

THE GOLD OF THE ARK

JOSIAH DERBY

Soon after the revelation at Sinai, the Israelites were commanded by God to build a portable structure that would serve as the locus of public worship in the wilderness. It would be called the *Mishkan* [Tabernacle]. They were also to construct furnishings for the *Mishkan*, including the Ark of the Covenant.¹ The Ark was to consist of a chest made of acacia wood two-and-one-half cubits long (about 45 inches), one-and-one-half cubits wide (about 27 inches), and one-and-one-half cubits in depth. This was to be overlaid inside and out with pure hammered gold. It was to function as the repository for the two Tablets of the Covenant (the Ten Commandments).

A cover, of the same length and width, was to be made for this chest, also of pure hammered gold, called the *kapporet*.² Joined to it were to be two winged figures of pure hammered gold, called *cherubim*.³ Finally, four rings, cast in gold, were to be attached to the four corners of the chest, into which two gold-plated acacia wood poles of indeterminate length were to be inserted so that the entire object could be carried. A coronet of hammered gold was to embellish the tops of the four sides of the chest. The intent was that several men, at least four, would carry the Ark on their shoulders.

This entire building project was placed in the hands of Bezalel, the master craftsman, son of Hur, of the Tribe of Judah, as its supervisor and director. It would be instructive to inquire where and how Bezalel and his workmen acquired the skill and technology of working with gold. The only answer can be Egypt.

The story of Joseph suggests that the Egyptians did not look upon their slaves as inferior beings, good only for manual labor that requires neither intellect nor skill. Joseph's master recognized his exceptional capabilities and made the most use of them. Similarly, we may conclude that Bezalel and other Hebrews whose skills and abilities were noted by the Egyptians, instead of being sent into the fields to make bricks with the rest of their brethren were given to Egyptian craftsmen as helpers, thereby enabling them to learn the craft.

Josiah Derby z"l received B.S. and M.A. degrees in mathematics from Harvard University, and was ordained at the Jewish Theological Seminary. He was the rabbi of Rego Park Jewish Center, NY, for 42 years.

Let us now try to estimate the quantity and total weight of the gold required for the Ark. Its values will depend upon the thickness of the hammered plating. In modern times, gold leaf is so thin and fragile that it is handled essentially by means of static electricity. I do not believe that the Egyptians achieved that degree of thinness. It is therefore necessary for us to estimate the thickness of the gold overlay on the Ark, as well as of the thickness of the *kapporet*. Readers who may think that our estimates are too high may reduce the values proposed here in proportion to their lower estimates of thickness. The volume of gold will be calculated in cubic inches because the weight of a cubic foot (12x12x12 cubic inches) of gold is a well-known figure and simple to use, namely 1197 (say, 1200) pounds.

Assuming the thickness of the overlay to be 1/64th of an inch,⁴ the total gold of the two long sides, the two ends and the bottom, all overlaid on both sides, comes to 82.86 pounds. The gold on the poles, the coronet and the four rings amounts to approximately three pounds.

We now turn to the *kapporet* which presents the most difficult appraisal and may result in a most challengeable estimate. Nevertheless, the attempt must be made. For a sheet of gold to cover an area 45x27 square inches with a considerable weight upon it, and not to buckle under the weight, it must be at least 1/16th of an inch thick. This comes to 52.73 pounds.

The *cherubim*, in order to maintain stability, must be at least twice the thickness of the overlay, or 1/32nd of an inch. With the outspread wings covering the *kapporet*, we may assume they measured approximately the same size as the *kapporet*. As to the "bodies" of the *cherubim*, since they are hammered and not cast solid, they would probably also have to be 1/32nd of an inch thick. Perhaps each "body" had about the same surface area as one wing; that is, a total area equivalent to half the area of the *kapporet's* slab. Consequently, the wings weigh 26.35 pounds and the "bodies" of the *cherubim* half of that, or 13.17 pounds, for a total of 39.52 pounds. Hence, the *kapporet* would weigh all told 92.25 pounds.

Thus, the total weight of the gold of the Ark would be 177.61 pounds. According to Exodus 38:24, the Israelites contributed gold in the amount of 29 talents and 730 shekels by the sanctuary weight, plus 100 talents and 1775 shekels of silver. That the Israelites possessed so much gold and silver is not surprising considering the fact that 603,550 males over age 20 had come out

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of Egypt (38:26). This implies that there must have been at least half a million females of all ages; and if each female wore on average of half an ounce of gold, which is not very much, especially if we bear in mind that they also borrowed from their Egyptian neighbors (12:35), the total would come to some 15,000 pounds of gold, besides the silver. This is more than enough to fulfill the requirements of the *Mishkan*.

To the weight of the gold of the Ark, we must add the weight of the lumber overlaid with gold, which we could estimate at 50 pounds, and the weight of the two Tablets of the Covenant at 60 pounds,⁵ for a grand total of 287.61 pounds. This would mean a weight of more than 70 pounds on a shoulder of each of four men. When a weight of this magnitude is distributed over an area, the pressure is inversely proportional to the area. Hence, the pressure from a pole two to three inches in diameter carrying such a weight would probably be unbearable even for a very strong man.

We are told in Joshua 3:3 that the *priests and the Levites were carrying it* (at the crossing of the Jordan). This passage need not be taken as a refutation of our estimates that the Ark was, indeed, portable as intended, for the Ark could have been carried on a large platform by quite a number of men and not by the poles attached to it. In fact, the mention of *priests and Levites* gives precisely that impression. Moreover, the people were to be able to see the ark (Josh. 3:3). That could not happen if it was carried on the shoulder by its poles; it would be high enough to be seen if it were carried on top of a platform.

There are also texts that seem to indicate that it was conveyed on a cart. In Numbers 10:35 the verb "*binso'a*" literally means "when it traveled." Translations shy away from this literal meaning so as not to contradict Exodus 25:14 or Numbers 7:9. Again, when David was bringing the Ark from Givah to Jerusalem, it was transported on a cart (II Sam. 6:3).⁶

NOTES

1. Exodus 25:10ff. The NJPS translation calls it "the Ark of the Pact". In Joshua 3:6 it is called *The Ark of the Lord Your God*. This "Ark" is from the Hebrew *aron*. In modern Hebrew, *teivah* means box and *aron* is a closet or chest.
2. This rather mysterious word, whose real significance is a matter of debate among commentators, ancient and modern, is rendered by the NJPS simply as "cover".
3. For a discussion of what *cherubim* might have been, see N. Sarna, *Exploring Exodus* (New York: Schocken Books, 1986) p. 211.

4. B. Yoma 72a. Rav Yehuda states that Bezalel fashioned two boxes of gold, one slightly larger so that the wooden box would fit into it, and one slightly smaller to fit inside the wooden box thereby effecting the required plating. For these boxes to be stable, the gold sheets would have to be substantially thicker than 1/64th of an inch, probably at least 1/16th of an inch.

5. See my article, "The Two Tablets of the Covenant," *Jewish Bible Quarterly*, 1993, XXI, pp. 73-79.

6. I Chronicles 15:15 tries to correct this story by stating that Levites carried the Ark on their shoulders.

עשה תורתך קבע

**THE TRIENNIAL BIBLE READING CALENDAR
DEDICATED TO THE MEMORY OF CHAIM ABRAMOWITZ**

2005

October	Psalms	71 - 98
November	Psalms	99 - 125
December	Psalms	126 - 150
	Proverbs	1 - 3

2006

January	Proverbs	4 - 31
February	Job	1 - 25