

# WIENER ZEITSCHRIFT

FÜR DIE

# KUNDE DES MORGENLANDES

HERAUSGEGEBEN VON

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REDAKTION:

VERONIKA RITT-BENMIMOUN

105. BAND

WIEN 2015

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IM SELBSTVERLAG DES INSTITUTS FÜR ORIENTALISTIK

WIENER ZEITSCHRIFT FÜR DIE KUNDE DES MORGENLANDES

105

2015

# The Lexical Origin of Traditional Measure and Weight Units in the Colloquial of Hebron District

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A considerable number of traditional terms to denote units of measurement and weight are used in the colloquial of Hebron district. This terminology has been essentially used by people living in that area to measure quantities, to perform commercial transactions (including bartering and trading with money), to distribute agricultural and animal products, and in the buying and selling of land. This paper will provide an ethnographic and comparative lexical study of each term for the units of measurement. The ethnographic section will provide a definition of each unit in terms of its numerical value, and the measured materials or objects. The comparative lexical section will trace the etymology, meaning, and the appearance of each term in the ancient Semitic and non-Semitic languages that were predominant in the area of study. This study is an attempt, firstly, to document these units as it has become apparent that many of them are dying out as they were being replaced with the modern metric and imperial systems. Secondly, it attempts to trace the lexical origins of these terms, since it has also become apparent that many of these units have counterparts, and sometimes even originated in the ancient Semitic and non-Semitic languages.

## Factors involved in the development of the terminology

It was observed that these units are an outcome of contact between man and his natural and cultural surroundings. Many factors played a role in the creation of the names of these units.

- The role of agricultural activities (ploughing, farming, harvest, and storage) and the agricultural environment of the area have significantly affected the nomenclature of the units due to: 1. The amount of land which could be ploughed during the day by a pair of oxen, cows (cf. *faddān*) or by a single animal such as donkeys and mules (cf. *ṣarḥa*). 2. The different types of agricultural produce like grain, vegetables and fruits, and liquids like oil, vine syrup and milk, as it was noticed that some of the units of measurements were applied only to a specific kind of crop (*tanaka* for measuring olive oil and *sidsiyya* for measuring grain on the threshing floor). With regard to measurements of weight, the seeds of plants, which were available in the surrounding areas, were harvested, dried up and used as a standard measurement to weigh very tiny things (cf. *qirāf*).
- The role of household utensils and tools was significant as most of the units of measurement of this type were derived from this context. The names used to refer to the vessels used for transport, distribution, division and storage of agricultural

products were borrowed and then used to refer to a unit of measurement (cf. *madd*, *ṣā'*, *kēla*). Tools used for hunting were also borrowed to refer to a unit of length (cf. *sehim*).

- Human anatomy is very common in the etymological derivations of length measurements. The colloquial of the Hebron district made extensive use of linear units of measurement which were derived from the length of human body parts, and applied to measure surfaces. Presumably, a man of average size was chosen in each community and his body parts were used as the standard units of length (cf. *bā'*, *dirā'*, *šibir*, *fitir*, *qabza*, *iṣba*).
- Cultural contact, trade and interaction with the surrounding areas in different periods played an important role. The colloquial measuring system in the area of study is a combination of Arabic, Semitic, Greek and Latin metrology which was borrowed and adapted for the commercial sectors. The adaptation of this system was to facilitate trade with neighbouring lands. Even if the locals had their own metrological system, they would not have used it in commercial relations with traders of neighbouring communities, because the local system would not have been known outside of their specific area. Therefore, to enable somewhat problem-free trading, locals used this terminology for their own units. (cf. *qunfār*, *iwqiyya*).
- Fractions of ordinal numbers were used for measuring and weighing (cf. *uṣur*, *sudus*).

#### Classifications of the units

The units treated here represent absolute and non-absolute values. They were supposedly used among the people who were in full agreement on the values they represent. Their counterparts in the lexica and dictionaries appear to be unagreed upon and different in value from area to area, language to language and from one period of time to another. We have collected 28 units which are divided into three groups: 1. Measurements of capacity for dry and liquid substances. 2. Measurements of length and 3. Units of measurement for area and land surfaces.

#### 1. Measures of capacity for dry and liquid substances

This section includes all units of measuring the capacity for dry and liquid substances that were used in complete and mutual agreement among the members of the city and rural communities of the area of study. The units of this kind are adaptations of the Semitic and non-Semitic metrological systems. Local Traders and farmers used this system which is composed of 13 units of relatively accurate values to fulfill their needs for division of goods and trade of the agricultural crops either through bartering or a monetary system. Specific household utensils which were used daily were chosen to be measures (cf. *sidsiyya*, *tanaka*, *ṣā'*, *madd*, *nusṣiyya*, *rub'iyya*, *kēla*). In other cases units from Greek-Latin metrology were

adopted (cf. *qunfār*, *raṣl*, *'iwqiyya*). The third part was either derived from fractions (cf. *tumniyya*, *'uṣur*) or from grain (cf. *qīrāṭ*).

**1.1 qunfār: qanāfir:** A measurement of weight for dry and liquid substances equal to 300kg. This term was often used by peasants to measure their products such as grain, hay, fruits and olives. According to Dalman IV 276, the *qunfār* unit was 256kg in the north of Palestine and 288kg in the south (cf. Dalman IV 214, 216; VI 350) | JBA *qineṭerā* n.m.sg. (< Gr *χεντηνάριος*, Lat *Centaurēn*<sup>1</sup> > Ar *qinnfār*) "centenaries, a weight" (DJBA 1014). JPA *qyntynr*, *qyntr* n.m.sg. "centenaries, a unit of weight", "equivalent to 100 Roman pounds" (DJPA 491). Sy *qanfīrā* n.m. "hundred weight" (SL 1382; SD 510). MH *qineṭir* n.m. "a centenar, a hundred thousand sesterces, a weight", "centenarium" (DTT 1389-1390). Gr *χεντηνάριον* "a unit of weight", *χεντηνάριος*, " = Lat *centenarius*, an official drawing a salary of 100,000 sesterces" (GEL 939). Lat *centenarium* n.m. "a hundred (Roman) pounds in weight" (OLD 298). CAr *qinfār* "a standard weight or measure, four thousand *dinars/dirhams* or 1200 *'iwqiyya*", "a hundred pounds, a hundred *riṭl* of gold or silver"<sup>2</sup> (AEL 2569). EArD *qinfār* "measure of weight equal to 44.93kg" (EAD 719).

**1.2 sidsiyya: sadāsī/sidsiyyāt:** A cubic tin vessel used to measure quantities of grain after threshing. The measurement equals between 18 and 20kg | Akk *šadāšiu* num. "sixth"<sup>3</sup> (CAD Š/1 38; AHw 1123). Ug *tdt* ord. num. "sixth" (DUL 900). EpHeb *ššy*<sub>2</sub> ord. num. sg.abs. *ššy* "sixth" (DNWSI 1197). BH *šišī* ord. num. "sixth" (HAL 1666). MH *šetūt* n.f. "one-sixth" (DTT 1637). JBA *šetūtā* num. "sixth" (DJBA 1184, 1141). JPA *štwf* num. "sixth" (DJPA 568). Sy *šūtetā* num. "one-sixth", *šūdšā* n.m. (< Ar *sudus*) "sixth" (SL 1520, 1541). CAr *sudus* "the sixth part", *sadīs*, *sudus* "a measurement for weighing dates" (AEL 1332). SArD *sedis* "un sixième, la sixième partie" (DAFDS 339). EArD *suds* "one-sixth, sixth part" (EDA 405). Eth *sadus*, *sadās* "the sixth day", *sādēsāwi* "sixth" (CDG 486-87).

**1.3 tanaka: tnāk:** A square metal or tin vessel with a wide mouth or a small opening and lid. It can contain between 18 to 20l and is used to measure oil and vine syrup (cf. Dalman I/1 71; III Abb 49; VI 50; VII 113, 231, 239). It is also used for storing olive oil or transporting water or other liquids | Turk *teneke* "tin plate, a tin vessel, brass in thin sheets", *tung* (< Per *tung*) "a jar, a jug with a short

<sup>1</sup> "centner, ein Gewicht, eine Münze" (LW 532-33).

<sup>2</sup> For the different kinds and values of this unit in the Islamic world, see (Hinz 1955:24-27), (AEL 2569). This unit is the largest weight measurement borrowed from the Gr *χεντηνάριος* and Lat *centenarium* through Aram *qyntynr* (AFA 203).

<sup>3</sup> Cf. Akk *šiddatu* I "ein Behälter, ein Kasten, ein Holzgefäß" (AHw 1230). JBA *šiddetā* n.f. "chest, box" (DJBA 1132). Sy *šedā* n.f. "apot with two handles" (SD 561), "vessel of service" (SL 1513). MH *šiddetā* n.f. "chest, box" (DTT 1558).

neck and narrow mouth" (TEL 602). Per *tung* "a narrow-necked vessel, a chalice", *tang* "package, bundle, sack" (PED 330).<sup>4</sup> SARd *tanak* (< Turk *teneke*) "fer blanc, une boîte de fer blanc", *tanake* "objet de fer blanc" (DAFDS 94-95). EARd *tanaka* "metal pot used for brewing Turkish coffee" (EAD 139). ADDR *tanake* "Kanister" (Seeger 2009, 2 36).

1.4 *ṣā'*: *ṣā'āt*: A cylindrical vessel made of copper or wood and covered by metal sheets > a dry unit of measurement for barley, wheat and corn weighing roughly 12 to 15kg<sup>5</sup> or 15 to 16ℓ (Dalman 1905:36), (cf. Dalman I 583f.; II 48, 149, 181, 206; III 150; VI 22, 47) | Ug *ṣ'* n.m. "plate, wide bowl, platter" (DUL 776). Syll. Ug *ṣa-i* "basin, bowl" (Huehnergard UVST 170). OffAram *ṣ'* n.m.pl.abs *ṣ'yn* "dish, plate" (DNWSI 971). JBA *ṣā'ā* n.f.sg. "plate, dish" (DJBA 969). Sy *ṣā'ā* "dish, plate, low bowl" (SL 1295), "measurement for fruit" (SD 482). MH *ṣā'ā* n.m. "plate, dish", *ṣū'āh* n.f. "banqueting dish, plate" (DTT 1293, 1268). Eth *ṣəwvā'* "cup, goblet, chalice" (CDG 566). CAR *ṣā'* "a specific measurement for corn equaling approximately four *mudd* (five pints and a third in Baghdad), each *mudd* equals a pint and a third in the Hejaz, or eight pints in Iraq where the *mudd* was originally two pints"<sup>6</sup> (AEL 1746). (< Aram *ṣ'* cf. AFA 204f.).

1.5 *madd*: *mdād*: A cylindrical wooden container plaited with tin or metal sheets > a dry unit of weight weighing 12kg and was commonly used for measuring grains such as barley, lentils and wheat<sup>7</sup> (Dalman II 182; cf. *medd* III 150, 156). In Jerusalem, the *medd* equals eight *ṣā'* or 100ℓ (Dalman 1905:36). Around 15kg, or 2 *ṣā'* in the area of Tiberias (Sonnen 1927:205, Anm. 1) | Syll Ug *ma-ad-da-tù* n.f. "measurement" (Huehnergard UVST 145). Ph *mdh<sub>1</sub>* n.m.sg.cs. *mdt* "measure". Pun *mdh<sub>1</sub>* n.m.sg.abs. *mdt* "measure", sg.sc. EpHeb *mdh<sub>1</sub>* sg.abs. *mydh*. Palm *mdy<sub>1</sub>* n.m.sg.emph. *mdy'* (< Gr μόδιος) "dry measure, *modius*, bushel (8 to 9ℓ)" (DNWSI 595-96). BH *middāh* I n.f. "measure" (HAL 547). MH n.m. *middāh*, *mīddā* n.m. "measure" (DTT 732). JBA *mōdyā* n.f.sg. "measure for grain" (< Gr μόδιος, Lat *modius*)<sup>8</sup> (DJBA 645). Sy *mōdyā* n.m. "*modius*, peck", "a Roman measure for corn of 8.75ℓ or nearly eight quarts" (SD 256), n.m.sg. "corn measure, peck" (SL 721f.). SA *mdh* n.f. "measure" (DSA 452). CAR *mudd* "a measure of corn equal to a pint and one-third of the Baghdad standard measurement. In the Hejaz it equals one-quarter of a *ṣā'* (= 5 pints and 1/3 or 8 pints)"<sup>9</sup>

<sup>4</sup> Cf. Per *tankara*, *tankira* "a copper boiler, cauldron" (PED 329).

<sup>5</sup> Its value equals to 12 to 15ℓ in the Negev (Shawarbah 2012:430), in Jerusalem 12.5ℓ (1/5 of the *middā*) (Dalman 1905:36).

<sup>6</sup> For more on *ṣā'*, see Hinz (1955:51).

<sup>7</sup> It equals 13 to 14.5kg as a daily payment for the tenants ploughmen and harvesters (Dalman III 14, 101f., 107). Cf. also Sonnen (1927:326-27).

<sup>8</sup> "ein Getreidemaß" (LW 324).

<sup>9</sup> On the *mudd* in the early Islamic period in different areas and periods, see (Hinz 1955:45-46).

(AEL 2697). SARd *medd* “measure de capacité” (DAFDS 781). Lat *modius* n.m. “a measuring vessel of standard size”, “a Roman dry measure consisting of sixteen *sextarii*, a peck” (OLD 1123). Gr μόςτος “dry measurement, a vessel”, “measure of length” (GEL 1140). (< Aram *mōdyā* AFA 206).

1.6 *nuṣṣiyya* (< *niṣfiyya*): *naṣāṣī*, *nuṣṣiyāt*: A metal cylindrical vessel with a narrow mouth and high neck for measuring oil and syrup equals 8 to 10ℓ | Ug *nsp* n.m. “half (a shekel)” (DUL 647). EpHeb *nsp* n.m.sg.abs. *nsp* “a specific unit of weight ranging from 8.68 to 10.85g, “a *nsp* of royal standard weight” (DNWSI 754). Ph *nsp* n.m. “unit of weight (shekel)” (PPD 335). ŠARd *nuṣṣiye* “une demi bouteille (de vin)” (DAFDS 831).

1.7 *rub'iyya*: *rub'iyyāt*: A square or cylindrical metal vessel<sup>10</sup> with a high neck and a narrow mouth used for measuring liquids such as kerosene, oil and vine must. It was equal to 4 to 5ℓ or a quarter of each value or of one *medd* (Sonnen 1927:205, Anm. 1). In Jerusalem, it was one-sixteenth of the *medd* which equaled roughly 6.25ℓ (Dalman 1905:36) or sometimes half a *ṣā'* in villages around Hebron | Akk *rebūtu* “one quarter” (CAD R 224-226), *rebū* “Viertel” (AHw 964f.). Ug *rb't* n.f. “quarter (of shekel)” (DUL 730). Ph *rb'₃* n.m.sg.abs. “a quarter, one fourth”. Pun *rb'₃* n.m.sg.abs. *rb'* “a quarter”. EpHeb *rb'₃* n.m.sg.abs. *rb'y'* on coins “quarter, fourth”. OldAram *rb'* n.m.pl.cs. “quarter”. OffAram n.m.sg.abs. *rb'*, sg.cs. *rb'* “a quarter (of mina of the land)”. Nab n.m.sg.abs. Plam n.m.sg.abs. *rb'* “one quarter of any weight unit (silver/shekel/coin). Samal *rb'h₁* n.f.pl.cs. “quarter” (DNWSI 1055-58). JBA *rēbī'atā*, *rēbī'tā* n.f.sg. “one quarter of a *log* (liquid measure)”, *rībe'ā* n.m.sg. “quarter (of a weight)” (DJBA 1057, 1073). BH *rēba' I* “a quarter” (HAL 1180). MH *reb'ī* n.m. “fourth, one-fourth of a *log*” (DTT 1443). JPA *rwb'* n.m.sg. “quarter of a *qab*” (DJPA 517-18). Sy *rab'ā* n.m. “measure”, *rīb'ā* n.m. “a quarter” (SL 1430, 1443). CAR *rub'* “one of four parts, a quarter”<sup>11</sup> (AEL 1017, 1065). EArD *rub'a* “one quarter of a *qadaḥ*” (EAD 324). SARd *reb'iye* “un quart de *temniye* ou 1/32” (DAFDS 268).

1.8 *raṭl*: *rṭāl*: A dry and liquid unit of weight equaling 3kg/ℓ used for measuring grain, sugar, salt, rice and oil. It was widely used in different areas of the Near East during the Middle Ages and had different values in each location.<sup>12</sup> In Jerusalem, it equaled 2.88kg (Dalman 1905:36), or between 2.56 and 2.88kg (Dalman I 584; II 182; V 55, 66; IV 107, 145f., 243, 251, 278, 346) | Ph *lṭr* n.m.pl.abs. *lṭrm* (< Gr λίτρα “specific weight of 330g”). Pun *lṭr* n.m.pl.abs. *lṭr* “specific weight of 330g” (DNWSI 574). JPA *lytrh* n.f.sg. “Roman pound”, and metathesis

<sup>10</sup> Cf. Sy *rabū'ā* “dish, four-cornered flask” (SD 526), *rabū'ā* n.m./f. “hollow dish”, *rabū'tā* n.f. “dish, plate” (SL 1426). CAR *rab'at* “a small round basket covered with leather, a chest”, “a four-sided vessel” (AEL 1017, 1065).

<sup>11</sup> See (Hinz 1955:50-51), (AEL 1017).

<sup>12</sup> The *raṭl* of Ramla was 2.52kg; the *raṭl* of Acre-Tiberias was 2.71kg (Ashtor 1982:474-479). For the diversity of the *raṭl* value in the Islamic world, see (AEL 1102), (Hinz 1955:27-33).

via *rīḥ* n.f. (< Gr λίτρα), *ryḥ* n.f.sg. "Roman pound" (DJPA 281-82, 523). Sy *reḥl*, *rīḥl* n.m. "a pound weight, one pound, a measure" (SD 241, 539), *līḥrā* n.m. "Roman pound", *rīḥl* "pound" (SL 688, 1461). MH *līḥerā* n.m. "the Roman Libra, a pound, a measurement of capacity divided into 12 *unciae*", (DTT 706, 1474). Eth *raḥar* "measurement of weight"; *laḥr*, *laḥr*, *laḥara* "weight, measure" (CDG 476, 320). Gr λίτρα "a weight unit equaling 12 ounces, a pound", "measure of capacity" (GEL 1054). CAR *rīḥl* "a specific object one uses to weigh or which one uses as measure of capacity, a pound-weight, a pint-weight, a pound or pint of anything, which equals half *manā*", "*rīḥl* equals 12 ounces" (AEL 1102). EAR<sup>D</sup> *raḥl* "a unit of weight equal to 449.28 g" (EAD 341). (cf. AFA 202).

1.9 *kēla*: *kēlāt*: A cylindrical metal vessel<sup>13</sup> with a vertical handle of one litre in capacity, used for measuring milk, yoghurt, oil and other liquids<sup>14</sup> | Ug *kl* II n.f. "measure, amount, quantity" (DUL 441). Palm *kl*<sub>3</sub> n.m.pl.abs. *klyn* "a kind of measure" (DNWSI 508). MH *kelā* n.m. "measure for spices", *kayyālā* n.m. "measure" (DTT 639, 631-632). JBA *kayyelā* n.m.sg. "measure", *kayletā*<sub>2</sub> n.f.sg. "measure, small and large" (DJBA 575). Sy *kaylā* n.m. *kaylātā*<sub>2</sub> n.f.sg. "a measure of wine, oil, grain" (SD 213), *kaylātā*<sub>1</sub> n.f.sg. "measure" (SL 618). Ma *kila* "measure, quantity, capacity" (MD 212). Eth *kayala* "measure" (CDG 284). CAR *kayl* "a measurement of capacity"<sup>15</sup> (AEL 3005). EAR<sup>D</sup> *kēla* "dry measure of 16.72ℓ, the container for measuring such a quantity" (EAD 773). SAR<sup>D</sup> *kēle* 1. "vase de fer blanc servant à mesurer le lait, mesure à lait", 2. "gobelet à anse en forme de mesure", 3. "boite ronde employée à mesurer cette quantité" (DAFDS 736). (< Sy *kayla* (AFA 204). ADDR *kēle* "Schöpfgefäß, Becher" (Seeger 2009, 2 232).

1.10 *'iwqiyya*: *'awāqī*: A unit of weight equal to 250g, widely used to measure sugar, tea, coffee and other dry substances | CAR *'iwqiyya* "an ounce", "one-twelfth of a *raḥl* equalling 40 *dirham*"<sup>16</sup> (AEL 3059, 1102). (< Gr through Aram *'wqy*' AFA 201). EAR<sup>D</sup> *wiqiyya* "an ounce, a unit of weight equaling 37g" (EAD 953). JBA *'uqeyā* n.m.pl. "a small weight" (< Gr ούγκία, Lat *uncia*)<sup>17</sup> (> Sy > Ar *'iwqiyya*) (DJBA 93). JPA *'wnqyyh* n.f.sg. "*unica*, a small coin" (DJPA 40). Sy *'wnqy*' n.f. "an ounce" (SL 18), "an ounce, a weight of eight drachmas" (SD 6). MH *'ūneqeyā* n.f. "an ounce, one-twelfth of a *litra*" (DTT 29, 32). Eth *waqet* "an ounce, a unit of weight", *'anq'ayā* "an ounce" (CDG 65, 616). Gr ούγκία "a measure by *unciae*" (GEL 1268). Lat *uncia* n.m. "the twelfth part of a unit, one-twelfth

<sup>13</sup> See *kēl* a vessel made of wood with a metal frame, or of tin with a handle (Dalman III 150f. 158; IV 221, 387).

<sup>14</sup> One *kēl* equals 16 *medd* in Tiberias (Sonnen 1927:205, Anm. 1). In Beirut, it equals 36ℓ or one-twelfth of a *girāra* (Dalman 1905:36).

<sup>15</sup> For the *kayl* values in ancient and modern times in different areas, see (Hinz 1955:40, cf. *kīle* p. 41-42).

<sup>16</sup> For different values and geographic distribution of the *'iwqiyya*, see (Hinz 1955:34).

<sup>17</sup> "eine kleine Münze, eine Kleinigkeit" (LW 22f.).



of a *libra* weighing approximately 27g, one-twelfth of a *pes* unit (25mm), one-twelfth of an *iugerum* (when measuring area)" (OLD 2090).

1.11 'ušur: šār: A cylindrical copper or wooden vessel interwoven with metal sheets > a dry measurement for weighing grain such as barley, wheat, corn and lentils. It weighs between 1.5 and 2kg. It also means the tenth part, or one-tenth of each value (cf. Dalman I 587; II 36, 148, 150) | Ug šr I ord. num. "tenth"<sup>18</sup> (DUL 188-89). Ph šr<sub>2</sub> n.m.sg.abs. "tithe"(DNWSI 892, 894). BH 'iserōn n.m. "one-tenth" (HAL 895). MH 'æššerōn n.m. "one-tenth of an ephah" (DTT 1127). JBA 'asīrā'āh adj.m.sg. "tenth" (DJBA 884). JPA 'æšerōn n.m.sg. "one-tenth of an ephah" (DJPA 422). Sy 'esrūnā n.m. "tenth part, a grain measure" (measure of fine flour) (SL 1121; SD 421). Eth 'asrāt "tithe" (CDG 73). CAR 'ušr "one-tenth" (AEL 2051).

1.12 tumniyya: tmān: A unit of weight measuring one-eighth of each value<sup>19</sup> of one *medd* (Sonnen 1927:205, Anm. 1). In Jerusalem, it was half a *rub iyye* or 1/32 of a *medd* which equals approximately 3.125l (Dalman 1905:36) | JBA *tmnn* n.f.sg. "one-eighth of a qab" (DJBA 1214). JPA *twmnh* n.f.sg. "tunnah, one-eighth of a qab" (DJPA 577). Cf. Sy *tūmnā* n.m. "eighth part", "penny" (SL 1631; SD 608). MH *tūmanetā* n.f. "tomanta, one-eighth of a kab" (DTT 1654). CAR *tumniyyā* or *tumn* "an eighth, a portion" (AEL 355). EArD *tumna* "unit of dry measure equal to 0.258l" (EDA 137).

1.13 qīrāt: qarārīt: It indicates a weight unit for measuring masses (0.2g when weighing jewelry and precious stones). Traditionally, the unit equaled the weight of three or four dried grains of wheat. It also means a lot, a share<sup>20</sup> or a portion of land<sup>21</sup> used in vernacular contexts as a unit of measurement with different values for surfaces (1/24 of the total land area)<sup>22</sup> or smallest unit in the measurement of length. | JBA *qīrātā*, *qyr'ī* n.m. "carat, one-twentieth of a *mitqāl*" (DJBA 1016), cf. *qīreṭā* n.m. "a grain, particle" (DJBA 1002). Sy *qīrṭā* n.m. "carat, carob pods" (SL 1405). Ma *gurṭa* "a particle, grain, kernel" (MD 85). JPA *qwrī* n.m. "a tiny person, pygmy" (DJPA 484). Sy *qūrṭātā* n.f. "a snippet, small piece of meat" (SD 498). MH *qōrṭeṭ* n.m. "grain, a particle (coagulated) drop" (DTT 1342). CAR *qīrāt* "the weight of a grain of carob, a carat, four grains, the twenty-fourth part of an object" (AEL 2517). This word is originally Semitic and was a loan word from Greek (*keration* "a carob bean") as AFA 200-201 suggests, because the cultivation of the carob tree originated in the Orient.

<sup>18</sup> Syll. Ug *ma-ša-ra* n.m. "tithe" (Huehnergard UVST 164). BH *ma'šer* "tenth part", "tithe (as an offering)" (HAL 617-18).

<sup>19</sup> One-eighth of a *qadaḥ* in Egypt. In modern times it equals 0.258l (Hinz 1955:52).

<sup>20</sup> See *qarrīṭa* below.

<sup>21</sup> As a synonym for *siḥim*, see (Dalman II 234).

<sup>22</sup> For surfaces it is a unit of measurement for a plot of land, measuring around four *dumms*. But in modern-day Egypt, it measures 1/24 of a *faddān* or 175.035m<sup>2</sup> (Hinz 1955:66).

## 2. Measures of length

The lengths of human body limbs of a man of medium size in each community were chosen and employed to measure the lengths of small plots of land (cf. *faḥḡa*, *ḥaḥma*), or textiles (cf. *bā'*, *ḡirā'*), or depth of water in wells or pools – namely for dividing shares of water for irrigation or drinking (cf. *šibir*, *fitir*, *qabza*, *'iṣba'*, *qarrīfa*). This group contains 9 units and most of them are of Arabic origin, although their etymology and their counterparts are also found in other Semitic languages, though, unlike in Arabic, these words were used only to indicate body parts and never developed to express measures of length. The colloquial meteorology seems to lack a unit for measuring long distances such as a mile or a kilometer, such distance were probably measured by a full day travel of walking or riding a beast.

**2.1 *bā'*: *bā'āt*:** A unit of measurement indicating the span from the end of a person's extended arm to the end of the other extended arm (between 165 and 175cm). It was widely used in measuring the lengths of textiles and ropes (cf. Dalman II 48; V 178) | CAR *bā'* "a fathom; the space that is between the extremities of the two arms when extended, the measurement of the extension of the two arms"<sup>23</sup> (AEL 276). EARd *bā'* "the distance from tip to tip of the outstretched arms" (BAD 113). Eth *bā'* "palm of the hand, cubit", *bō'a* "measurement of the arm span" (CDG 83).

**2.2 *faḥḡa*: *faḥḡāt*:** A unit of measurement covering the distance of a person's expanded legs from the toes on one leg to the heel on the other leg, measuring 80 to 90cm. It was used in dividing land or identifying land portions. The length of this unit depended on the size of the person used in measuring. In this case, there was a person whose *faḥḡa* was used as a standard measurement for each community. *faḥḡih* "Sprungweite, 1/40 of *me'nā*" (Canaan 1916:167, Anm. 3). "footstep" in the Negeb (Shawarbah 2012:383) | CAR *faḥḡa* "having the middle of the legs wide apart, having the thighs wide apart, or having the legs wide apart" (AEL 2344). ADDR *faḥḡe* "Länge eines großen Schrittes, großer Schritt" (Seeger 2009, 2 191).

**2.3 *ḡirā'*: *ḡirā'āt*:** A metal or wooden ruler of about 70cm long and 2cm thick, or it refers to a yard used in dressing of stones (Canaan 1933:17, note 5). A unit of measurement covering the length of one extended human arm from the top of the shoulder to the tips of the fingers, measuring roughly 70cm<sup>24</sup> or a little more.

<sup>23</sup> A "fathom" is a unit for length measurement equalling four cubits or 199.5cm. At present in Egypt it is four cubits almost about 3m (Hinz 1955:54). Cf. MH *bū'atā'* III n.f. "signal pole" (DTT 147).

<sup>24</sup> It measures between 2ft 3in and 2ft 5.5in (Post 1891:109). The Neo-Babylonian cubit was 50.64cm and was divided into 24 units; each called a "finger" and measuring 2.11cm in length (Lewy 1944:69).

This unit was used in the measurement of textiles, silk and ropes<sup>25</sup> (cf. Dalman 176, 178, 221) | Ug *ḏr'* I n.f. "arm" (DUL 288). OffAram *dr'* n.m.sg. + 3.p.dg.f. *dr'h* "arm" (DNWSI 342). BH *z'rôa'* n.m. "arm, forearm" (HAL 280). MH *dera'* III, *derā'ā* n.m/f. "arm, shoulder" (DTT 324-25). OffAram *dr'* n.m. "arm" (DNWSI 342). JBA *d'rā'ā* n.m.sg. "arm" (DJBA 353). Sy *derā'ā* n.m. "arm" (SL 324; SD 98). Ma *dra* "arm" (MD 114). CAR *ḏirā'* "the measurement from the elbow to the tips of the fingers, the forearm, the space from the elbow to the tip of the middle finger, cubit", "a unit of measurement for length, a piece of wood used as an instrument with which one measures the length of a cubit" (AEL 403, 921f.). EArd *ḏirā'* "unit of linear measurement equal to 58cm" (EAD 286). Cf. SED I Nr. 65.

2.4 *ḥaṭma*: *ḥaṭmāt*: A term that designated the length of the human foot, it covers 35-40cm. and was used as a unit of measurement for small distances and for dividing small plots of lands (cf. Dalman VI 376), see (AFA 164). (< *ḥaṭwā*<sup>26</sup> or *ḥ/ḥṭm*<sup>27</sup>) | Akk *ḥuṭṭimmu* "muzzle, snout" (CAD H 265), "Schnauze" (AHw 362). Ug *ḥ/ḥṭm*: n.m. "nose" (DUL 416). JBA *ḥūṭmā* n.m. "nose" (DJBA 436-37). MH *ḥoṭām* "the young camel ring or staff put in the nose", *ḥoṭām* n.m. "nose, nostril, snout", "knotted strings of the shoe"; *ḥoṭemāh* "nose" (DTT 431, 450). CAR *ḥaṭm* "the muzzle, the fore part of the nose and mouth", *ḥiṭām* "a cord which had one end fastened around the nose and mouth of the camel, a halter for a camel" (AEL 767f.). The word is derived from a rope that encircled the frontal part of an animal's face, encircling an animal's nose like mule or camel then developed to be used as measurements (cf. Dalman VI 376). (See SED I Nr. 139).

2.5 *šibir*: *šbār*: A unit of measurement equal to the distance between the thumb and the smallest finger when expanded or stretched. It ranges from 20 to 25cm and was used in measuring textiles, and water depths in wells and irrigation pools | CAR *šabru* "a measurement of the span of a garment or piece of cloth", "the space between the tip of the thumb and that of the little finger when stretched

<sup>25</sup> For the different values and kinds of *ḏirā'* in different times and regions in the Islamic world, see (Hinz 1955:55-62). In the Palestinian dialect many kinds of *ḏirā'* were known: *ḏirā' ḥašimī* (or *baladī*) measuring 22.75in, *ḏirā' turkī* or *stambūlī* measuring 29.5in and *ḏirā' bannā* measuring 75cm (Canaan 1933:79 note 3).

<sup>26</sup> CAR *ḥaṭwa* "step, a pace" (AEL 759f.).

<sup>27</sup> Or *ḥ/ḥṭ* Cf. BH *ḥūṭ* "thread" (HAL 296-97). MH *ḥaweṣ* n.m. "shoe tongs", *ḥūṭ* III "thread, chord, strap, sinew", *ḥūṭā* "thread" (DTT 431). JBA *ḥūṭā* n.m. "thread, fringe, shoelace, sinew, length of a line"; *ḥiṭā* "line" (DJBA 436, 448). Sy *ḥūṭā* n.m. "thread, string, measuring line, a fillet" (SD 131), "thread, root thread, (measuring) cord" (SL 423). Ma *ḥaṭā* "thread" (MD 117). SA *ḥwṣ* n.m. "thread, cord" (SDA 251). CAR *ḥaṭṭ* "line, strip", *ḥayṭ* "thread, string" (AEL 768f., 759f.).

out as far apart as possible"<sup>28</sup> (AEL 1496). EArD *šibr* "a measurement equal to the length of the span of the hand" (EAD 449). Cf. SED I Nr. 262.

2.6 *fitir*: *ftār/ftūrā*: A unit of measurement equaling the distance between the thumb and the index finger while expanded or stretched out. It ranges between 15 to 20cm and was used in measuring the depth of water in cisterns, and in the trade of textiles or silk | CAr *fitru* "the space between the tip of the thumb and that of the forefinger when stretched out for measuring, a specific well-known measurement or quantity of wheat" (AEL 2331). EArD *fitr* "a measurement equivalent to the distance between the extended thumb and index finger" (EAD 639). SArd *feter* "espace compris entre l'extrémité du pouce et celle de l'index écartes" (DAFDS 593).

2.7 *qabza*: *qabzāt*: A linear measurement of a man's fist equal to the width of four fingers or approximately 10cm<sup>29</sup> | CAr *qabza* "the measurement of a man's fist from side to side or with the thumb erect, the breadth of four fingers, one-sixth of the common cubit, six and a quarter inches but varies according to area and time period, 1/24 of a *qašaba* (rods), *qašaba* equaled to 333cm or one-sixth of the length of an arm" (AEL 2483, see p. 403, 2353).

2.8 *'išba'*: *'ašābi'*: A unit of measurement referring to the width of the finger which equals 1/24 of a cubit. The cubit finger is estimated to be 2.5 to 3cm. It is the smallest unit of measurement for length in Oriental metrology<sup>30</sup> | Akk *nešbetu* "finger" (CAD N/2 190; AHw 782). Ug *ušb'* n.f. "finger, claw" (DUL 115). BH *'ašba'* n.f. "finger" (HAL 81). MH *'ašba'* n.f. "finger", "share, part", pl. "a finger's length as a unit of measurement" (DTT 110). OffAram *'bš'* n.m.pl.abs. *'bš'n* "finger, a specific measurement" (DNWSI 98). JBA *'ašebe'ā* n.f.pl. "finger" (DJBA 159). JPA *'šb'*, *'šb'h* n.f.sg. "finger" (DJPA 72). SA *'šb'h<sub>1</sub>*, *'šb'h* n.f. "finger" (DSA 720). Ma *'šba<sub>1</sub>* "finger" (MD 355). Sy *šeb'ā<sub>2</sub>* n.f. "finger" (SL 1272), "a measurement of length equaling six grains of barley placed side-by-side" (SD 473). Eth *'ašbā'* (ə)t "finger or toe", "a kind of measurement" (CDG 45). CAr *'išba'* "finger" as a unit of measurement "the width of six average-sized barley-corns" (AEL 1647f., see also p. 403). EArD (EAD 495). Cf. SED I Nr. 256.

<sup>28</sup> See Akk *šebēru* Ic "a bone, part of the body"; *šibirru* "staff", *šuburru* "buttocks" (CAD Š/2 248, 377ff. Š/3 190), *šibirru* "Hirtenstab, Zsepter" (AHw 1227). See Ug *šbr* n.m. "stick, staff" (DUL 806).

<sup>29</sup> In the Middle Ages, it was one-sixth of a cubit, but varied according to the length of the cubit itself, usually between 8.31 and 9cm. In the 19<sup>th</sup> century, the *qabza* became 15.875cm (Hinz 1955:63).

<sup>30</sup> (Lewy 1944:68-69, 72). The *'išba'* of the canonical cubit (49.875cm) measures roughly 2.078cm, but the *'išba'* of the black cubit (54.04cm) measures 2.252cm. By the 16<sup>th</sup> century A.D., it was 2.032cm, while in modern-day Egypt; the *'išba'* officially measures 3.125cm (Hinz 1955:54).

**2.9 qarriṭa: qarārīṭ:** It is the smallest unit in the system of the measurement of length, it indicates the width of the finger and is used as a measure unit equal to 2.5cm. | see *qīrāṭ*.

### 3. Units of measurement for area and land surface

In order to measure lengths of big plots of land and areas of large size that could not be measured with human body limbs, bigger units were functioned to cover these large surfaces. The units of this type contain two groups; 1. Official units with regular values (cf. *faddān*, *dunum*) that appear in both real estate documents and in colloquial contexts and that are used in the division of land between inheritors and in land sales. 2. Unofficial units with irregular values which appeared only in colloquial contexts and were used in measuring ploughed land (cf. *liḡna*, *mi'nā*) in the summer or the winter plough, or by tenant ploughmen (cf. *ṣarḡa*). Or in dividing land in the context of sharing with the value of 1/24<sup>th</sup> of the total size of the land (cf. *sihim*, *qīrāṭ*).

**3.1 faddān: fadādīn:** A unit of measurement for land surface estimated by the amount of land which a pair of oxen could plough in a single day from dawn to dusk. It is derived from the yoke coupled to a pair of animals.<sup>31</sup> The unit is usually about 4000m<sup>2</sup> (4 *dunums*) in the southern area of Palestine, but its measurements differ from one area to another depending on the topographical appearance of the ploughed area (mountains, plains, valleys, etc.), and the texture of the soil. In Jerusalem, this unit equaled 734m<sup>2</sup> or 4225m<sup>2</sup> in Betjala<sup>32</sup> (cf. Dalman II 38f., 47ff., 201; III 309) | OffAram *pdn* n.m.sg.emph. *pd[n']* "plough(?)" (DNWSI 902). JBA *padānā* n.m.sg. "yoke of oxen", "plough" (> Ar *faddān*) (DJBA 888). JPA *pdn* n.m.sg. "plough" (DJPA 425). Sy *padānā* n.f.sg. 1. "yoke of oxen", 2. "a yoke, a plough, plough", 3. "measurement of land" (SL 1157). Ma *padana*, *padana* "plough" (MD 359f.). MH *padān*, *padenā* n.m. 1. "plough, ploughshare", 2. "yoke of plough oxen, pair" (DTT 1137). CAr *faddān* "a quantity or portion of land<sup>33</sup> subdivided into 24 *kirats*, a portion of land which oxen can plough in one day", "= 333 and one-third *qaṣaba*<sup>34</sup> (or rods)" (AEL 2353). (< Aram *padānā* AFA 129). EArd *faddān* "land measurement equal to 1.038 acres" (EAD 644). SArd *faddān* "mesure agraire égale à la superficie de terrain que deux bœufs suffisent a labourer pendant la saison du labourage. A Beirut le *faddan* de 734m<sup>2</sup> est environ le 106 de l'arpent commun de 4.356m<sup>2</sup>" (DAFDS 596).

<sup>31</sup> For a detailed description of the yoke as a ploughing instrument, see Dalman II (64, 93, 105, 132, 147f., 150, 152, 170, 172, 181f., III 14, 104, 110, 145, 156, 166, 168).

<sup>32</sup> See (Post 1891:110; Dalman 1905:37).

<sup>33</sup> Cf. Akk *padānu* n.f./m. "path, way" (CAD P 3f.; AHw 807f.).

<sup>34</sup> The *qaṣaba* equals 24 *qabza* and the *qabza* is the measurement of a man's fist (about 6in)" (AEL 2353).

3.2 *sihim*: *shūma*: A lot or portion of land equaling  $1/24^{\text{th}}$  of any given value.<sup>35</sup> Unofficially used now in Palestine to indicate a lot, a share or a portion of land of different sizes allocated to each person. The term is used in the division of inherited land (cf. Dalman II 235) | CAr *sahmu* “a lot, share or portion, a measurement of six cubits used when buying and selling land” (AEL 1455). SArd *sahim* “part d’un vingtième dans une propriété” (DAFDS 362). EArd *sahm* “land measurement equal to 7.293m<sup>2</sup>” (EAD 438).

3.3 *ṣarḥa*: *s/ṣarḥāt*: A quantity of land measured by what a single work animal could plough per day from dawn to dusk. This measurement was between 2.5 to 3 *dunums* and was used during the tilling period. The size of the unit sometimes varied according to the topographical appearance of the land and the strength of the animal | *srḥ* “to pasture, free, dismiss”: CAr *sarḥa* either “the exterior court or yard of a house”, or “a prominent elongated strip of narrow and even ground with trees or shrubs” (AEL 1344ff.).<sup>36</sup> See SArd *serḥa* “à surface unie et lisse, planche” (DAFDS 340).

3.4 *du/lnum/ zulum*: *dlūma / zulumā*: An official unit used in Palestine since the late Ottoman period for measuring surfaces. The unit was originally measured to be around 914 or 919m<sup>2</sup>. Nowadays, it is standardized at 1000m<sup>2</sup> (cf. Dalman II 47, 182; III 16, 110, 155f., 309) | Turk *dunum* “a measurement of land (one day’s worth of ploughing) being 1600 square arshins, or 939.3m<sup>2</sup>” (TEL 928). ADDR *dulum*, *dilim*<sup>37</sup> “Flächenmaß, 1000m<sup>2</sup>” (Seeger 2009, 2 85).

3.5 *liḡna*: *liḡān/liḡnāt*: A name given to a rectangular piece of land. This unit of measurement was used by farmers as a surface unit to measure ploughed land during the sowing and tilling periods. Its size ranged from 10 to 15m in width, and 40 to 50m in length (cf. Dalman II 171f.; 1905:28f.) | Sy *lggetā* n.f. “a measurement of sowed land” (SL 673), “seed-bed, flower-bed”, “furrow” (SD 235). MH *liḡnā*\* n.m. “a narrow path between fields”, *liḡnāh* n.f. “row, garden-bed” (DTT 692-93). According to AFA (130-131), the word indicated a surface and weight unit of Semitic (< Egyptian *lg*) origin.

3.6 *mi'nā*: *ma'ānī*: A rectangular piece of ploughed land which an animal ploughs. It measured between 30 and 40m in length and 8 to 10m in width, or a third of a *dunum*, and was used by farmers during winter or summer tilling as the land was divided into three or four strips (or *ma'ānī*) to be ploughed by animals during the day (cf. Dalman II 39, 47, 169ff., 162, 172). (cf. Dalman 1905:27f.; Canaan 1916:167) | Ug *'nt* n.f.pl. “Ackerfurche” (KWU 18). BH *ma'nāh* n.f. “plough furrow, the area at the end of the strip where the plough turns” (HAL

<sup>35</sup> A measurement of area in modern-day Egypt equals  $1/24$  *qirāṭ* or 7.293m<sup>2</sup> (Hinz 1955:66).

<sup>36</sup> See CAr *ṣarḥa* “the court or open area of a house”, “a piece of ground that is hard, a place where dates are dried, a house or dwelling” (AEL 1675). Cf. Nab *ṣryḥ*<sub>1</sub> n.m. “room, chamber, closed space” (DNWSI 975).

<sup>37</sup> See Shawarbah (2012:392).

615). MH *ma<sup>a</sup>nāh* n.f. “turn of the plough, furrow’s length” (DTT 818). ADDR *mi’nā* “kleiner Abschnitt Land, Furche, Scholle” (Seeger 2009, 2 179).

#### Measures of capacity for dry and liquid substances

unit	metric equivalent
<i>qunṭār</i>	300kg
<i>sidsiyya</i>	18-20kg
<i>tanaka</i>	18-20kg
<i>ṣā’</i>	12-15kg
<i>madd</i>	10kg
<i>nuṣṣiyya</i>	8-10ℓ
<i>rub’iyya</i>	4-5ℓ
<i>raṭil</i>	3kg/ℓ
<i>kēla</i>	1kg/ℓ
<i>iwqiyya</i>	200-250g
<i>’uṣur</i>	1.5-2kg
<i>ṭumniyya</i>	800-1000g
<i>qīrāṭ</i>	2g. or 1/24 of any unit/quantity

#### Measures of length

unit	cm
<i>bā’</i>	165-175
<i>fahḡa</i>	90-100
<i>qrā’</i>	70
<i>ḥaṭma</i>	35-40
<i>šibir</i>	30-35
<i>fitir</i>	20-25
<i>qabza</i>	8-10
<i>’iṣba’</i>	2.5-3
<i>qarrīṭa</i>	2.5

#### Units of measurement for area and land surface

unit	m <sup>2</sup>
<i>faddān</i>	4000
<i>ṣarḥa</i>	3000
<i>dunum</i>	910-1000
<i>liḡna</i>	480-675
<i>mi’nā</i>	320-350
<i>sihim</i>	1/24 of any unit or 7.293

**Lexical origin of the units****Semitic words found in the names**

<b>Total</b>	<b>28</b>	<b>100%</b>
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<b>Can</b>	<b>5</b>	<b>17.5%</b>
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*šā', kēl(a),  
madd, mi'nā,  
nuṣṣiyya.*

<b>Aram</b>	<b>4</b>	<b>14.2%</b>
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*'iṣba', faddān,  
qīrāṭ, liḡna.*

<b>Ar</b>	<b>9</b>	<b>32%</b>
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*bā', faḡḡa,  
ḡirā', šibir, fitir,  
qabza, sihim,  
ṣarḡa, ḡaṭma.*

<b>CS</b>	<b>5</b>	<b>17.8%</b>
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*sidsiyya,  
rub 'iyya,  
ṭumuniyya,  
qīrāṭ, 'uṣur.*

<b>23</b>	<b>82.1%</b>
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**Non-Semitic words found in the names**

<b>Total</b>	<b>28</b>	<b>100%</b>
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<b>Greek-Latin</b>	<b>3</b>	<b>10.7%</b>
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*qunṣār, raṭl,  
'ivqiyya.*

<b>Turkish</b>	<b>2</b>	<b>7.1%</b>
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*tanaka, dumum*

<b>5</b>	<b>17.8%</b>
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**Abbreviations of languages and dialects**

ADDR	Der arabische Dialekt der Dörfer um Ramallah
Akk	Akkadian
Ar	Arabic
Aram	Aramaic
BH	Biblical Hebrew
Can	Canaanite
CAr	Classical Arabic
CS	Common Semitic
EArD	Egyptian Arabic Dialect
EpHeb	Epigraphic Hebrew
Eth	Ethiopian
Gr	Greek
JBA	Jewish Babylonian Aramaic
JPA	Jewish Palestinian Aramaic
Lat	Latin
Ma	Mandaic
MH	Middle Hebrew
Nab	Nabataean
OffAram	Official Aramaic
OldAram	Old Aramaic
Palm	Palmyrenean
Ph	Phoenician
Per	Persian
Pun	Punic
SA	Samaritan Aramaic
Samal	Sāmalian
SArD	Syrian Arabic Dialect
Sy	Syriac
Turk	Turkish
Ug	Ugaritic

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