



New Insights on the Function of the Jerusalem »Agoranomos« (Market Inspector) in the Early Roman (= Late Second Temple) Period

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One of the important duties in the Hellenistic/Roman city was that of the market inspector (*agoranomos*). The position and functions of this person acting in the cities of the Land of Israel, as reflected in the Rabbinic literature, was described and discussed by Daniel Sperber (1977). Among the duties of this inspector Sperber lists: the inspection of the authenticity of weights and measures; control of the prices; inspection of the quality of the commodities presented in the markets; assurance of proper supply of merchandises and inspection over the import of goods. On the actual actions taken during the inspection of weights and measures Sperber could not elaborate, since he lacked at the time the required archaeological data. It seems that currently we have at our disposal some of these details, which enable to supplement the picture.

Several years ago the present author published a comprehensive study on the stone scale-weights which were in use in the Land of Israel in the early Roman (= the late Second Temple) period.¹ It dealt with a record of c. 600 items, the largest of its kind for any period in the history of the Land of Israel. Apart of the metrological discussion and conclusions it presented a few insights pertaining to the Jewish community in Jerusalem who used these weights. I emphasize Jerusalem, because 96 % of the weights dealt with in that study, with known provenance, originated from excavations in Jerusalem.² Since then, the continuing excavations in various locations in the city unearth additional weights, in rather large num-

¹ Cf. Reich 2015.

² Cf. *ibid.*, 220–222.

bers.³ In the following lines I wish to present some new insights pertaining to the subject, based on old as well as new data, which relate to the activities of the *agoranomos* of Jerusalem.

The traces left by the *agoranomos*'s actions upon many of the stone scale-weights are extant. Several details or rather phenomena point to it:

1. Traces of calibration with lead. In many cases the metal is still extant on the stones;
2. Inscriptions and various signs left incised upon the flat faces of the stones;
3. The state of preservation of the stones.

1. Traces of calibration

The clearest evidence for an action which was carried out on the stone scale-weights, which must be attributed to the local *agoranomos*, are the signs of calibration which was performed on a certain percentage of them. In case the entire traces of the action survived, one sees in the center of one flat side of the weight a small flattened lump of lead adhering to the stone. In cases in which the entire lump of lead fell off the stone, or was deliberately extracted, one will see one or several narrow and short small holes drilled into the stone, into which the molten lead was originally cast. This action was meant to complete the mass (weight) of the scale-weight according to the standard mass which was in current use. Unfortunately, I do not have in my disposal an original lump of lead which was found detached from its weight. I can only estimate that one deals here with 1–2 cc of lead on the average, which according to the specific weight of lead equal to some 10–20 grams on the average.

It should be noted that this addition of metal is quite similar between small or large weights (e.g. weight RB96 which weighs 83.03 grams, or weight RB99 which weighs 728.42 grams;)⁴. This raises the question what does this action represent? Has this action been performed upon new

³ On these I prepare currently a supplement-study in which the archaeological and metrological details will be published in due course.

⁴ Cf. Reich 2015, 92f.

weights which were just produced and examined by the *agoranomos*? As they were found missing a small amount of mass, the *agoranomos*, in his workshop, has completed it with lead and approved them for use; or alternatively, we deal here with weights which were in use for some time and were slightly defected, e.g. the weight fell down on a hard stone floor and lost a small fragment. These were returned to the *agoranomos* workshop who has completed their mass with lead.

In my original study⁵ I was at the opinion that all these weights were re-calibrated, as said in the second possibility mentioned above. However, the fact that these lead additions are of a similar magnitude seems to point to the first possibility mentioned. Therefore, I amend my definition: the lead lumps on stone scale-weight are not the sign of re-calibration but rather the sign of calibration, performed on the weight a short while before it left the office of the *agoranomos* for general use.

What was the range of this phenomenon of calibrating the scale-weights? In my corpus⁶ it was found that 87 items out of 565 (15.8 %)⁷ bore traces of calibration. To this we can add here a diachronic examination. The corpus shows that along a period of time which spreads along ca. more than a century before the sack of the city by the Romans (70 CE), there were in use four or five weighing systems which replaced each other.⁸ The earliest system comprised weights in the shape of a cube (System I). This system was replaced by weights in the shape of a flat cylinder (Weighing Systems II, III and IV⁹).

⁵ Cf. *ibid.*, 37–41.

⁶ Cf. *ibid.*

⁷ This figure includes weights from excavations and from collections. When the central part of a flat side of a weight is broken off and missing it prevents us of knowing if the weight was calibrated. This means that the percentage of calibrated weights was slightly higher (c. 16–18 %).

⁸ Cf. Reich 2015, 170–177. For a different view see: Kletter 2015.

⁹ Recently, more items are retrieved which point perhaps to a fifth weighing system (System V?). There are currently no data to date it within the late Second Temple period, but it seems to be related to Weighing System IV, which represent the last one that was used.

On the basis of the corpus of weights¹⁰ one can judge the distribution of calibrated weights among the various weighing systems, as follows:

Weighing System	Total number of weights in system	Number of calibrated weights in system	Percentage (%) of calibrated weights in the weighing system
I (cubes)	15	2	13.3
II	92	9	9.8
III	92	10	10.9
IV ¹¹	247	48	17.5
Total	496 ¹²	74	

As these weighing systems follow a chronological sequence¹³ an obvious conclusion is that the percentage of calibrated weights slightly increases with time. This seems to support the view that the enforcement of the market regulations by the *agoranomos*'s activity in Jerusalem grew steadily.

This action of calibration was carried out in the office or workshop of the urban *agoranomos*. The first action required a drill for small holes (3–5 mm in diameter; 5–10 mm deep, on the average). The second action required a small oven for melting lead, and some tools to pour it into the drilled holes. Finally, a hammer for flattening the lead upon the flat face of the weight was in use.

¹⁰ Cf. Reich 2015, 74–169. Regrettably, minute mistakes were discovered in numbers of weights attributed in the book to various weighing systems (e.g. on p. 202 to total of weights in Group 46 is given to be 44, while only 42 weights are listed). These are hoped to be corrected in a future article which will update the corpus.

¹¹ For Weighing System V? are currently known 45 items, of which 5 (11.1 %) bear traces of calibrating.

¹² The other weights include: weights broken beyond being reconstructed; weights not attributed through their mass to any weighing system; missing information on weights which were not located when the book was being printed.

¹³ Cf. Reich 2015, 175–177.

2. Inscriptions and incised signs

On a considerable number of weights short inscriptions and various signs appear. These were treated in my book. To these I would like to add a few new observations which seem to relate to the present subject.

- Upon 20 weights is incised a symbol in the shape of a stylized palm branch, or ear of corn.¹⁴ It was already observed that all these weights belong to Weighing System IV. I have already expressed a view that this symbol represents an *agoranomos* who has marked a group of weights and approved them for use. To this should be added a new observation, namely that none of these weights has signs of calibration with lead. This is further confirmed by one of the three weights bearing a palm branch sign uncovered at the Giva'ti Parking Lot not specified in my book¹⁵. One weight (No. 11) of those which bear the palm sign is calibrated with lead, and the lead is inserted directly into the centre of the palm branch sign. This implies that the calibration cancelled the validity of the incised sign. These two phenomena—calibration with lead and the palm branch symbol—seem to be correlative, meaning that one comes instead of the other, and they mark different actions carried out by the *agoranomos*.
- Nine weights bear the incised Greek inscription: BACIAEΩS (king) in various abbreviations.¹⁶ These are joined by weights bearing the sign L with additional letters, predominantly E¹⁷, all in all 36 weights. Also noteworthy for this group is that none of these weights bear signs of calibration with lead.
- There are additional weights which bear various incised signs.¹⁸ Only on two items (RB66, EIM27) out of more than 30 items there are traces of calibration.

¹⁴ Cf. *ibid.*, 56–60.

¹⁵ Cf. Zilberstein et al. 2013, Table 10.1; Weights Nos. 11, 18 and 26 and Table 10.2 with respective numbers.

¹⁶ Cf. Reich 2015, 41–47.

¹⁷ Cf. *ibid.*, 54–55.

¹⁸ Cf. *ibid.*, 65–69.

- Only three weights are known which bear private names. These are two weights from the Jewish Quarter which bear the name QTRS (Qatros)¹⁹, and one weight from the City of David bearing the name YHOSP (Joseph)²⁰. The last weight mentioned bears also signs of calibration. One should assume that these inscriptions were incised by the private owners of the weights and not by the *agoranomos*. On the contrary, it seems that the incision of any sign on a weight was the prerogative of the *agoranomos*, and that these private names were probably added without permission. This explains the few instances of private names on the weights (3 out of 600).

From these observation it seems that weights which bear signs of calibration with lead, do not bear inscribed signs or inscriptions. This might indicate that inscriptions and signs (except of private names, which are rare) were carried out by the *agoranomos* right away after the weight's mass (weight) was authorized. Calibration was performed shortly later, by the *agoranomos* as well, on weights which did not meet the standard in the first examination.

3. The state of preservation of the weights

In my book I have presented information on the physical conditions of each weight.²¹ This state of preservation of the weight is the ratio between the actual mass (weight) as it was obtained by weighing the stone on a modern scale, and its original mass, before it was damaged, which was calculated for the original weight.²² The original mass of a weight which was severely damaged, and only half of the original object or less was extant, was not reconstructed. I am at the opinion that the state of preservation of a weight also testifies to the actions of the local *agoranomos*.

¹⁹ Cf. Reich 2015, 64f.; Geva et al. 2016, 116f.

²⁰ Cf. Reich 2015, 64f.

²¹ Cf. *ibid.*, 32–37.

²² Cf. *ibid.*, 22f.

A stone scale-weight could be damaged through one of the following mis-haps:

- It could have been dropped by chance by the owner, and fall to a hard stone floor. One can assume that in this case the stone might have lost a stone splinter. Such a weight is not meeting its function, since it acts against the interests of the client. If the damage was slight, say of several grams, such a damage when not apparent could be ignored. If the splinter was distinct the stone could be re-calibrated with a piece of lead by the *agoranomos*. It is not conceivable that a chance dropping of a stone would have caused its breaking in two large pieces.
- It could have been hit by a collapsing stone-built wall. In the period discussed here this happened when the city of Jerusalem was sacked and destroyed by Rome in 70 CE. And indeed on several weights are traces of soot, caused by the fire which was burning in the destroyed houses. One can assume that in this event a few stones which were directly hit by stones of a collapsing wall were broken.
- Deliberate breakage of weights, using a hammer (see below). A deliberate breaking of a weight might have been done right after it was disqualified for use by the *agoranomos*, either because it was lacking mass due to the loss of a splinter of stone, or since it was not compatible anymore with the weighing system which was in current use in the city, since it belonged to an outdated weighing system. A weight which was examined by the *agoranomos* and found not meeting the standard of the weighing system in use, was deliberately broken, and its fragment thrown to the dump.

The following examination is made in order to establish the part taken by the weights which were not preserved well (50 % or less of the original object). The following large groups of weights were examined.

3.1. The Jewish Quarter Excavations (N. Avigad Excavations)

The 168 weights retrieved from the Jewish Quarter excavations present the following picture:

- 132 weights (78.6 %) are weight in the best condition of preservation (up to 5% loss).
- 27 weights (16 %) are weights in the median state of preservation (between 51–95 %).
- 9 weights (5.4 %) are weights preserved to a degree of 50 % or less.

3.2. Near the Temple Mount (B. Mazar Excavations)

The 82 weights retrieved from Benjamin Mazar's excavations²³ present the following picture:

- 53 weights (64.6 %) are weight in the best condition of preservation (up to 5% loss).
- 23weights (28.0 %) are weights in the median state of preservation (between 51–95 %).
- 6 weights (7.3 %) are weights preserved to a degree of 50 % or less.

3.3. Near the Temple Mount (R. Reich and Y. Billig Excavations)

The 103 weights retrieved from Ronny Reich and Yakov Billig excavations²⁴ present the following picture:

- 60 weights (58.3 %) are weight in the best condition of preservation (up to 5% loss).
- 30 weights (29.1 %) are weights in the median state of preservation (between 51–95 %).
- 13 weights (12.6 %) are weights preserved to a degree of 50 % or less.

²³ Excluding 9 weights which could not be examined in this respect.

²⁴ Excluding 2 items which were found not to be weights.

3.4. Weights from the Stepped street in the Tyropoeon Valley (J. Uziel, N. Szanto, M. Hagbi, A. Levi Excavations)²⁵

The excavation which is being carried out of the stepped stone paved street since 2013 along the Tyropoeon Valley²⁶ has unearthed a considerably large amount of stone scale-weights of the type and date dealt with here. The following lines will relate only to the state of preservation of these weights, and its possible meaning.

- A total number of 171 cylindrical weights were studied.
- Of these 87 weights (50.9 %) were preserved entirely or almost entirely (95–100 %).
- 27 weights (15.8 %) are of a median state of preservation (50–95 %).
- 57 weights (33.3 %) are of an inferior state of preservation (less than 50 %).

These figures should be compared with those obtained for weights found in other parts of the lower city, as can be seen in the following table:

Excavation	100–95 % preserved		95–50 % preserved		less than 50 % preserved		total in excavation area	
	N	%	N	%	N	%	N	%
Giva'ti Area Ben Ami & Tshekhanovetz ²⁷	23	67.6	10	29.4	1	2.9	34	100
Giv'ati Area Shukron ²⁸	7	53.8	4	30.7	2	15.3	13	100
Tyropoeon Reich and Shukron ²⁹	13	72.2	2	11.1	3	16.6	18	100

²⁵ I would like to thank my young colleagues Joe Uziel, Nahshon Szanton, Moran Hagbi and Ari Levi for the invitation to study the stone scale-weights from their excavation, and for the permission to publish here, in the table, the details concerning the preservation of the weights.

²⁶ Cf. Szanton et al. 2019; Levy 2019.

²⁷ Cf. Zilberstein et al. 2013.

²⁸ Cf. Reich 2015, 143–146.

Stepped street Uziel, Szanton, Hagbi and Levi ³⁰	87	50.9	27	15.8	57	33.3	171	100
Eastern slope Reich and Shukron ³¹	4	25	9	56.2	3	18.7	16	100
Eastern slope Gadot ³²	–	–	1	–	1	–	2	100

Several outstanding phenomena which relate to this group of weights were observed:

a) Number of weights:

- The area of the stepped street produced a very large number of weights. Indeed, the number of items is proportional to the size of the excavated area (better: the volume of excavated debris), and yet it stands out in size.
- The eastern slope of the hill, where the city dump is identified³³ produced a very low number of items. Especially low is the number of weights unearthed by the Yuval Gadot expedition.

b) The number of weights with a bad state of preservation (50 % of the weight or less):

- The number of these weights in the Stepped street area is extremely large (c. 33.3 %). On the other hand the number of these weights in the Giva'ti area, which is adjacent and to the north of it, is extremely low (2.9 %). Another excavation was carried out here which shows a similar picture: Eli Shukron discovered 13 weights, of which 2 are bad preserved (15.3 %). Taken together, in the Giva'ty area, out of a total of 47 weights (6.4 %) are bad preserved and this figure is far less than the 33.3 % found for the stepped street.
- The figure obtained for the stepped street (33.3 %) is also far larger than that obtained for the eastern slope (identified as the city-

²⁹ Cf. Reich 2015, 147f.

³⁰ Cf. Reich (in preparation).

³¹ Cf. Reich 2015, 142–144.

³² Cf. Reich (in preparation).

³³ Vgl. Reich et al. 2003; Gadot 2016.

dump). When the two digs carried out here are taken together (that of Reich and Shukron, and that of Gadot), we deal with a total of 18 weights of which 4 (22.2 %) are of the bad preserved type. In addition the total number of weights (18) is quite low against the four areas excavated along the Tyropoeon (236 items). The questioned raised is why is that so?

- There is no wonder that the figure of badly preserved weight found in the Upper City (Nahman Avigad's excavations) obtained for the Upper City (5.4 %) is low, because that area was a main domestic area in the city, and the residents took special care for their household objects. On the other hand the figures of the public areas close to the Temple Mount show a different picture. The badly preserved stones in the Benjamin Mazar excavations amount to 6 weights (7.3 %) of the total retrieved, and those of the Reich and Billig excavations amount to 13 (12.6 %) of the total retrieved. These figures, too, are considerably lower than those obtained for the stepped street (33.3 %). These differences call for an explanation.

It seems that an interpretation of these observations and numeric figures are related to the urban nature which is crossed by the stepped street. Before any excavations were carried out in this area, archaeologist saw this area, the »Lower City«, as a retarded area of the city. In this fashion Michal Avi-Yonah has reconstructed it in the renowned »Holy Land« model of Jerusalem (Tsafrir 2011; Amit 2009), now at the Israel Museum premises. The excavations carried out by Shukron and Reich (2008) have shown that the houses in this area were decorated with the best pieces of architectural ornamentation. As the ornaments were carved in stone and not created in the *opus albarius* (stucco) technique reserved for private houses, one has to conclude that the houses facing the stepped street were public buildings. The recent excavations have exposed a considerably large part of the street³⁴, and added much new information to the grandeur of this area.

The waste of deliberately broken stones scale-weights, in a considerable large number, point in my opinion to the proximity of the office and workshop of the local *agoranomos*, somewhere along the stone paved stepped street. In the courtyard of the house accumulated the waste of

³⁴ Cf. Szanton et al. 2017; 2019.

broken scale-weights. When the house was destroyed with the entire city in 70 CE, this waste was dispersed in the close vicinity.

4. A volume measuring table

Recently (October 2019), was discovered in the excavations of the stepped street in the Tyropoeon Valley a volume-measuring table made of stone.³⁵ It was found among stones and debris collapses which cover the stepped street which runs along the valley. It resembles in some details a device found in 1970 in the Jewish Quarter excavations,³⁶ but in some details it is more elaborate. In any case these devices made of stone are very rare in comparison to the abundance of stones vessels which typify the period under discussion, and particularly Jerusalem. For the present discussion it is sufficient to say that such a device was in the service of a local *agoranomos*, and its presence in this particular location strengthens the notion that the office and workshop of the local *agoranomos* was located in close proximity.

Agardamis / Gardi'im

For the notion that in the southern part of Jerusalem there was an office and workshop which handled matters concerning weights and measures of volume, which is a matter in the responsibility of the local *agoranomos* one can find, perhaps, a supporting evidence in the Rabbinic writings. The Tosefta has the following description:

»[...] until the moment that two *gardi'im* came from the Dung Gate and testified in the name of Shema'ya and Avtalion that three *logs* of drawn water disqualify the *miqweh*, and the Sages have accepted their verdict.«³⁷

In another place I have suggested³⁸ that *gardi'im* (*gardi* in the singular form) mentioned here, which usually means ›weavers‹, seems meaning-

³⁵ I would like to extend my thanks to the excavator, Ari Levy, for showing me the device. Its details will be published in due course by the excavator.

³⁶ Cf. Reich et al. 2011–2014.

³⁷ Tosefta Eduyot 1, 4; Zuck. 454f.; my translation RR.

³⁸ Cf. Reich 2013, 32f.

less in the current verse, since what has a weaver to do in matters of specific volumes of water? I suggested that a word close in form to *gardi/gardi'im* is *agardamis*, which is a corrupted transcription of the Greek *agoranomos* (BT *Bava Batra* 89a; *Avoda Zara* 58a; *Bava Qama* 98a, and more). I suggested that there is more sense in the testimony of persons whose responsibility were weights and volumes, to testify on the volumes of *miqwa'ot*.

Now I would like to draw the attention that this *agardamis* or *gardi'im* are located near the southern edges of the city, namely near the Dung Gate. A gate named Dung gate is not mentioned in the historical record of the late Second Temple period. Such a name is mentioned in the OT (Neh. 2, 13; 3, 14; 12, 31). According to these biblical descriptions, the gate was located on the southern perimeter of the city. The name, most probably continued to be in use through the Hellenistic and Early Roman (= late Second Temple) period, and its location in the south continued even if the ancient city-wall was replaced by the Hasmoneans with another wall. In any case, the street under discussion leads due southwards and ends, most probably, in one of the city gates. This might have been the Dung Gate. In this case, these details might support the notion that somewhere along this stepped street was located the office and workshop of the local *agoranomos*.

5. Summary

Daniel Sperber³⁹ complained that there is insufficient available epigraphic material pertaining to the office of the *agoranomos*. Since then, an important discovery was made: the volume measuring table of standards (*sekoma*) at Maresha⁴⁰, and its inscription. It mentioned a date, the title *agoranomos*, and two names in Greek, of persons who bore the title. Interesting to note that for a city which was certainly smaller than Jerusalem, the position was taken by two persons.

It seems that in the southern part of the city of Jerusalem, facing the main street, was located the office and workshop of the local *agoranomos*.

³⁹ Cf. Sperber 1977, 243, n. 70.

⁴⁰ Cf. Finkielsztein 1999.

It was not the place where stone scale-weights were produced, but the place where they were examined, calibrated, authenticated, and occasionally disqualified and broken, in order to prevent any misuse. It seems that the archaeological record unearthed here in various ways adequately supports this supposition.

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