/_{1200}$ *iuga* of land,
3 $^{1}/_{10}$ $^{1}/_{200}$ $^{1}/_{750}$ *capita* of persons, $^{1}/_{3}$ $^{1}/_{20}$ $^{1}/_{200}$ $^{1}/_{1000}$ *capita* of livestock.
A *chorion* Schinous, 2 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{8}$ $^{1}/_{40}$ *iuga siue capita*: $^{1}/_{2}$ $^{1}/_{5}$ $^{1}/_{750}$ *iuga* of land,
2 $^{1}/_{4}$ $^{1}/_{40}$ $^{1}/_{200}$ $^{1}/_{750}$ *capita* of persons.
A *chorion* Bolous, 3 $^{1}/_{4}$ $^{1}/_{40}$ $^{1}/_{200}$ $^{1}/_{750}$ *iuga siue capita*: $^{1}/_{2}$ [$^{1}/_{6}$] $^{1}/_{20}$ [$^{1}/_{200}$] $^{1}/_{2000}$ *iuga*
of land, 1 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{24}$ *capita* of persons, $^{1}/_{2}$ $^{1}/_{6}$ $^{1}/_{60}$ $^{1}/_{1200}$ *capita* of livestock.
A *chorion* Aigirous, 3 $^{1}/_{3}$ $^{1}/_{20}$ $^{1}/_{150}$ *iuga siue capita*: 2 $^{1}/_{4}$ $^{1}/_{75}$ $^{1}/_{1200}$ *iuga* of land,
$^{1}/_{2}$ $^{1}/_{4}$ *capita* of persons, $^{1}/_{3}$ $^{1}/_{24}$ $^{1}/_{1000}$ *capita* of livestock.
A *chorion* Sparte, 3 $^{1}/_{6}$ $^{1}/_{60}$ $^{1}/_{2000}$ *iuga siue capita*: 2 $^{1}/_{20}$ $^{1}/_{40}$ $^{1}/_{200}$ $^{1}/_{2000}$ *iuga* of land,
1 $^{1}/_{10}$ $^{1}/_{300}$ *capita* of persons.
A *chorion* Borion, 2 $^{1}/_{4}$ $^{1}/_{70}$ $^{1}/_{1200}$ *iuga siue capita*: 1 $^{1}/_{2}$ $^{1}/_{70}$ $^{1}/_{1200}$ *iuga* of land,
$^{1}/_{2}$ $^{1}/_{4}$ *capita* of persons.
A *chorion* Donakous, 2 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{10}$ $^{1}/_{60}$ $^{1}/_{3000}$ *iuga siue capita*: $^{1}/_{2}$ $^{1}/_{5}$ $^{1}/_{40}$ $^{1}/_{200}$ $^{1}/_{750}$ *iuga*
of land, 1 $^{1}/_{2}$ $^{1}/_{3}$ $^{1}/_{24}$ *capita* of persons, $^{1}/_{3}$ $^{1}/_{100}$ $^{1}/_{1500}$ *capita* of livestock.
A *chorion* Kyaneai, 2 $^{1}/_{3}$ $^{1}/_{8}$ $^{1}/_{30}$ $^{1}/_{200}$ *iuga siue capita*: 1 $^{1}/_{15}$ $^{1}/_{75}$ *iuga* of land,
1 $^{1}/_{3}$ $^{1}/_{12}$ *capita* of persons.
A *chorion* Thrassa, $^{1}/_{3}$ $^{1}/_{240}$ *iuga*.
A *chorion* Ko…, $^{1}/_{5}$ $^{1}/_{60}$ $^{1}/_{1200}$ *iuga*.

[143] Σπάρτη Hiller. I take this to derive from the adjective σπαρτός = sown (land). Compare Mytilene, IG XII 2, 76. 9, χω(ρίον) Μάγδια σὺν σπαρτ(ῇ).

Despite the doubts of Jones (above, n. 2), 53 n. 46, the interpretation of the fourth column proposed by Déléage (above, n. 2) 191–192, is certainly correct: we have here figures for ζώ(ων) κ(εφαλαί), *capitationes animalium*, as in IG XII 3, 182.2. The *omega* above the *zeta* is absolutely clear in lines 4 and 8, and is an acceptable reading in lines 1, 2 and 5 (where Hiller's ΖΥΤ is an unfortunate misreading for ΖΚΓ′). In line 2, the abbreviation for κ(εφαλαί) is absent; I take this to be an accidental omission.

I do not signal all the numerous divergances from Hiller's text. The best guarantee of the new readings offered here is the fact that all eight running-totals for *iugatio siue capitatio* (lines 2–9) are now correct; contrast the tabulation in Déléage (above, n. 2) 193. Five of these running-totals work out precisely (lines 4, 6–9), and three have been rounded up or down by small fractions (line 2, rounded up by $^1/_{6000}$ of a *iugum/caput*; line 3, rounded up by $^1/_{1500}$ of a *iugum/caput*; line 5, rounded down by $^1/_{6000}$ of a *iugum/caput*).

The first total in line 1 is evidently intended to be the sum total of the *iugatio siue capitatio* of Heraklides' estate: 25 $^1/_3$ $^1/_{20}$ $^1/_{400}$ $^1/_{2000}$ *iuga siue capita*. We then have two further figures, one in *iuga* (10 $^1/_2$ $^1/_5$ $^1/_{24}$ $^1/_{200}$) another in *capita [humana] et animalium* (14 $^1/_2$ […]). These are clearly intended to equal the sum-total in *iuga siue capita* at the beginning of the line, and hence I restore the figure for *capita [humana] et animalium* accordingly: 14 $^1/_2$ [$^1/_8$ $^1/_{75}$ $^1/_{750}$].

These three sum-totals do not, however, correspond to the actual totals of the declarations listed below. The 10 individual *iugationes siue capitationes* ought to come to 25 $^1/_2$ $^1/_5$ $^1/_{70}$ $^1/_{240}$ $^1/_{2000}$; the 10 individual *iugationes* to 10 $^1/_2$ $^1/_4$ $^1/_{70}$ $^1/_{500}$ $^1/_{1200}$; and the eight *capitationes humanae siue animalium* to 14 $^1/_2$ $^1/_3$ $^1/_{10}$ $^1/_{60}$ $^1/_{1200}$ $^1/_{3000}$. In all three cases the real total is slightly *larger* than the putative sum-total given in line 1. We might hazard a guess at the reason for these discrepancies. In line 7, we find the fraction $^1/_{70}$. This is the only fraction in the text whose denominator cannot be expressed as the product of primes no larger than 5. Therefore it cannot under any circumstances form part of the total *iugatio* in line 1. It follows that in producing his sum-totals for line 1, the *tabularius* ignored certain fractions in the individual registrations; the totals therefore came out slightly small. I am unable to determine which fractions he chose to omit and why.[144]

One further point of interest ought to be highlighted. This is the only one of the tax-registers (apart from the Chios register, for which figures are lacking) which distinguishes between *capitatio humana* and *capitatio animalium*. Several of the *capitationes humanae* follow a regular numerical pattern: 1 $^1/_2$ $^1/_3$ $^1/_{24}$ *capita* (lines 4 and 8), 1 $^1/_3$ $^1/_{12}$ *capita* (line 9), $^1/_2$ $^1/_4$ *capita* (lines 5 and 7). This can hardly be a coincidence. I suggest that what we have here are nuclear households of tenant farmers, one family to each land-holding. The precise rate of assessment cannot be determined. exempli gratia: $^1/_2$ *caput* = adult male tenant farmer, $^1/_3$ *caput* = adult female, $^1/_4$ *caput* = boy, $^1/_{24}$ *caput* = baby. sed hoc est hariolari.

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[144] For this intractable fraction, we may compare the long entry for the decurion Tatianos in the tax-register of Tralles (Col. II lines 14–32). Here the fraction $^1/_{70}$ appears only once, in line 29; since it cannot be expressed as the product of primes no larger than 5, it persists into the sum total in line 32. Note, however, that the fraction $^1/_{70}$ appears twice in the entry for Kritias (lines 37 and 38), without a corresponding fraction $^1/_{35}$ appearing in the sum total at line 44.