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The Role of Slaves in Roman Land Surveying¹

Levente Takács*

The writings of ancient Roman land surveyors were preserved in a collection which is usually referred to as *Corpus Agrimensorum Romanorum* after the title of the edition published by Thulin at the beginning of the 20th century. Its first manuscript dates back to the 6th century.² This collection consists of several writings of different lengths and various contents. Hyginus or Siculus Flaccus, e.g., wrote lengthy discussions; however, the manuscipt also contains short fragments from different laws or geometrical treatises and reports of late Roman officials or clerks. We only have slight pieces of information on the personality or life of the authors, but some of their remarks make us think that they must have had practical or field experience in the background of their theoretical works. The writers of the land surveying treatises did some field work themselves; therefore, it is suprising that they do not mention any mechanical device or labour force in their works.

We know that they had highly developed equipment for sighting and levelling. These instruments were constructed by ancient engineers, like Hero of Alexandria. The instrument called "dioptra" was used for levelling or measuring angles. The hodometer could provide data on the distance that had been covered. These tools were applied for constructing channels, roads and aqueducts built very precisely even according to modern standards.³ The silence of the land surveying authors can be explained by the fact, that boundary measurement or the work of centuriation did not require expensive tools which might also have been quite difficult to operate. The principal instrument of land surveyors was

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² All dates are A.D. except when otherwise indicated.

³ O.A.W. Dilke (1971), 66ff. and M.J.T. Lewis (2001).

the groma which was used for surveying straight lines and right angles.⁴ In addition to *groma*, all tasks of surveyors could be fulfilled with some measuring rods and ropes or chains, but it was impossible to use them without servants or assistants.⁵

The source of assistants needed for work may be obvious as in the time of agrimensores Rome had an extensive slave system. Slaves formed a high proportion of the population while providing their productive capacity to their masters. The authors of the Corpus do not consider worth mentioning this type of labour force, though modern special litterature has detected the presence of slaves in Roman land surveying. One of the fundamental work registered fourteen civilian land surveyors from the first century, among whom eight were freedmen, three were imperial freedmen, one a slave and two of unidentifiable status. Brian Campbell enumerates forty-one inscriptions from the age of the Empire mentioning non-military surveyors. Among them there are eleven freedmen and nine slaves. ⁶ Taking into consideration the above data, the proportion of slaves or ex-slaves reaches or exceeds fifty percent, which seems to be quite high. Freedmen or slaves were fond of exhibiting their social rising by erecting inscriptions. That is why, freedmen and slaves - compared to their real number - are overrepresented on inscriptions. One of the land surveyors acting in Baetica provides us his full name and occupation as follows: Q. Iulius P.f. Gal. Rufus agrimensor. His underlying reason must have been his desire to differentiate himself from his colleagues of slave or freedmen status.

⁴ Hyg. 136.19-20C; 142.35-36C. *Lib. Col.* 176. 1-5.

We possess data from the technically quite similarly developed Hungary of the 18th century which show that simple tools were absolutely suitable to survey whole counties. The cadaster measurements ordered by King Joseph II were executed by county committees, which comprised three members with one member being an engineer. The committee was also joined by seven workmen, out of whom one was a scribe, two were busy with the management of poles, two with measuring chains and two with nails. A. Szántay (2008), 407-409.

O.A.W. Dilke (1971), 39 (referring to G. Wissowa and W. Kroll (1912) s.v. "Gromatici", col. 1891.). B. Campbell (2000), I., notes 150-151. Cf. also F.T. Hinrichs (1974), 158-162.

Based on their themes, there are two major groups of inscriptions to differentiate, namely those of tombs and the ones marking boundaries.⁷ Boundary disputes tell us about how disputes between private individuals or communities (or a combination of the two) were solved or settled. Inscriptions inform us mainly about border disputes between towns, which are part of public law. Inscription sources on land disputes provide us with plenty of examples where two neighbouring towns had border disputes with each other, and the governor of the province, the man holding the public power, asked a land surveyor for expert advice.⁸

The governors of the Empire made use of the engineering capacity lying in the Roman army to fulfil administrative or jurisdictional tasks. We have plenty of such examples from the Dalmatian territory. In provinces where there was less army at disposal, boundaries had to be established and boundary disputes had to be settled in a different manner. The procedure still fell under the supervision of the governor, but he could only make use of imperial slaves or freedmen to act as experts. In Numidia, there was an imperial slave called Peregrinus who set back the boundary stone between two settlements. The content of the inscription, along with the fact that Peregrinus is referred to as mensor, makes it clear that he was a land surveyor, just like Tiberinus, who set up the boundary markers of an African settlement in the position of the emperor's freedman.⁹

In the inscriptions dealing with boundary establishment, we can notice the dominant presence of soldiers. Besides them, a significant role was played by imperial slaves and freedmen, i.e. the members of imperial administration. In the above mentioned cases, the identification of land surveyors is mostly obvious as they had to establish boundaries. Nevertheless, our task is a bit more difficult with funerary inscriptions. They were erected by either the departed person or their relatives,

⁷ There are also some other types, *e.g.*, cadastral maps, but they are less significant from the point of view of land surveyors' social status.

⁸ In the opinion of S. Cuomo (2007), 114, the explanation is that former city-states, which lost their rights to have separate foreign affairs and warfare, wanted to enlarge their territory through claims against each other. Also cf. M. Kaser (1971), 375.

⁹ Peregrinus: A.E. 1983, 0944. Tiberinus: C.I.L. 8. 25988 2b. Cf. S. Cuomo (2007), 125; S. Treggiari (1969), 153.

friends or colleagues, and could record the name of the deceased person, their occupation or social standing. Although it is relatively easy to identify the social status of the deceased on the basis of the inscription, to identify the occupation of land surveyors is rather difficult because of terminology. In inscriptions, the word *mensor* was widely used, but it did not designate a land surveyor exclusively. We can find other *mensores* both in military and civil life, for example, *mensores frumentariorum* from Ostia or *mensores tritici* from the army. Considering all these, we must be extremely careful with certain inscriptions. The persons who defined themselves as *mensores* in inscriptions without any specification will be considered as land surveyors until we are provided some kind of contradictory information.¹⁰

The distribution of funerary inscriptions is highly similar to that of inscriptions establishing boundaries. The vast majority of inscriptions belongs to soldiers and persons from the *familia Caesaris*. The tombstone of T. Flavius Dapnus, erected by his wife, informs us that Flavius was a freedman of the emperor acting as *agrimensor* in Africa. He lived up to an old age, even up to ninety years. Many inscriptions of this kind have been excavated in Africa: Felix, Victor, Didymus and Romanus, for example, were imperial slaves and land surveyors. 12

A special case is that of Diadumenus, who was a freedman of the empress, and appears as *mensor* in the inscription he placed for his wife. His wife also belonged to Livia's household as a patcher (*sarcinatrix*). Similarly, the other *mensor*, called Ti. Iulius Pelagius, was also a freedman of Livia, whom she owned together with Tiberius, and was maybe an inheritance from Augustus. Although both Diadumenus and Pelagius belonged to the urban household of the empress, we cannot reject the idea that they might have had land measuring tasks. We know that

¹⁰ L. Takács (2013), 51-54, et passim.

¹¹ *C.I.L.* 8.12639. For the age of Dapnus cf. R. MacMullen (1982), 238.

¹² *C.I.L.* 3.2128; 6.8912; 8.12637; 8.12639; 8.12912-12913. Cf. F.T. Hinrichs (1974), 160-161.

¹³ C.I.L. 6.3988, and the far more fragmentary 6. 4244. Cf. S. Treggiari (1975), 51 and 56.

¹⁴ C.I.L. 6.8913. Cf. F.T. Hinrichs (1974), 160; S. Treggiari (1975), 56 and 75.

Livia's household comprised a great variety of slaves and freedmen of specialised occupations. Sometimes researchers have a difficult task when trying to explain how these people could continuously be assigned tasks. In the case of land surveyors, it does not cause any difficulty as Livia possessed large estates in Italy and in the east. These estates obviously demanded slaves with some land-measuring expertise.

An inscription was erected in honour of Felix who was a *mensor* and *servus publicus* in the City of Luceria. The inscription of Augurinus, erected by his father, Liberalis, was found in Sipontum, Apulia. Augurinus was denoted also as a *mensor* and *servus Rei Publicae*, while his father was a *servus arcarius* of the city who had administered the alimentation earlier. Surveys and registration of the lands and financial issues of a city, especially those of alimentation, were interrelated. It can probably explain the profession of Augurinus.¹⁷

We can find further data in the laws issued to provincial settlements; laws inferring that local administration required men skilled in land surveying. These laws included regulations on landed property or possession on the territory of the settlement. The law of the town of Urso, dating back to the age of Caesar, sets a prohibition on selling common lands, woods or buildings, and also sets a time limit for rental of five years. The law of the *Municipium Irni* says, in its rubric number 76, that it is the duty of the *duumviri* to make proposals to the town council on the examination of town boundaries, land and territories providing tax to the town. The examination was carried out by walking through these territories with the aim of detecting abuses.

There is only a limited number of inscriptions that can be attributed to a land surveyor independent from the state. What is more, the majority refers to a low social status. The name of Messius Stichus or Aristo itself

¹⁵ Also cf. K. Bradley (2002), 61-63.

¹⁶ S. Treggiari (1975), 48; Ch. Kunst (2008), 262-266.

¹⁷ C.I.L. 9.699 and 821; A. Weiss (2004), 40; F.T. Hinrichs (1974), 162.

denotes the status.¹⁸ Others would indicate their status of freedman¹⁹ or slave in words. Although only fragments of the name of a *mensor* from the city of Rome survived, we learn that he was the slave of a certain Volusius.²⁰

The exploitation of slaves as labour force in land surveying is attested by legislation as well. The 6th title in book 11 of Digesta is si mensor falsum modum dixerit. This chapter first discusses the responsibility of a land surveyor in cases when in reality the size of the plot to be sold does not correspond with the size provided by the land surveyor. After it defines the responsibility of the land surveyor for all bearings of the case, it also expands the scope of the law to include all those professionals whose job involves some kind of measuring (11.6.5.2. as well as 11.6.6. and 11.6.7.) The Digesta also discusses in detail what type of responsibility the use of a fulfilment partner could lead to. If the fulfilment partner acted in bad faith (dolo malo), the land surveyor had to bear responsibility as he had failed to take the necessary precautions when choosing a partner.²¹ This title mentions slaves once, but the interpretation of this fragment is very vague. Of the possible actions noxalis and de peculio, Pomponius decides upon the former, which is commented on by Ulpianus with a bit of scepticism by quamvis civilis actio de peculio competat.²² In both cases, the subject of the legal issue is how and to what extent is responsible the person excercising power for the contracts made by those being under his power. For us, it is important that Roman lawyers reckoned with the presence of slaves in the world of land surveying.

In addition, land surveying must have been a profitable business and occupation. The tombstone of L. Aebutius Faustus, found in the North of Italy, informs us that both him and his wife were freed, and Faustus was a *mensor*. Below the inscription, we can see the tools of his occupation, a

¹⁸ *C.I.L.* 1.1573; 6.9619, 9620.

¹⁹ A.E. 1939, 0147. In this particular case, as the inscription was found in Ostia, it is still doubtful if *mensor* really designates into a land surveyor.

²⁰ C.I.L. 6.9620; also cf. A.E. 1934, 0250.

²¹ Dig. 11.6.2.1; cf. A. Földi (2004), 302-303.

²² Dig. 11.6.3.6; A. Földi (2004), 138

aroma amongst others. On the two sides of the land measuring instrument, there are two fasces with protruding axes, which let us assume that Faustus was a sevir, an appreciated and recognised member of the local society. The grave stone, dating from the first century, also reveals that Aebutius and his wife were the possessors of at least one slave woman whom they freed. Besides all the above, the size and the elaboration of the stone also show that Aebutius was a relatively wealthy person, and probably his wealth originated from his land measuring activity.²³ The means of *mensores* are referred to in the inscription of Receptus and his son, who renovated and enlarged at their own expense the Roman shrine of Bona Dea Felicula Agrestis, which had been abandoned for a very long time and had been lying in ruins. All this was done pro salute Caesaris, which is not at all surprising as Receptus was Augusti libertus.²⁴ The cult of the goddess Bona Dea and her night celebration held yearly, which could be attended by women only, is well known because of the scandal caused by P. Clodius Pulcher.²⁵ The inscriptional sources related to the goddess indicate a less exclusive cult as both slaves and freed often appear among the offerers. In addition, it also turns out from inscriptions and reliefs that the goddess was worshipped in connection with agriculture as well.²⁶ Receptus, who was bound to land due to his job, may have chosen the shrine of the goddess for renovation for the above mentioned reason. The offering that Antiochus made together with some other slaves and freedmen to Mercurius Felix must have been of more modest means.²⁷

The financial growth of land surveyors and the fact that ex-soldiers were happy to undertake land-measuring tasks poses the question why there were a lot of freedmen and slaves who worked as *mensores*. The solution might be the question of supply of specialists. We have data on the lack of qualified work force from the time both of the Republic and

²³ C.I.L. 5.6786; cf. O.A.W. Dilke (1971), 39, 50

 $^{^{24}}$ A.E. 1980, 0053; on the financial means of freed slaves, cf. H. Mouritsen (2011), 109-118.

²⁵ Cic. Har. resp. 37; Plut. Caes. 9.

²⁶ C.I.L. 5.761; 6.68; 10.4615; cf. G. Wissowa (1899), 691-693.

²⁷ Degrassi *I.L.L.R.P.* 742; cf. S. Treggiari (1969), 99.

the Empire. Pliny as governor asks the emperor to send him a *mensor*, because his expertise would make it possible to gain money back *a curatoribus operum*. The emperor rejects the request by stating that he cannot spare any *mensores* in Rome or the works around the city (*iis operibus*).²⁸ The exact meaning of the word *mensor* is disputable in this case. Pliny asked Trajan either for an arhitect or a land surveyor, he might have done it because he was lacking trustworthy local specialists.²⁹ The lack of skilled labour force can explain the relatively reasonable incomes, but it remains unclear why we do not know more surveyors of free status. The epigraphic habit already mentioned may give some explanation for this lack, but we can detect other factors as well.

The problem of supply of specialists was most easily solved by the knowledge being passed on from generation to generation within the family. If there was no suitable person in the family, the lack could be eliminated by training the slaves. 30 Training the slaves and supplying them with work may have served further aims as well. The trained slave could make a higher income, and if he worked on his own, he could yield profit for his owner. If the owner gave part of the income to the slave, he could earn some *peculium*, which later may have enabled him to free himself. This, in turn, inspired his work as well. A further advantage was that the slave with expertise was more valuable than his fellow slaves. The famous lawyer Paulus, while discussing the dowry, says that to teach the slaves some trade is a useful expense. 31

Even if he was freed, he did not necessarily become a professional rival for his former owner, as *ius patronatus* provided a wide range of opportunities for the former owner to make further use of the work force of the ex-slave.³² It was not unique either for an owner to start a common business with his slaves or freedmen. Cicero also knew this practice and

²⁸ Plin. *Ep.* 10.17-18; cf. B. Campbell (2000), xlviii; F.T. Hinrichs (1974), 168.

²⁹ A. Burford (1972), 67.

³⁰ A. Burford (1972), 82-87.

³¹ Paul., *Dig.* 25.1.6.

³² A. Burford (1972), 51; K. Verboven (2012), 94.

objected to it.³³ We have many contracts from Egypt signed by the parties to educate slaves. Doctors, musicians, weavers etc. are mentioned in these contracts as slaves to be trained.³⁴ The time of apprenticeship usually lasted for two to four years, and the price for training depended on the type of the contract. According to one type of contract, the slave to be trained worked for his trainer who had some returns from the work of his trainee.

Slaves were turned into profit in this way since the times of Cato the Elder. He purchased young slaves, had them trained and, later, sold them at a higher price. The *Digesta* also mentions this way of making money. Paulus presents the example of a joiner (*faber*), who buys a slave to train him, then sells him at a higher price.³⁵ The example shown by Paulus can be considered parallel with that of land surveyors because the jurist includes this practice into the treatment of mandates as a legal institution. The joiner carries out the above mentioned activity *mandatu amici*. Originally, land surveying was also classified into this group of contracts by jurist writers.³⁶ Venuleius Saturninus, who was a renowned lawyer in the third century, divided the slaves into two categories. As he says: "A slave can be styled experienced, or a novice. Caelius says that an experienced slave should be valued, not on account of the time he has been in servitude, but because of his ability and qualifications."³⁷

The techniques and methods applied for measuring land were relatively simple: that is why quite young surveyors appear on inscriptions. The tasks of Roman land surveyors could be fulfilled without difficult instruments; so, the training of the surveyors had not taken up too much time. Their skill has been gradually gained through practice. Laches, who

³³ Cic. Par. 6.46.: cum servis, cum libertis, cum clientibus societates. Cf. S.R. Joshel (2010), 206-207.

³⁴ C.A. Forbes (1955), 329ff.

³⁵ Plut. Cat. Ma. 21; Dig. 17.1.26.8.

³⁶ Dig. 11.6.1.

³⁷ Venuleius *Dig.* 21.1.65.2; cf. Ulp. *Dig.* 19.2.13.3.

died at the age of 17, is referred to as *mensor* on his tomb stone.³⁸ T. Flavius Apsens who was a land surveyor according to his inscription, did not live long either; he died aged 26.³⁹ The above mentioned Augurinus from Sipontum did not live up to his 24th birthday. According to an inscription found in Pontus, the deceased person lived only 22 years, and he still presented himself as expert in land measuring and law. ⁴⁰

The young slaves, trained within a short time, could have been produced returns to their owner for a long period, while promoting their own liberation as well. To train a slave was not involved into the duties of an owner: it was only a possibility to exploit. The slave holders seem to have taken advantages of it regularly to make some profit. It could happen in the sphere of land surveying, too.

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³⁸ C.I.L. 6.6321.

³⁹ *C.I.L.* 8.12638.

⁴⁰ H. Malay and Y. Gül (1983), 283-284.

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