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SURFACE MEASURE IN ANCIENT ISRAEL: THE CASE OF *MIDDOT 2,1*

The first part of *Mishnah Middot 2,1* has been completely misunderstood, both by the standard commentators and by modern scholars. This article explains the origin of the mistake and offers the correct interpretation.

The interplay between languages is interesting and complex. For example, in ancient times when Aramaic was the lingua franca in the Middle East, its influence on biblical Hebrew is discernible in every aspect including morphology.¹ A modern example in English is the word “epochmaking” which is derived from the German *epochemachend*; the first part of the word is even a direct transliteration.² According to Fowler, this word has an alien look about it.

The example chosen here is *Mishnah Middot 2,1* which reads: “*Har Habbayit* [the outer sanctified court of the Second Temple] was 500 cubits by 500 cubits.” It is understandable that when scholars, especially those investigating the Temple Scroll and the location of the Second Temple, turn to this text, they suppose the shape of *Har Habbayit* to have been a square.³ They inherently assume that the morphology of the Jewish Sages who lived about 2000 years ago is the same as that of their own language. This is a misunderstanding. Thus, the object of this article is to show that the term “500 cubits by 500 cubits” is the formulation of *area* in the language of the Sages, Mishnaic Hebrew 1 (MH1). Nothing can be said about the *shape* of the area.

In MH1, area is defined by a length of x units times an equal length of x units.⁴ I have yet to find in Mishnaic Hebrew the term “square cubit”. This definition of areal measure can be proved by considering a number of ancient Talmudic texts. For example, “Rabbi Tarfon says [that a piece of ground] six [handbreadths] by six handbreadths” [is subject to *Péah*] (*Mishnah Péah* 3,6); “Cloth becomes unclean to *midras* [uncleanness], if it is three [handbreadths] by

three" [handbreadths] (*Kélim* 27,2); "Our Rabbis taught: Egypt is four hundred *parsah* by four hundred *parsah*" (*Bavli Ta'anit* 10a).

It is quite evident from these examples that the shape cannot be restricted to a square. Maimonides must have understood this point very clearly. He, apparently basing himself on *Mishnah 'Éruvin* 2,3 and 2,5 and on *Bavli 'Éruvin* 23b, states in his *Mishneh Torah (Hilkhoh Shabbat* 16,3):

How much is *Bét Se'ah*? 50 cubits by 50 cubits. Thus, *Bét Sa'tayim* is a place whose area is 5000 [square] cubits. And every place which is of this measure, whether it is square, that is 70 cubits and a remainder [approximately 5/7 of a cubit] by 70 cubits and the [same] remainder, or circular, or any other form, is called *Bét Sa'tayim*.

However, he himself assumed that *Har Habbayit* was a square.⁵ Hence, it may be concluded that the formulation — a length of x cubits by an equal length of x cubits — is part of the language of MH1 for expressing square measure. Why was this method adopted? A hint may be found in the statement of Rabbi Tarfon, who quoted the size in handbreadths and not in cubits. The area in question was divided into a grid of squares of size one handbreadth by one handbreadth. The number of squares was then counted and an estimate was made of the number of partial squares according to the shape of the area in question. The finer the grid, the more accurate the determination.

Consider now *Middot* 2,1: "*Har Habbayit* was 500 cubits by 500 cubits." This statement informs us that the area of *Har Habbayit* was 250,000 square cubits. Nothing can be said of its shape. The language of the *Mishnah* is concise and precise. If *Har Habbayit* had been a square, the text would have read: *Har Habbayit* was of length 500 cubits by breadth 500 cubits. This can be checked in tractate *Middot* itself. *Middot* 2,5 states: "The Court of the Women was [of] length 135 by breadth 135." Through the addition of the two words, "length" and "breadth", there appears to be no question that a square is implied in the case of the Court of the Women. However, *Middot* 3,1 states: "The Altar was 32 by 32." Does this mean that the shape of the Altar is indeterminate, or that my interpretation is wrong? No: the shape of the Altar is well known from the Bible, and further in *Middot* 3,1, Ezekiel 43:16 is quoted: "And the hearth is 12 [in] length by 12 [in] breadth, square."

The literature of the *Tanna'im* (e.g., *Middot* 2,3; *Mishnah Pesahim* 5,10; *Nedarim* 5,5; *Kélim* 1,6-8; *Parah* 3,3; *Tosefta Sheqalim* 3,27; *Hagigah* 2,9; *Sotah* 7,13; *Sanhedrin* 7,1) shows that *Har Habbayit* was an outer court of the Temple, akin to a garden surrounding a house, which in this case is the Temple. Hence, even if its shape had been square, its area would not have been that of a square. The area would have been that of a square minus the central section

composed of the Temple and of the *Hél* (*Middot* 2,3), the terrace adjacent to the Temple.

The shape of *Har Habbayit* before the First Revolt against the Romans could not have been rectangular, or, as some translate, square.⁶ Josephus' *The Jewish War*, VI. 311 reads: "Thus the Jews, after the demolition of Antonia, made the Temple compound rectangular,....". And *Middot* 2,1 surely does not refer to this temporary arrangement (see Appendix).

All that can be learnt from the first part of *Mishnah Middot* 2,1 is the area of *Har Habbayit*, but not its shape. From Josephus it would appear that *Har Habbayit* was neither square nor rectangular.

APPENDIX

From time to time, the dating of *Middot* has been debated by scholars. This is not the place to present a detailed argument. I hope that one point will suffice. There are *apparent* discrepancies in *Middot* and Josephus in the description of the Second Temple. On the other hand, these texts have much in common. It would appear that both have their origin in a Temple Scroll from a time well before the First Revolt [for a reference to a Temple Scroll, see *Midrash Shemu'el* 15, 3; e.g., edn. Salomon Buber, p. 92 (5653) (Krakow; reprinted Jerusalem, 5725)].

NOTES

- 1 E. Y. Kutscher, *A History of the Hebrew Language*, ed. R. Kutscher (Jerusalem: Magnes Press, 2nd revised printing, 1984), p. 72.
- 2 H. W. Fowler & F. G. Fowler, *The King's English* (Oxford: Clarendon Press, 3rd edn., 1931), pp. 40-41.
- 3 J. Maier, "The Architectural History of the Temple in Jerusalem in the Light of the Temple Scroll", *Temple Scroll Studies*, ed. G. J. Brooke (Sheffield: Sheffield Academic Press, 1989), pp. 35, 51; M. Delcor, "Is the Temple Scroll a Source of the Herodian Temple?", *ibid.*, p. 72; L. Ritmeyer, "Locating the Original Temple Mount", *BAR*, 18 (2) (1992) 29, 33.
- 4 J. Hastings (ed.), *A Dictionary of the Bible* (New York: Charles Scribner's Sons, 1902), vol. IV, p. 910; D. Sperber, *Encyclopaedia Hebraica* (Jerusalem-Tel-Aviv: Encyclopaedia Publishing Co., 5730), vol. 22, column 237 (in Hebrew).
- 5 An autograph sketch of *Har Habbayit* can be seen in Oxford, Bodleian Library, MS. Poc. 295. A facsimile edition is available in *Maimonidis Commentarius in Mischnam* (Copenhagen: Ejnar Munksgaard, 1966), vol. III, p. 756.
- 6 A. S. Kaufman, "The Temple Compound Made Rectangular (Josephus' *The Jewish War*, VI. 311)", *Eleventh World Congress of Jewish Studies* (Jerusalem: World Union of Jewish Studies, 1994), pp. 41-48.

