CHAPTER FIVE

Doughnut-Shaped Clay Spheres from the Ophel

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Nine doughnut-shaped clay spheres were discovered in the 2013 Ophel excavations. They were found in Iron Age IIA Locus 13-439 (B13-3665–B13-3670, B13-3695– B13-3697), composed of a compacted earth fill with small stones, located on top of Floor L13-449 and adjacent to the southern face of the small wall W13-443 (Photos III.5.1–2). A number of clay spheres were found directly above Floor L13-449, while the rest were discovered at different levels within the fill. Although these spheres were all discovered in the same locus, they were not arranged in any particular order; instead, they were found haphazardly strewn about the locus. The small stones found mixed amongst the spheres are similar to those of W13-443. This most likely indicates that the stones originally belonged to this wall, which at a certain point in time collapsed along with the spheres placed on top or beside it.

DISCUSSION

Description

The doughnut-shaped spheres were light brownish-grey on the outside and dark brownish-red

Photo III.5.1. Earth fill of Locus 13-439 mixed with small stones, and the doughnut-shaped clay spheres to the south of W13-443. Looking north.

Photo III.5.2. Locus 13-439 and the spheres above Floor 13-449. Looking northwest.

on the inside, made of unbaked clay containing a few minute pebbles, charcoal and a few tiny pieces of pottery. The spheres were round and smooth on both sides. Only one intact sphere was found, weighing 724.36 grams (Photo III.5.3); five of the remaining eight spheres are mostly intact, the other three being only half spheres.

The spheres are relatively uniform in size, each 5–6 cm thick (high) and approximately 11–13 cm in diameter. Eight of the spheres show a small depression at their center, while the ninth shows a hole, on the same spot, measuring 1.5 cm in diameter (Photo III.5.4, lower right).

Parallels

Most clay spheres from the Iron Age II are perforated in their center, though similar clay spheres without perforations have been found in Ashkelon and the City of David. The spheres from Ashkelon were identified as jar stoppers (Master 2011:494, Photo 18.4, Table 18.2), while those from the City of David were identified as amorphic loom weights (Shamir 1996:136, Pl. 12.11). Nevertheless, there are some major differences between the Ophel clay spheres and the ones found at Ashkelon and the City of David: the Ashkelon clay spheres are more bun-shaped and not as spherical as those from the Ophel; furthermore, the Ashkelon spheres have no

Photo III.5.3. Intact sphere from Locus 13-439. Note the small depression in its center.

Photo III.5.4. The only sphere with a hole in its center (bottom right).

depressions in their centers (Master 2011:494, Photo 18.4, Table 18.2), and they measure between 7 and 9.5 cm in diameter — as opposed to the Ophel spheres, which measure 11–13 cm in diameter. The spheres from the City of David are, in turn, less symmetrical than those from the Ophel and also much smaller, weighing only 53–115 grams — that is, six times less than those from the Ophel — and several bear a similar depression in their center. Shamir believes these depressions were the beginnings of perforations and suggests that the manufacture of these spheres was not completed (Shamir 1996:136, Pl. 12.11).

Though most of the Ophel spheres are not perforated, they bear a resemblance to many perforated clay spheres from other sites. Therefore, as in the case of the City of David spheres, it seems likely that the depressions found at the center of the Ophel spheres were originally intended to become perforations, their manufacture remaining uncompleted.

Perforated Clay Spheres

Perforated clay spheres have been uncovered in several excavated Iron Age sites throughout Israel (Sheffer 1981:81). They are most prevalent in Iron Age II period sites, such as Tell el-Ḥammah, Tel Batash, Bet Sheʾan, Ḥorvat Rosh Zayit, Tel Taʿanakh, the City of David and many other locations (Shamir 1996:140–142). The most common interpretation for these spheres is that they were used as loom weights (Master 2011:493); however, other suggestions have also been brought forth. Zvi Gal argued that the perforated clay spheres found in Ḥorvat Rosh Zayit should be identified as jar stoppers rather than loom weights, both because of their large size and weight and because of the fact that they do not show evidence of string wear marks confirming these were tied through the perforations. He believes these stoppers were perforated in order to allow gases to escape during the process of wine fermentation (Gal 1989:283).

Lending credence to the stopper hypothesis is the fact that three clay spheres were found *in situ* on top of storage jars in Ḥorvat Rosh Zayit (Gal and Alexander 2000:125–126) and two more were found *in situ* on the mouth of jars in Tell el-Ḥammah (Master 2011:493). However, Shamir points out that the dozens of clay spheres from Tell el-Ḥammah were found amid spindles and whorls clearly used for textile manufacturing purposes. She therefore believes that

the spheres were originally used as loom weights, while some were secondarily used as stoppers (Shamir 1996:145).

Benjamin Mazar suggested that these spheres were used as clay heaters (Sheffer 1981:81) or as weights for fishing nets (Mazar 1964:25). Lapp favored the clay heater theory, adding, however, that they may have had a cultic function associated with the burning of sacrifices. He disagrees with their identification as loom weights due to their size and fragility (Lapp 1969:47; Sheffer 1981:81).

CONCLUSIONS

In view of the fact that eight out of the nine clay spheres found in L13-439 in the Ophel do not bear a perforation at their center, it is more likely they were used as stoppers and not as loom weights. On the other hand, as noted above, it is also plausible that the depression at their center was intended to become a perforation and that the manufacturing process was not completed.

In an attempt to differentiate clay jar stoppers from loom weights, Master claims that the diameter of loom weights generally measures less than 9 cm in diameter, their weight is less than 800 grams, and that they are found in rows near walls or wooden remains. He makes it clear that these criteria should only be used as a guideline and that they are not decisive for every clay sphere found (Master 2011:494).

Following these criteria, the Ophel clay spheres should not be considered loom weights, their diameter being too large. Their weight matches the loom weight criterion, though the sole intact sphere just barely conforms to that weight guideline. As for the third criterion, the Ophel spheres were found near Wall 13-443, but they were not discovered in a row; instead, they were found strewn about the fill that abuts the wall, and most likely represent a cluster of spheres that fell from a nearby shelf or sort.

Other scholars have different size and weight criteria for loom weights. According to Sheffer, most warp weighted looms weigh between 200–400 grams and measure 6–10 cm in diameter (Sheffer 1981:81). Sheffer's criteria would make the Ophel spheres both too large and too heavy to be loom weights. Gal believes that loom weights weighing more than 420 grams are too heavy for use in weaving (Gal 1989:283), while Shamir, based on weaving experiments, states that it is possible to weave even with loom weights reaching 800 grams in weight (Shamir 1996:145). Although there is no definite consensus about the weight of loom weights in general, it is at least possible to say that the clay spheres from the Ophel weigh more than most warp weighted looms. In any case, it seems that even if all the clay spheres from the Ophel had been perforated with holes, their large diameters, above average weight and archaeological context demonstrate that they do not truly fit the loom weight criteria.

The possibility of the Ophel clay spheres being stoppers is a more plausible hypothesis. Gal and Alexander classified the clay stoppers from Ḥorvat Rosh Zayit, the 'doughnut-shaped stopper' type, roughly formed from a round lump of clay measuring 9.5–11 cm in diameter (Gal and Alexander 2000:125), which is the type most similar to the one found in the Ophel. Unlike most of the Ophel stoppers, however, the 'doughnut-shaped stoppers' from Rosh Zayit show a 1.5-cm-diameter-hole drilled in their center, thus being considered by many as loom weights. Interestingly, the hole of the sole perforated clay sphere from the Ophel shows the exact same diameter.

Other clay stoppers are sometimes termed 'mushroom-shaped stoppers'. These amorphic

stoppers were fashioned on the mouths of jars while the clay was still wet, giving them a mushroom-like appearance (Yadin and Geva 1986:82–84; Gal 1989:281–283; Gal and Alexander 2000:125–126). Similarly to the Ophel clay spheres, the mushroom-shaped stoppers have no holes in their centers; however, they are very different, in shape, from the symmetrical Ophel spheres. In fact, the major problem with the stopper theory is that many of the clay stoppers described by others are not as spherical and symmetrical as those from the Ophel, not even the doughnut-shaped stoppers from Rosh Zayit discussed above.

The nine doughnut-shaped clay spheres uncovered at the Ophel are in many ways similar to several of the Iron Age II baked and unbaked clay spheres from other sites in Israel. Scholars have tried to identify these ubiquitous objects, classifying them as many different things, most often as jar stoppers or loom weights. Judging by their archaeological context, there is no doubt that at least some of them were in fact used as jar stoppers and as loom weights. However, it is also plausible that some of the spheres belonged to neither category and that they were used for other purposes. Neither the loom weight nor the jar stopper theory provides a satisfactory explanation for the function of the Ophel clay spheres, though the jar stopper theory seems the more likely of the two. Still, it seems to us that the last word about their function has yet to be said.

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