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Metal Weights from Khirbat Burin

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Two metal weights were found during the second and third seasons of excavations at Khirbat Burin (Fig. 1:1, 2). Another weight, uncovered during the first season, is included in this report as well (Fig. 1:3).

Weight No. 1 (Fig. 1:1). This weight was retrieved during the second season, from mixed debris (L119) perhaps related to Stratum II (Kletter and Stern 2006:210). It is a cubical iron weight, severely corroded, faceted on each side (width 25 mm). The facets were probably decorated by incision, perhaps by dots (cf. Qedar 1981:58, No. 15), now erased by corrosion. Balog (1970) defines this form of weight as cubo-octagonal: first a cube of metal was made, and then its edges were cut to form triangular facets. Such weights appear in the Southern Levant in the late Fatimid period. According to Balog, this type of weights relates to an *uqia* unit of c. 29.7 g, as part of a decimal weight system (1 *uqia* = 10 *dirham* of c. 2.9 g). The same unit and type of weight continued to exist in the Ayyubid and Mamluk periods, and even as late as the nineteenth century CE (Balog 1970:236–237). Holland (1986:173) calls such truncated faceted weights "polyhedra"; but the collection that he studied was not stratified, so it did not permit distinction by periods.[1] Other scholars maintain that the Mamluk weight system was based on a duodecimal basis (1 *uqia* = 12 *dirham*). In a preliminary publication, Hocker (1993:19) identifies both systems in weights from Serçe Limani (eleventh century CE). For another, preliminary publication of similar weights, from 'Aqaba, see Whitcomb 1994:19. In fact, the exact weight of the *dirham* and the structure of the Mamluk weight system are not yet completely clarified (Schultz and Gitler 2000:209, n. 10; see also Ashtor 1978; 1986).

The present weight of c. 114.47 g fits a weight of four *uqiya* (4 × 28.62 g). The slightly lighter value can be the result of corrosion. However, no exact equivalent to this weight could be found in literature. Balog (1970:236–237, 242–243) notes weights of 1, 2, 5 and 10 *uqiya* that fit a decimal system, but not weights of 4 *uqiya*. The same is true for Holland (1986).

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[1] The more recent publication by Holland (2009) was not yet available when writing this study. Thanks are due to Ella Altmark (metal restoration), Marina Shuiskaya (drawings) and Clara Amit (photography),

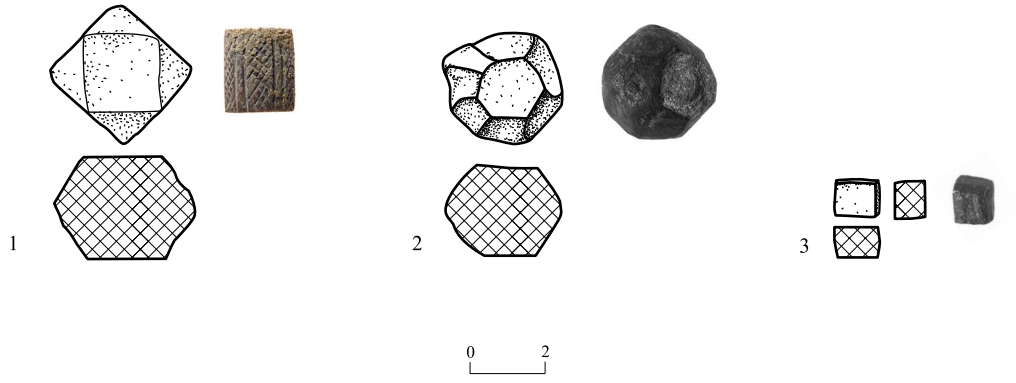

Fig. 1. Weights.

No.	Basket	Locus	Description
1	1069	119	Iron polyhedra weight; 114.4738 g; Permit No. A-2957, Stratum II
2	Q.W18	Sq Q, near W18	Bronze polyhedra weight; 11.4306 g; Permit No. A-3188, Stratum II or I
3	2047	211	Bronze cubical weight; 0.9397 g; Permit No. A-3145, Stratum II

Weight No. 2 (Fig. 1:2) is a polyhedra bronze weight (cf. Holland 1986: Nos. 1–39). It was found in Sq Q near W18, in an unclear context, but still within the area of the Stratum II building complex (see Kletter and Stern, this volume). After cleaning, it weighs 11.4306 g.[2] This seems to be a weight of 4 *dirhams* (4 × 2.8576 g). There are no exact comparisons, since the common units are 1, 2 and 5 *dirham*. For weights of 2 *dirham*, see Schultz and Gitler 2000:205–206.

Weight No. 3 (Fig. 1:3) is a bronze weight, found in L211, Stratum II (see Kletter and Stern, this volume). It is a small weight of the type termed "brick-shaped" by Holland (1986:179). According to Holland, these are *dirham* unit weights, with an average of 2.856 g per *dirham*. The present, slightly worn weight of 0.9397 grams represents 1/3 *dirham*. For comparable weights from Caesarea, see Holland 1986:179, Nos. 432–442.

The weights from Khirbat Burin were used with small balances, either simple or folding. Heavier weights were measured with steelyards (Hocker 1993:13–18; Khamis 1996:232, Fig. 18:9). Similar weights have been published mainly from antiquities collections, and

[2] Encrustation had distorted its shape. Only after cleaning, it became clear that it was a scale weight. The other weights were not cleaned.

hence, their contexts are mostly unknown. The Burin weights corroborate the conclusions of Schultz and Gitler (2000:206–208) that bronze weights for measuring coins continued to be used in Syria-Palestine during the Mamluk period.

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