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A NEW INVESTIGATION OF THE SYMBOL OF ANCIENT EGYPTIAN GODDESS SESHAT*

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This paper focuses on the symbol of the ancient Egyptian goddess, Seshat, and its reinterpretation. The problem is discussed from the perspective of the cognitive abilities of ancient Egyptians to observe and understand some specific natural phenomena as early as the Predynastic Period. This study reveals a remarkable similarity in the design, symmetry and characteristics of the symbol of Seshat to the shadows cast by the vertical gnomon, which are oriented to the specific directions on the horizon. In addition, the geometric picture achieved as a result of observation and multiple measurements, based on the application of a specific solar method in order to find the cardinal points, is presented here in context of the shape of the symbol of Seshat. The geometric forms of both are almost identical. It is argued that in the two-dimensional representation of the sign of Seshat can in fact be seen the gnomon (stem), the directions radiating from the center (rosette) in which the shadows of gnomon can be oriented within a year at the latitude of Egypt, north of the Tropic of Cancer (hereinafter referred to as TC), and the curve (arc with two feathers or horns placed above the rosette) representing limits in which the shadows can move in connection with the apparent path of the sun in the sky during solstices or equinoxes.

Key words: Seshat, symbol, gnomon, shadows, cardinal points, orientation, rhombic method, geometry

It seems that since the recent publication of my papers focused on the sign of ancient Egyptian goddess Seshat,[1] no new interpretations have been published

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[1] MAGDOLEN, D. The Development of the Sign of the Ancient Egyptian Goddess Seshat down to the End of the Old Kingdom: Analysis and Interpretation. Part One, pp. 45–55; MAGDOLEN, D. The Development of the Sign of the Ancient Egyptian Goddess Seshat down to the End of the Old Kingdom: Analysis and Interpretation. Part

by others so far.[2] Nevertheless, I have decided to come back to this subject again. I would like to re-investigate this old problem from the perspective of the contextual approach; as part of this perspective I am including in it a description of the specific natural phenomena and the cognitive abilities of ancient Egyptians to express their knowledge and experience in the complex form of symbols and attributes.[3]

I.

More detailed information about the goddess Seshat can be found in the book published by German Egyptologist Dagmar Budde. This book is still the most comprehensive study devoted to this ancient Egyptian female deity.[4] For the description of the sign and its parts shown in Figure 1 I decided to use the scheme from my previous study.[5]

Figure 1. The parts of the sign.

1. stem			4
2. rosette			3
2.1. central disc			2
2.2. petals[6]			
3. arc			
4. two vertical feathers	}	horns (Figure 2b)	1

Two, pp. 196–227; MAGDOLEN, D. The Development of the Sign of the Ancient Egyptian Goddess Seshat down to the End of the Old Kingdom: Analysis and Interpretation. Part Three, pp. 55–72.

[2] In their hieroglyphic dictionary P. Vomberg and O. Witthuhn describe both variants of the sign of Seshat (R 20 and R 21) as "flower (?) with horns". VOMBERG, P., WITTHUHN, O. *Hieroglyphenschlüssel*, p. 297.

[3] Arguments and conclusions formulated in this paper are based on the study of signs of Seshat coming from all periods of ancient Egyptian history.

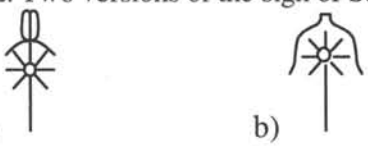
[4] BUDDE, D. *Die Göttin Seschat.*

[5] MAGDOLEN, D. The Development of the Sign of the Ancient Egyptian Goddess Seshat down to the End of the Old Kingdom: Analysis and Interpretation. Part One, p. 47.

[6] The number of petals is variable. The rosette most frequently consists from five and seven petals.

In Figure 2 we can see two versions of the sign. Both versions are found in the iconographic, epigraphic and palaeographic records.[7] The version in Figure 2a represents the earlier form of the sign and 2b the later one.[8]

Figure 2. Two versions of the sign of Seshat.



We can see that the principal difference between 2a and 2b is in the upper part of the sign. The upper part in version 2b is formed by the hieroglyphic sign representing horns (F 13)[9] turned up side down. However, as we can see below, the shape of this part of the sign was not always the same (see references in Table 1). The ancient Egyptian iconographic and epigraphic records reflect the various forms which can differ from that shown in Figure 2b. It means that to use the term "horns" in relation to this part of the sign in every case after the Old Kingdom Period is a little bit misleading. The shape of the upper part of the sign in the form indicating horns and its symmetric division can be observed on the seals dated as early as the Old Kingdom. It was discovered during the excavations of the royal tomb of Neferefre in Abusir.[10] The seal was inscribed with hieroglyphic text which included the name of the goddess and one of her epitheton and reads as: *Śšȝt nbt šs*.

In Figure 3 we can see a schematicdepiction of the sign. As can be seen, the arc has three basic variants that are distiguishable in the records. We can also observe a certain rule in the artistic depiction of the sign showing that the arc or the horns are mostly depicted in a symmetric relationship to the petals of the rosette.[11] This fact is attested to in a majority of epigraphic records and it is important in the context of discussion presented below.

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[7] The shapes of the sign shown in figure 2 represent conventional versions occurring in the hieroglyphic sign-list used in the specialized program, WinGlyph, for processing hieroglyphic texts on a computer. The program was created by the Center for Computer-aided Egyptological Research at Utrecht University.

[8] BUDDE, D. *Die Göttin Seschat*, p. 1.

[9] GARDINER, A. *Egyptian Grammar*, p. 462.

[10] The text was published in the autographic version. See VERNER, M. et al. *The Pyramid Complex of Raneferef*, p. 258 (no. 208).

[11] The exceptions are extremely rare and deviations very small. BUDDE, D. *Die Göttin Seschat*, pp. 342–361.

Figure 3. A schematic shape of the sign showing the arc at different lengths in relation to the petals of the rosette.

a) b) c)

In connection with the shape of the sign of Seshat (from the period after the Old Kingdom), it is necessary to say that there are some rare versions of the sign depicted without the vertical stem coming out of the lowermost part of the central disc of the rosette between its two lower petals.[12] It is important to stress the fact that the rosette in such a form (), without the vertical petal pointing down, is put simply on the head of the goddess. So, the uppermost petal in the rosette is without its symmetrical counterpart.[13] On the other hand, there is the iconographic depiction of the sign in the temple of Derr without the uppermost vertical petal.[14] In this case the rosette consists unusually of six petals only.[15]

It is also important to say that some palaeographic references reflect certain simplifications of the sign. In such cases the rosette depicted under the horns consists of five short lines radiating from the central point creating a resemblance to a star;[16] however, I do not agree with the interpretation made by some scholars that the rosette with five petals in the sign represents a star.[17]

For the context discussed in this paper it is important to consider the symbolic role of the goddess Seshat in the ancient Egyptian religion and culture.

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[12] PARKINSON, R. *Cracking Codes. The Rosetta Stone and Decipherment*, p. 133 (no. 48). In the depiction presented in this publication the rosette consists of five petals.

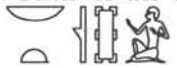
[13] The depiction of the relief scene published in Lepsius' volume III of his Denkmäler (LD III, Bl. 55) is probably a mistake. See BUDDE, D. *Die Göttin Seschat*, pp. 135–136, note 272 and p. 136, Abb. 20. As for the written records cf. also DE BUCK, A. *The Egyptian Coffin Texts*. Volume I, p. 33 (d), Volume V, p. 2 (b), Volume VI, p. 340 (c).

[14] This is the only example of the sign in such a form I know of.

[15] BLACKMANN, M. *The Temple of Derr*, p. 57, fig. 26, Pl. XLIV.

[16] Cf. BUDDE, D. *Die Göttin Seschat*, p. 40, note 217.

[17] As for the arguments against the star interpretation of the rosette see MAGDOLEN, D. The Development of the Sign of the Ancient Egyptian Goddess Seshat down to the End of the Old Kingdom: Analysis and Interpretation. Part Three, p. 65. See also BUDDE, D. *Die Göttin Seschat*, p. 43.

Some of the epitheta related to her activities are significant for the interpretation of her symbol presented here.[18] Based on the earliest ancient Egypian iconographic[19] and epigraphic records[20] we can say that building activities and the sacral architecture represent some of the earliest contexts in which Seshat appears. One of her epithets,  ('Lady of Builders'), found in Pyramid Texts[21] reflects the sort of activities of the goddess sufficiently. The relief scenes and hieroglyphic inscriptions show us convincingly that Seshat was the principal deity symbolically participating in the foundation ceremony of royal buildings, especially, during the ritual known as the 'stretching of the cord'.[22] The purpose of this ritual ceremony (see Fig. 11) was to determine the axis and the corners of the structure as well as to fix the ground plan of the building. These activities were, in fact, very closely connected with the orientation of the building. Other epithets of Seshat such as ('Lady of Writing'),  ('Lady of Hieroglyphs'), ('Foremost of the House of the Books') and ('Foremost of the House of Life'), reflect her role as the patroness of scribes, in other words educated and wise people.

II.

My Egyptological research during the 1990s was focused on the problems related to the orientation of the Old Kingdom royal tombs in ancient Egypt. After my years of study of ancient Egyptian records, I formulated a new theory and method of finding the cardinal points.[23] I decided to call it the 'rhombic method'. Its name is derived from the result of measurements that create the shape of rhombus. The rhombus is oriented by its diagonals connecting the opposite vertices to the cardinal points. In principle, this method is based on the observation of shadows of two gnomons, which change their length and orientation in time and space. In fact, the rhombic method can be used in two

[18] BUDDE, D. *Die Göttin Seschat*, pp. 24–27.

[19] ENGELBACH, R. A Foundation Scene of the Second Dynasty, Pl. XXIV (Egyptian Museum Cairo, JdE 33896).

[20] SCHÄFER, H. *Ein Bruchstück altägyptischen Annalen*, pp. 20, 22, 29, Taf. 1.

[21] SETHE, K. *Die Altaegyptischen Pyramidentexte*, p. 331, § 616.

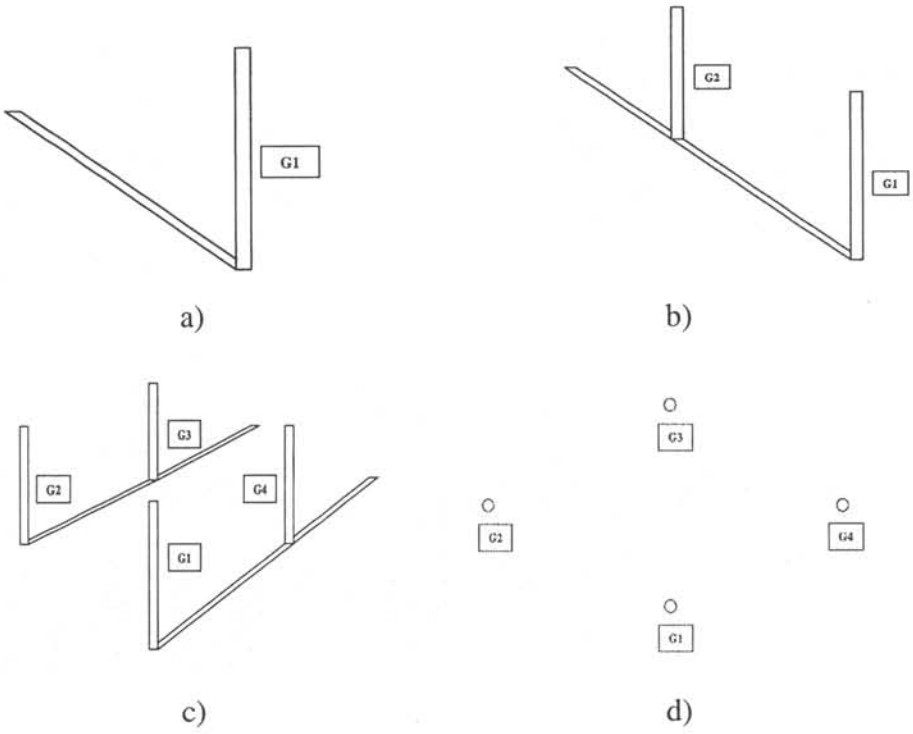
[22] EL-ADLY, S. *Das Gründungs- und Weiheritual des ägyptischen Temples von der frühgeschichtlichen Zeit bis zum Ende des Neuen Reiches*.

[23] The summary of my research was published in the proceedings of the conference held in Prague in 2000. See MAGDOLEN, D. On the orientation of Old Kingdom royal tombs, pp. 491–498.

ways – with or without the help of the instrument known as a merkhet.[24] This method can be briefly described as follows.

A) The measurement Without the Merkhet (Figure 4). The principle of the measurement is based on the length of the shadow. Before noon the gnomon (G 1) is fixed on the ground vertically to a horizontal surface (Fig. 4a). The end of the shadow cast by G 1 is marked, and in this place another gnomon, G 2, is fixed in the same way as G 1 was. The length of G 1 is the same as the length of G 2. This is a necessary condition for achieving accuracy of measurement and for the success of the experiment as a whole. The consequence of both gnomons having the same length is that the length of the shadow cast by G 1 on the horizontal (and level) surface will be the same as that of G 2.

Figure 4. The rhombic method (A).



[24] ISLER, M. The Merkhet, pp.53–67; EDWARDS, I. E. S. *The Pyramids of Egypt*, pp. 248–249; MAGDOLEN, D. An Astronomical Inscription of the Berlin Merkhet, pp. 80–87.

At the moment of fixing G 2 both shadows are aligned in the same line and in the same direction (Fig. 4b). From this moment on the careful observation of the shadows becomes important. The shadows shorten as the sun rises higher and higher above the horizon. After the noon and the culmination of the sun above the southern horizon, the shadows lengthen. During this period, it is important to measure the length of the shadows of G 1 and G 2 carefully in order to identify the moment in time when the length of shadows reaches the value observed and marked in the morning. At this moment the ends of both shadows are marked on the surface again and additional two gnomons, G 3 and G 4, can be fixed at those positions. The lengths of G 3 and G 4 are not important in this process, but if the lengths of all vertical gnomons are the same then the lengths of all shadows must be the same, too. The result of this measurement will create a shape in the form of a rhombus with four gnomons positioned in its vertices (Fig. 4d). Diagonals of this rhombus are perpendicular to each other and oriented to the cardinal points. The rhombus reflects the symmetry of the east-west as well as north-south axes. Both diagonals intersect exactly in the centre of the rhombus.

B) The Measurement With the Merkhet. The principle of this measurement is similar to that described above, and in fact, is derived from it. However, the essential difference is in the distance between G 1 and G 2. In principle, the distance between G 1 and G 2 in the measurement A is always given by the length of the shadow cast by G 1 at a particular moment in time before noon. In measurement B, this distance is arbitrary and only depends on our decision. It can be shorter than the length of the shadow cast by G 1. In this case G 2 will be placed vertically into the surface at a point in the shadow of G 1. The moment of fixing G 2 is determined with the help of merkhet in the function of sundial.[25] After the noon, the length of shadow projected onto the merkhet is observed. When the end of shadow touches the mark on the merkhet, additional two gnomons, G 3 and G 4, are inserted into the shadows of G 1 and G 2 in the same distance given by G 1 and G 2 as it was in the morning. The result of the measurement will be the same as that of measurement A. In other words, the four gnomons will create a rhombus with the gnomons situated in the vertices and oriented by diagonals to the cardinal points. The geometrical and symmetrical characteristics of the rhombus are, in principle, the same as in measurement A. The final shape of the rhombus in both cases depends on the time of orientation of the shadow of G 1 in the morning.[26]

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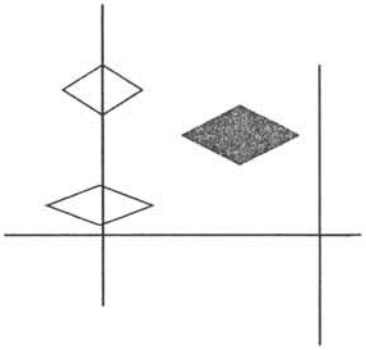
[25] See BORCHARDT, L. Die altägyptische Zeitmessung, pp. 26–53.

[26] Both measurements can be used on every day within the year, however, one must consider the transit of the sun through the east-west plane each day from the vernal equinox till the autumnal equinox and the practical consequences of this transit. At this

Figure 5. A schematic shape of rhomboids from the builder's mark found in the tomb of Neferefre.



The theory based on the principle described above and its accuracy can be easily verified experimentally. Such a set of experiments carried out during the 1990s showed that the theory based on the rhombic method works.[27] Earlier theories dealing with the problem of the orientation of sacral or funerary monuments and finding the cardinal points were based mostly on the iconographic and/or textual interpretation of the stretching of the cord ceremony[28] mentioned above. In connection with the theory of the rhombic method and its support in the ancient Egyptian records it is important to stress the fact that during the excavations of the royal tomb of the Firth dynasty king Neferefre at Abusir in the 1980s 'A set of builder's inscriptions, marks and drawings painted in red and black colour on two grey limestone blocks (or, rather, one block broken in two parts) was found in the middle of the eastern face of the foundation platform of the pyramid'.[29] A part of this graffito from Abusir contains one vertical line with two rhomboids of different shape placed one above the other and another one rhombus painted in red depicted at a short distance to the north[30] (Fig. 5). The rhombus painted with the vertical line

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moment the shadows are aligned in the east-west plane and, therefore, one cannot create any rhombus on the ground.

[27] The results of the experiments are presented in my dissertation. The accuracy of measurements are comparable with the known deviations of the sides of the pyramids from the cardinal points. Cf. ARNOLD, D. *Building in Egypt. Pharaonic Stone Masonry*, p. 15.

[28] Some scholars say that the observation of the stars in the nightly sky was important in the process of finding the cardinal points. This is because some later inscriptions found in the temples mention the stars.

[29] VERNER,. M. et al. *The Pyramid Complex of Raneferef*, p. 187.

[30] This builder's mark was published for the first time in 1997 (M. Verner, Setting the Axis: an ancient *terminus technicus*, pp. 433–436), in the year of my dissertation

occurs also on other monuments built in the Abusir area.[31] In my opinion, the occurrence of the rhombus in the axis of the monumental royal building can be interpreted in favour of the rhombic method in the context of the discussion regarding which of the methods was actually used in ancient Egypt for finding the cardinal points and for determining the orientation of the monuments. In other words, the rhombus occurring in the graffiti may have been painted by ancient Egyptian builders as the symbol for the rhombic method used to find the cardinal points and orientate the building itself.

III.

Let us focus our attention on measurement B. The result of this measurement was based on the use of four gnomons arranged at the end of the experiment in the shape of one rhombus. Now imagine that we wish to repeat and multiply the experiment at different moments in time on the same day, let us say, during the summer solstice. We would have two possibilities how to do it: first, the experiments could be carried out on different places with more gnomons used as G 1 and second option would involve the experiment all being done in one place starting always with one G 1. For our explanation the latter variant is relevant. With this variant we can use the same initial gnomon G 1 for all measurements. In other words, suppose that all the measurements will be carried out during one day at the same place and always starting with G 1. The shadow cast by G 1 will slowly change its length and orientation. In fact, every time G 2 is repositioned will mean the establishiment of a new rhombus. What will the geometry of the final picture composed of several rhomboids will look like? The visualization of such a situation is schematically documented in Figure 6. The final number of rhomboids will correspond directly with the number of times G 2 is positioned and recorded in the morning. In principle, we can have numerous rhomboids in the final picture. It is clear that G 1, situated in the central part of the final picture, is the initial gnomon common for all rhomboids. So, in Figure 6 we have eight rhomboids in total.

The rhomboids reflect different shapes in time. The principle of this change is that as the sun rises higher and higher in the sky the east-west diagonal of each following rhombus moves gradually more and more from the south to the north. As the sun crosses the east-west plane, the shape of every suceeding

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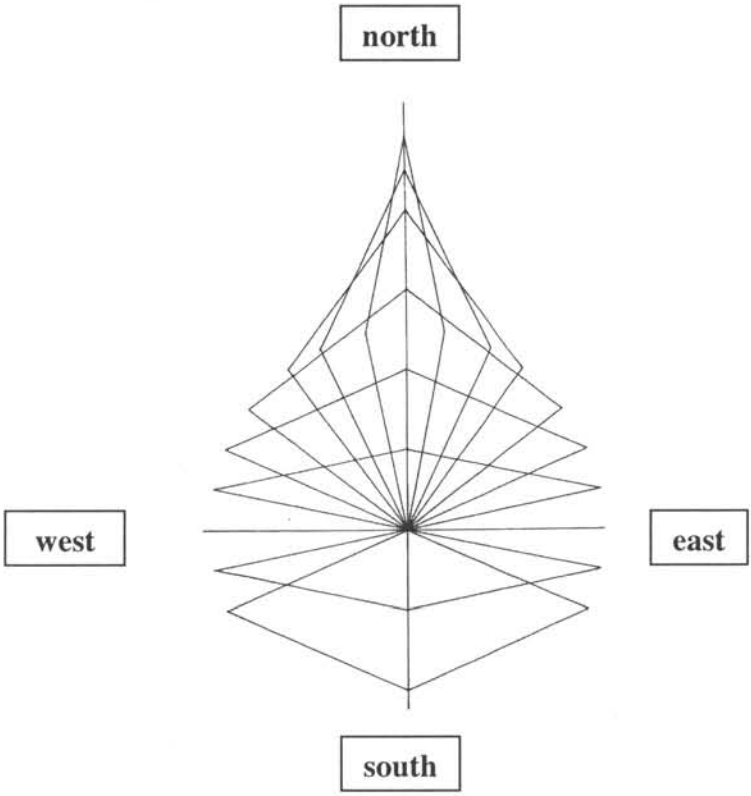
defence focused on the problems of the orientation of the Old Kingdom royal tombs in ancient Egypt.

[31] VERNER, M. Setting the Axis: an ancient *terminus technicus*, p. 436; See also MAGDOLEN, D. Some notes on one graffito from the Mastaba of Ptahshepses at Abusir, pp. 87–96.

rhombus will be more and more elongated in the north-south direction.[32] The north-south diagonals of all rhomboids will be situated in one line, while the east-west diagonals of the same rhomboids will lie in different lines (Fig. 6). In

Figure 6. Result of eight experiments carried out using measurement B.

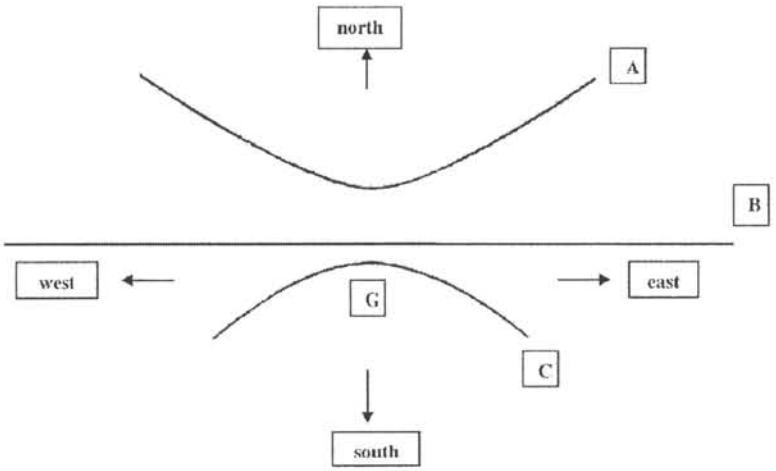


this connection it is interesting to see that all the east and west vertices of all the rhomboids form together a kind of curve, more precisely, a part of the circle, while all the north vertices of all the rhomboids, together with G 1, are arranged in one line. The picture shown in Figure 6 includes, in principle, all the

[32] The closer to the east-west plane the sun is, the more elongated in the same direction the rhombus will be. At the moment of the transit of this plane in the morning the shadow of the gnomon is oriented to the west. This situation repeats in the afternoon. Therefore, this transit is not a good time for producing the rhombus. This situation is, of course, relevant in the period from the vernal equinox to the autumnal equinox. Therefore, in this connection knowledge of the yearly movement of the sun in the sky was very important.

possibilities in which the shadows cast by G 1 can be oriented from one summer solstice to another one. The rhomboids placed under the horizontal line represent theoretically the situation in a year when the rising sun crosses the celestial equator and moves further to the north on the eastern horizon. The consequences of this situation will be that the morning shadows of G 1 will be situated between the south and the west until the sun reach the azimuth 90°. The situation will symmetrically repeat in the afternoon after crossing the east-west plane by the sun. This time, the shadows of G 1 will be situated between the east and south.

Figure 7. The curves traced by the tip of shadow.



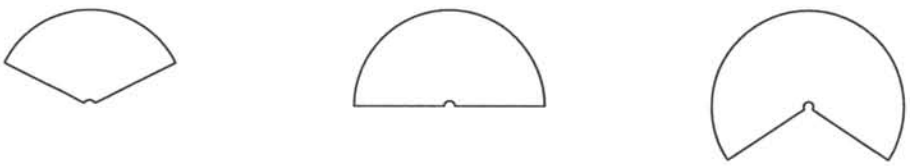
A – winter solstice hyperbola
B – vernal and autumnal equinox line
C – summer solstice hyperbola
G – position of gnomon

It is important to understand that the tip of the gnomon traces the curve on the horizontal surface which changes its shape day by day with the seasons of the year. At the latitude of Egypt (north of the TC) at the time of the vernal/autumnal equinox it is a straight line and at the time of the summer/winter solstice it is a hyperbola (Fig. 7). In fact, the area between both

hyperbolic curves represents the surface where the tip of the shadow can move.[33]

Using the principle of multiple experiments using measurement B, the shadow cast by G 1 will move in the limits given by the shapes of the surfaces shown in Figure 8. The first surface (Fig. 8a) would correspond with the winter solstice when the first morning shadow is oriented in the northwestern quadrant and the last afternoon shadow is oriented in the northeastern quadrant. The second surface (Fig. 8b) would corresponds with the equinox when the first morning shadow is oriented to the east and the last afternoon shadow is oriented to the west. And the third surface (Fig. 8c) would show the situation at the summer solstice when the first morning shadow is oriented to the southwestern quadrant and the last afternoon shadow is oriented to the southeastern quadrant.[34]

Figure 8. Shape of the surface in which the shadows can move according to measurement B.



a) b) c)

After removing gnomons at the end of the experiments using measurement B, some small pits will remain on the ground's surface. This situation is well documented in Figures 9a and 9b. The arrangement of these pits is very interesting. In fact, it is similar to the silhouette of the arc above the rosette in the sign of the goddess Seshat. The shape of the sign will be more clearly emphasized when we join together the vertices of all rhomboids in such a way that all the pits left by G 2, G 3 and G 4 on the ground will be connected with G 1, and all G 2 will be connected with G 4 step by step as shown in figure 9c. The similarity between the final geometric shape and the sign of Seshat will be evident (Figures 9c and 9d).

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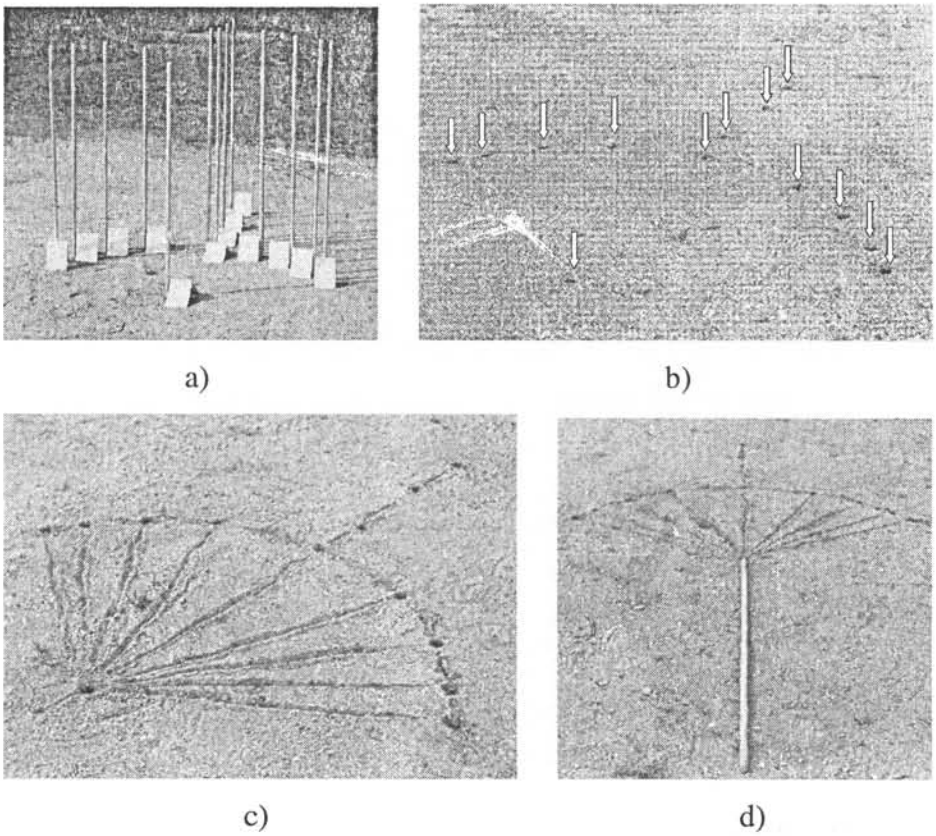
[33] Changing shape of the hyperboles traced by the tip of the gnomon within the year can be seen in the animation accessible on the http://www.physics.ohio-state.edu/~durkin/sundial/anima.gif.

[34] Compare with the animation cited in note 33.

The arc in the sign of Seshat has remarkable tendency to keep the left-right symmetry (see Fig. 3). The predominant majority of signs convincigly shows, that in principle, the ends of the arc are situated symmetrically on both sides of the sign. A similar symmetry can be observed in the case of the apparent motion of the heavely bodies such as the stars, the moon and the sun in relation to the meridian.[35]

Figure 9. Silhouette of the sign formed by the rhombic method according to measurement B (the arrows in picture (b) show the pits left by gnomons after four measurements).

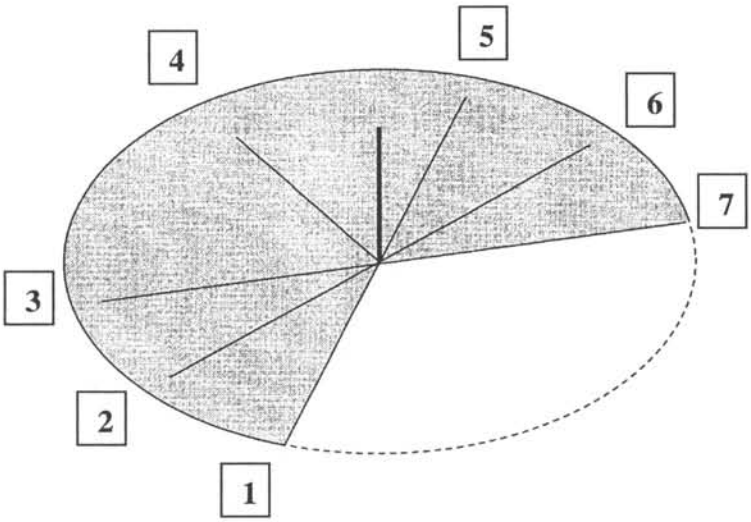


[35] To the relationship of the culminating sun to the meridian see ISLER, M., *Stick, Stones & Shadows. Building the Egyptian pyramids*, p. 165.

It is evident that one of the most frequent numbers related to the rosette, more precisely, to the number of petals in it, is seven (see Table 1). And it is remarkable that the number, seven, can also be found in context of the principal geographical directions to which the shadows cast by the gnomon placed on the ground can be oriented at the latitude north of the TC (see Fig. 10). The shadows can be oriented to:

1) the point of sunset during the summer solstice,
2) the point of sunset during the vernal and autumnal equinoxes,
3) the point of sunset during the winter solstice,
4) the north where the sun never culminates above the horizon in Egypt (north of the TC),
5) the point of sunrise during the summer solstice,
6) the point of sunrise during the vernal and autumnal equinoxes,
7) the point of sunrise during the winter solstice.

Figure 10. Schematic picture of the gnomon and the orientations of its shadows in relation to the horizon.



Between points three and four, as well as four and five, other significant geographical points can eventually be identified. These points would represent the northwest and the northeast respectively. In such a case the number of directions would increase from seven to nine. It is evident that in such a list of the principal geographical directions the direction of south is missing. In my opinion, that is why the lowermost vertical petal in the rosette was not depicted in the sign of Seshat. In other words, the lowermost vertical petal would correspond symbolicaly with the south. And since on the territory of Egypt

(north of the TC) the sun never culminates above the northern horizon, the shadows can never be oriented to the south. Each of the geographical directions is very important in context of orientation in space and time including the south; however, north of the TC the shadow cast by the gnomon cannot be oriented in this direction. Of course, this rule is not valid southwards of the TC. This area, however, did not form the historical territory and homeland of the ancient Egyptians. The southernmost boundaries of Egypt were in the area of Aswan (24° 05' N).[36]

So, in the light of the arguments presented above it can be said that the sign of Seshat can be interpreted as the specific symbol for the principal geographical directions. It would consists of the vertical gnomon and directions to which its shadows cast on the ground can be oriented. These directions were accompanied with the arc the length of which represents the limits in which the shadows can move. Thus, the stem in the sign would correspond with the gnomon, the rosette – consisting of petals arranged according to certain rules – would be identified with directions in which the shadows can be oriented at the latitude of Egypt north of the TC. The arc with two feathers or the horns, depicted in a later version of the sign, could be interpreted as the limits in which the shadows can move in connection with the path of the sun in different seasons of the year. The shortest path of the sun in the sky is at the time of the winter solstice and it is longest at the summer solstice. The shortest arc in the sign touches the uppermost petals of the rosette and the longest one touches the lowermost petals. Thus, the shortest arc would correspond with the path of the sun at the winter solstice and the longest arc would correspond with the path of the sun at the summer solstice. The arc touching the horizontal petals in the rosette would symbolise the path of the sun during both equinoxes.

Table 1 contains various references to the frequent shapes of the sign as found from the Old Kingdom to the Ptolemaic Period. Individual components of the sign reflect artistic variability in shape, in number and in size. This can be observed not only in different historical periods, but within the same historical period and, in the same place.[37] This fact enables us to identify and formulate certain free parameters according to which the sign could have been depicted. In fact, these free parameters would include all parts of the sign:

– the length of the stem,
– the number of the petals in the rosette,
– the shape of the petals in the rosette,
– the distribution of petals around the centre of the rosette,

[36] BAINES, J., MÁLEK, J. *Atlas of Ancient Egypt*, p. 72.
[37] Cf. BUDDE, D. *Die Göttin Seschat*, p. 42.

– the shape and length of the arc with two feathers or horns above the rosette.

Despite the existence of these free parameters, of course, certain rules (necessary conditions) concerning the design and graphic depiction of the sign, such as the symmetry of the sign or the absence of the lowermost petal in the rosette, must have been respected.

Figure 11. The stretching of the cord ceremony. Eighteenth Dynasty (Hatshepsut). Karnak.

In my opinion, it would be interesting to focus the future research on the analysis of the terminology related to the cardinal points, cosmology, and later versions of the name of Seshat (*śfḫt ʿbwy* and *śfḫt ʿbw*). Some inscriptions as that found in the last pyramid of the fifth dynasty built for the King Unas show that the term *ʿb* 'horn', was used in a cosmological context. The inscription transcribed[38] and translated[39] below occurs on the north wall of the antechamber placed in the vertical axis of the pyramid. The text reads as follows:

'Hail to you, Bull of Re who has four horns, a horn of yours in the west, a horn of yours in the east, a horn of yours in the south, and a horn of yours in the north.' In ancient Egypt the number four had symbolic meaning and it was related to the cardinal points.[40]

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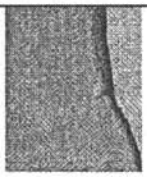
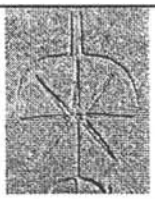
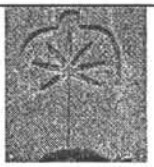
[38] SETHE, K. *Die Altaegyptischen Pyramidentexte*, p. 242.

[39] FAULKNER, R. O. *The Ancient Egyptian Pyramid Texts*, p. 93; Cf. ALLEN, J. P. *The Ancient Egyptian Pyramid Texts*, p. 56.

[40] WILKINSON, R. H., *Symbol & Magic in Egyptian Art*, pp. 133–135.

Table 1.

Number	Shape of the sign	Provenance	Date	Bibliography
1		Saqqara	Dynasty 3/4 Khabausokar	M. Murray, *Saqqara Mastabas*, Volume I, London 1905, pp. 2–3, Pls. 1, 2, 39.
2		Abusir	Dynasty 5 Sahure	L. Borchardt, *Das Grabdenkmal des Königs Sa3hu-re'*, Band II (Wandbilder), Abbildungsblätter, Osnabrück 1981, Bl. 1.
3		Saqqara	Dynasty 6 Neferseshem-seshat	L. Borchardt, *Denkmäler des Alten Reiches (ausser den Statuen) im Museum von Kairo*, Teil 1, Berlin 1937, pp. 191–198; Pls. 41, 42.
4		Saqqara	Dynasty 6 Pepy II	G. Jéquier, *Le monument funéraire de Pepi II*, Tome II (Le Temple), Le Caire 1938, p. 29, Pls. 36, 38.
5		Lisht	Dynasty 12 Senusret I	J. Baines, J. Málek, *Atlas of Ancient Egypt*, Oxford 1992, p. 133.
6		Karnak	Dynasty 18 Hatshepsut	D. Arnold, *Die Tempel Ägyptens*, Weltbild Verlag, Augsburg 1996, p. 118

Number	Shape of the sign	Provenance	Date	Bibliography
7		Karnak	Dynasty 18 Thutmose IV	H. Chevrier, Rapport sur les travaux de Karnak, In Annales du Service des Antiquités de l'Égypte, Tome 51, IFAO, Le Caire 1951, p. 568, Fig. 1.
8		Luxor	Dynasty 19 Rameses II	W. Forman, S. Quirke, *Hieroglyphs and the Afterlife in Ancient Egypt*, OPL, London 1996, p. 10.
9		Kom el-Rabia	Dynasty 19 Rameses II	A. M. el-Sayed, *A New Temple for Hathor at Memphis*. Aris&Phillips Ltd., Warminster 1978. Pl. XII.
10		Karnak	Dynasty 19 Merenptah	B. Porter, L. B. Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*, Volume II (Theban Temples), AM, Oxford 1994, p. 131.
11		Medinet Habu	Dynasty 20 Rameses III	D. P. Silverman, Divinities and deities in ancient Egypt, In B. E. Shafer (ed.), *Religion in Ancient Egypt*. Routledge, London 1991, p. 20, Fig. 9.
12		Medinet Habu	Dynasty 20 Rameses III	B. Porter, L. B. Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*, Volume II (Theban Temples), AM, Oxford 1994, p. 502.

Number	Shape of the sign	Provenance	Date	Bibliography
13		Karnak	Dynasty 20 Rameses IV	B. Porter, L. B. Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*, Volume II (Theban Temples), AM, Oxford 1994, p. 236.
14		Karnak	Dynasty 25 Shabaka	B. Porter, L. B. Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*, Volume II (Theban Temples), AM, Oxford 1994, p. 197.
15		Kom Ombo	Ptolemaic Period	L. Borchardt, Die altägyptische Zeitmessung, In E. v. Bassermann-Jordan, *Die Geschichte der Zeitmessung und Uhren*. Volume 1. Berlin, Leipzig, 1920. Taf. 17/3.
16		Edfu	Ptolemaic Period	B. Porter, L. B. Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings*. Volume VI (Upper Egypt, Chief Temples), AM, Oxford 1991, p. 136.

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