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# ON PYRAMID CAUSEWAYS

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The work of the Saqqara Geophysical Survey Project has involved a close examination of the landscape of this important necropolis, prompting a reconsideration of the role landscape may have played in the selection of sites for Early Dynastic royal burials at Saqqara. In this paper, the ideas of other authors are developed to argue that our modern view of Saqqara, which tends to regard the site from the perspective of the Nile Valley, is different from that of Egyptians of the Early Dynastic Period and early Old Kingdom. Furthermore, by altering our perspective of the site, a symbolic origin for the use of causeways in pyramid architecture can be proposed.

SAQQARA served as the principal necropolis and cult centre for Memphis throughout the dynastic period. The site was at its most important during the Early Dynastic Period and Old Kingdom, when many pharaohs selected the area for the construction of their pyramid complexes. The most important monument at Saqqara is the Step Pyramid complex (fig. 1), attributed to the late Third Dynasty pharaoh, Netjerikhet, more commonly known as Zoser (2630–2611 BC).

Today, the Saqqara necropolis is approached from the fertile Nile Valley to the east, with the road to the site ascending the steep-sided limestone escarpment on which the pyramids were built (the pyramid plateau). It is not unreasonable to state that the site is generally viewed from this perspective, a perspective that many of the ancient monuments do little to challenge. For example, the causeway of Unas (2356–2323 BC) leads from the valley temple at the limit of the cultivation, close to the modern site entrance, and climbs the escarpment along a minor gully before reaching the mortuary temple and pyramid. In the north of the necropolis, a series of First and Second Dynasty mastabas, most likely the grand tombs of high ranking officials,<sup>1</sup> were perched close to the edge of the escarpment overlooking the modern village of Abusir and perhaps, in antiquity, visible from Memphis itself (see fig. 1).<sup>2</sup> As discussed below, however, a number of authors have suggested that during the Early Dynastic Period at least, the site may have been viewed from a different perspective, that of the Abusir wadi. Having spent a number of years studying the landscape and geology of North Saqqara, as part of the Saqqara Geophysical Survey Project,<sup>3</sup> I can propose an explanation for this ancient perspective.

## The Abusir wadi

The Abusir wadi (fig. 2) is a former seasonal water course, bounded to the east by the higher ground of the pyramid plateau and to the west by a series of more gentle escarpments and outliers forming the edge of the western desert. To the south, the wadi is limited by an outcropping ridge of limestone, one of the upper fossil rich beds of the Giran el-Ful member of the Maadi Formation,<sup>4</sup> and to the north the wadi opens out into the site of the former Abusir lake. The wadi is unlikely to have seen any significant surface water for thousands of

<sup>1</sup> A. Dodson, 'The Mysterious Second Dynasty', *KMT* 7/2 (1996), 19. See also W. Kaiser, 'Zur Entwicklung und Vorformen der frühzeitlichen Gräber mit reich gegliederter Oberbaufassade', in P. Posener-Krieger (ed.), *Mélanges Gamal Eddin Mokhtar* (BdE 97; Cairo, 1985), II, 33.

<sup>2</sup> R. Stadelmann, 'Die Oberbauten der Königsgräber der 2. Dynastie in Sakkara', in Posener-Krieger (ed.), *Mélanges*

*Mokhtar* II, 295.

<sup>3</sup> C. D. Reader, 'The Solid Geology of North Saqqara', in I. Mathieson et al., *Report of the Saqqara Geophysical Survey Project* (forthcoming).

<sup>4</sup> Reader, in Mathieson et al., *Saqqara Geophysical Survey* (forthcoming). See also M. Youssef et al., 'Geological Studies on the Saqqara Area, Egypt', *Neues Jahrbuch für Geologie Paläontologie* 186 (1984), 125–44.

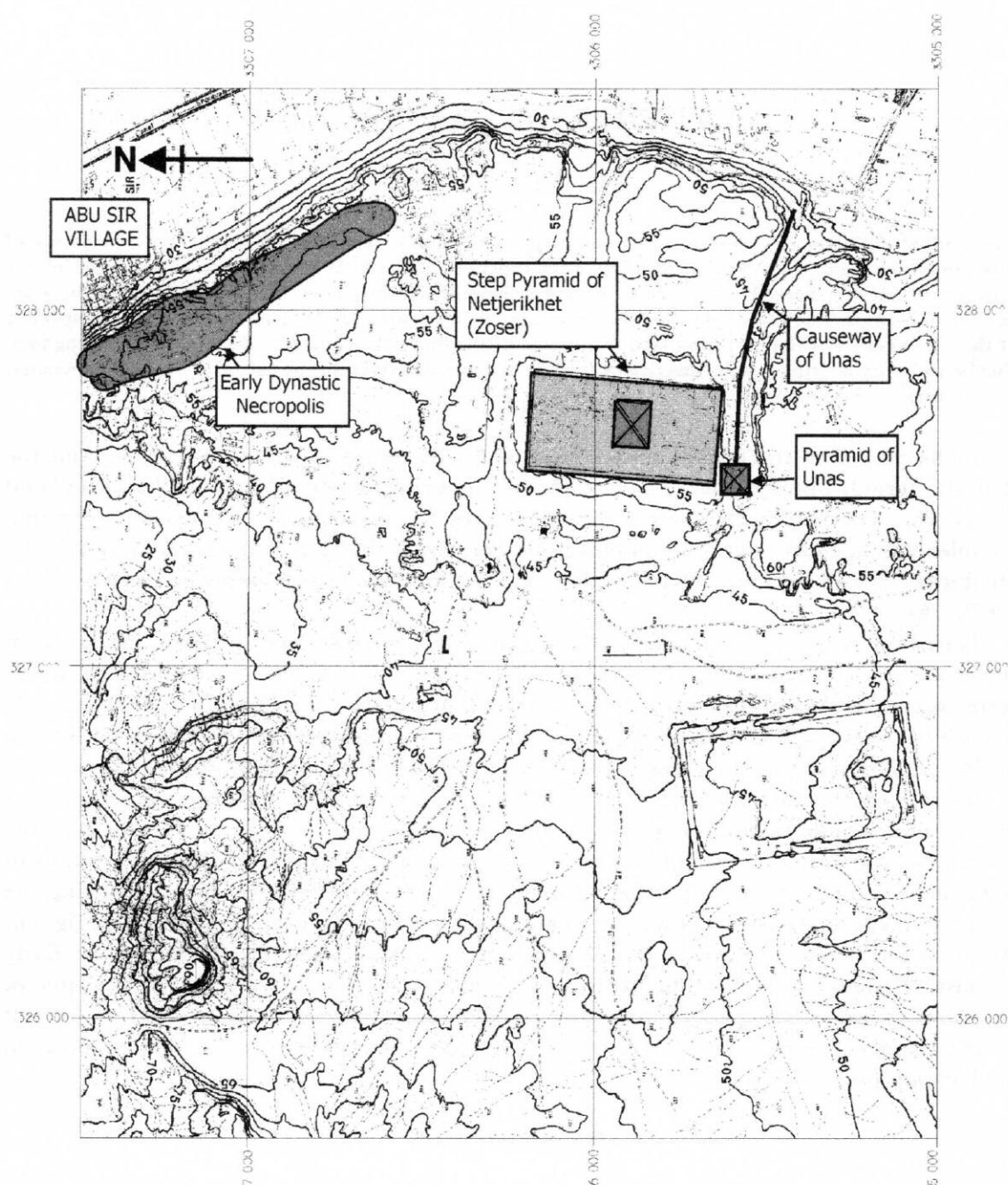


FIG. 1. Map of North Saqqara showing the Step Pyramid of Netjerikhet (Zoser), the pyramid and causeway of Unas, the Early Dynastic necropolis and the modern village of Abusir.

years, but in the early morning before the heat of the day, sand at the northern end of the wadi is noticeably damp and supports a scrub vegetation that adds a little green to the otherwise arid landscape (fig. 3).

That the wadi was regarded as the principal approach to the Saqqara necropolis during the Early Dynastic Period is not a new idea.<sup>5</sup> Bárta and Vachala discuss the tomb of the early Fourth Dynasty official Hetepi (see fig. 2), which is located on the western edge of the Abusir

<sup>5</sup> J. Malek, 'The Temples at Memphis. Problems Highlighted by the EES Survey', in S. Quirke (ed.), *The*

*Temple in Ancient Egypt: New Discoveries and Recent Research* (London, 1997), 92.

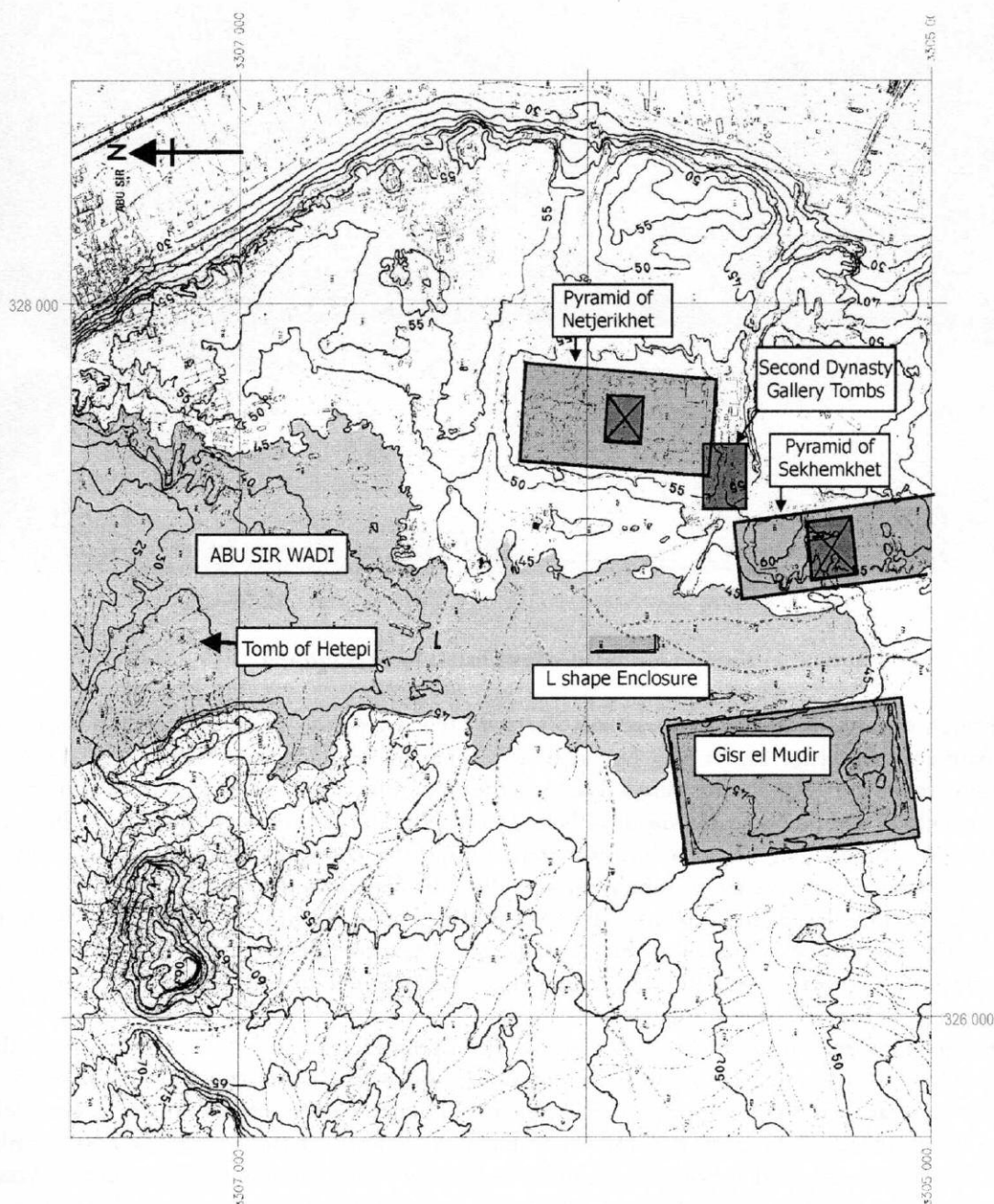


FIG. 2. The Abusir wadi and the Early Dynastic royal burials.

wadi.<sup>6</sup> Only the northern façade of this tomb is decorated with niches, the other façades being plain. The explanation given by Bárta and Vachala for this limited decoration is that the northern façade would be seen first by visitors entering the site along the Abusir wadi. Without elaborating, the authors also refer to other archaeological evidence from the region to support the view that the wadi was, at this early time at least, the principal approach to the necropolis.

<sup>6</sup> M. Bárta and B. Vachala, 'The Tomb of Hetepi at Abusir South', *Egyptian Archaeology* 19 (Autumn 2001), 33–5.





FIG. 3. View of scrub vegetation at the north end of the Abusir wadi.

### Early Dynastic royal burials at Saqqara

Although numerous tombs of First and Second Dynasty nobles are known at the northern escarpment edge (fig. 1),<sup>7</sup> it was not until the early Second Dynasty that there were any certain royal burials at the site.<sup>8</sup> These gallery tombs, including those attributed to Hetepsekhemwy (also possibly used by Nebra) and Ninetjer, are set well back from the edge of the escarpment (fig. 2) at a location that, unlike the contemporaneous nobles' tombs, would not have been visible to inhabitants of the Nile Valley to the east. Some authors also consider that the large enclosures situated within the Abusir wadi, west of the Step Pyramid enclosure (the Gisir el Mudir and the 'L-shape' or 'Ptahhotep' enclosure, fig. 2), are part of the Second Dynasty royal burials, suggesting that the enclosures had a mortuary role associated with the gallery tombs.<sup>9</sup>

Despite no limit of available space across the pyramid plateau, the construction of the early Third Dynasty pyramid complexes of Zoser and Sekhemkhet (fig. 2) was undertaken in the same area of the necropolis as the Second Dynasty gallery tombs. In fact, so closely were these structures located, that the superstructure of some of the Second Dynasty tombs may have been removed by Zoser's builders to make way for his pyramid complex.<sup>10</sup> Zoser may also have usurped some elements of earlier royal substructures as part of the extensive series of shafts and galleries that are present beneath the Step Pyramid enclosure.<sup>11</sup>

Whatever dictated the choice of sites for these step pyramids, it is argued that their location was not controlled by a need for a prominent site when viewed from the Nile Valley. The Step Pyramid is barely visible from the limit of inundation (fig. 4)<sup>12</sup> and it is evident that

<sup>7</sup> A. Tavares, 'Saqqara, North, Early Dynastic Tombs', in K. A. Bard (ed.), *Encyclopaedia of the Archaeology of Ancient Egypt* (London, 1999), 700.

<sup>8</sup> The number and extent of the Second Dynasty gallery tombs is not yet fully understood. For a recent summary of the latest understanding, see M. J. Raven, 'Les Fouilles de Leyde dans la tombe de Méryneith à Saqqara, Campagne 2001–2002', *BSFE* 155 (2002), 27–31.

<sup>9</sup> T. A. H. Wilkinson, *Early Dynastic Egypt* (London, 1999), 243–4.

<sup>10</sup> Wilkinson, *Early Dynastic Egypt*, 242.

<sup>11</sup> Stadelmann, in Posener-Kriéger (ed.), *Mélanges Mokhtar II*, 295.

<sup>12</sup> Despite the presence of modern excavators' debris shown on figure 4, the topography of the eastern plateau at Saqqara, with a steep sided escarpment, is such that the general principles argued here still stand: the sites of the Early Dynastic royal burials were not chosen so as to be visible from the Nile Valley.



FIG. 4. The Step Pyramid (arrowed) from the eastern edge of the site.

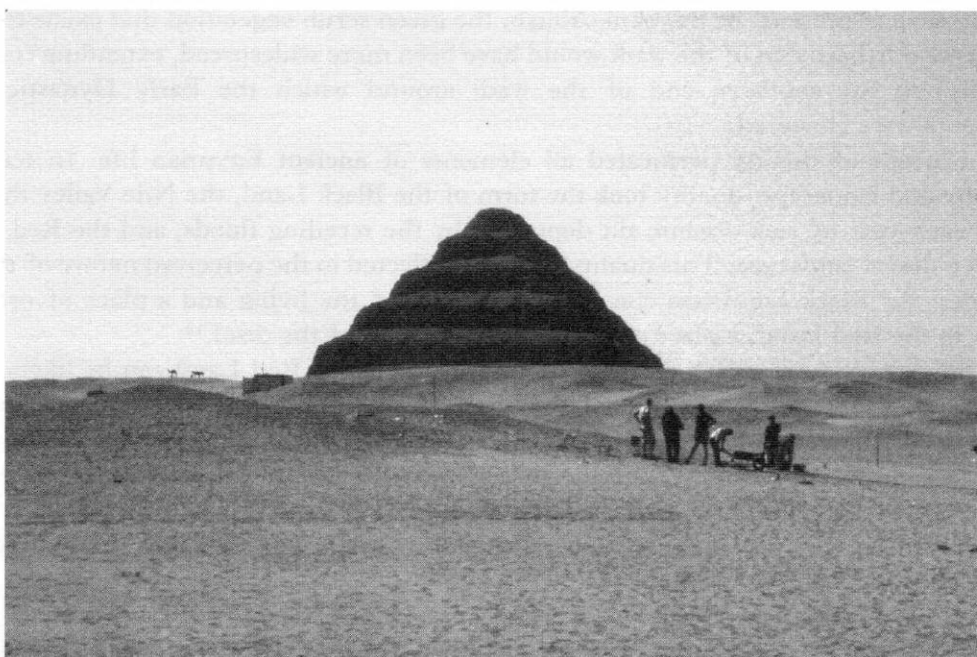


FIG. 5. The Step Pyramid from the Abusir wadi.

these Early Dynastic royal burials were grouped at the head of the Abusir wadi (fig. 2). This reinforces the view expressed by a number of authors, including Bárta and Vachala plus Wilkinson, that at this early time the Saqqara necropolis developed from the perspective of the Abusir wadi.<sup>13</sup> When this original perspective is accepted, the location of Zoser's pyramid becomes at once far more readily understandable (fig. 5).

The burial of Sekhemkhet (2611–2603 BC) heralded a hiatus in royal burials at Saqqara.<sup>14</sup> In the late Third and Fourth Dynasties, the royal necropolis moved to other sites such as

<sup>13</sup> D. Jeffreys and A. Tavares, 'The Historic Landscape of Early Dynastic Memphis', *MDAIK* 50 (1994), 150–1.

<sup>14</sup> Jeffreys and Tavares, *MDAIK* 50, 151.

Dahshur and Giza. The return to pyramid building at Saqqara was with the early Fifth Dynasty pyramid of Userkaf (2465–2458 BC). By this time, however, changes had been introduced in the layout of pyramid complexes and, probably for the first time, the pyramids of Saqqara were approached directly from the east, from the Nile Valley.

It has been suggested that the location (and possibly the orientation) of pyramid complexes at Saqqara may have changed as a result of a gradual southward shift in the 'centre of gravity' of Memphis during the Early Dynastic Period and Old Kingdom.<sup>15</sup> Whilst a correlation between pyramid sites and the location of Memphis is apparent for the necropolis at north Saqqara, when other Old Kingdom sites such as Dahshur, Giza and Abu Rawash are considered,<sup>16</sup> any such relationship becomes less evident. Furthermore, as some authors have noted, the late Old Kingdom pyramids of South Saqqara were closest to Middle and New Kingdom areas of Memphis,<sup>17</sup> which suggests that the more southerly location of the late Old Kingdom pyramids was controlled by other factors. For example, the location of the late Old Kingdom pyramids may reflect the changing distribution of natural lakes along the valley edge as the climate of Egypt became increasingly arid.

### The significance of the Abusir wadi

Climatic studies have shown that during the Early Dynastic Period, the climate of Egypt was less arid than it is at present.<sup>18</sup> Under these less arid conditions, which prevailed until perhaps as late as the end of the Fifth Dynasty, wadis would have been more extensively vegetated than at present. At Saqqara–Abusir, the green scrub vegetation that exists today at the extreme northern end of the wadi would have been more widespread, extending (perhaps seasonally) to the southern end of the wadi around which the Early Dynastic royal monuments were clustered.

The concept of duality permeated all elements of ancient Egyptian life. In terms of geography and landscape, duality took the form of the Black Land, the Nile Valley that was covered each year by rich organic silt deposited by the receding floods, and the Red Land, the barren desert landscape. This duality was also reflected in the perceived nature of the two landscapes: the Black Land was considered the land of the living and a place of order, in contrast to the Red Land, a place of chaos and the realm of the dead.<sup>19</sup>

Our modern understanding of the ancient attitude to the Red Land can be likened to a superstitious respect for or wariness of this place of disorder and chaos.<sup>20</sup> It is argued that the vegetated Abusir wadi represented to the ancient Egyptians an extension of the Black Land: a *cordon sanitaire* along which the living could travel into the Red Land to perform burials or associated rituals without entering a world of spiritual chaos and disorder. When considered in this way, the site of the Early Dynastic royal burials, clustered around the head of the wadi, can be readily explained.

### Evolution of the pyramid causeway

There is currently no evidence for causeways forming part of the pyramid complexes of Zoser and Sekhemkhet at North Saqqara,<sup>21</sup> nor is there any indication of a causeway to the

<sup>15</sup> Malek, in Quirke (ed.), *The Temple in Ancient Egypt*, 92–3.

<sup>16</sup> Jeffreys and Tavares, *MDAIK* 50, figs. 1 and 5.

<sup>17</sup> M. Lehner, *The Complete Pyramids* (London, 1997), 83.

<sup>18</sup> K. W. Butzer, *Environment and Archaeology: An Ecological Approach to Prehistory* (Chicago, 1971), 584.

<sup>19</sup> A. R. David, 'Mortuary Beliefs', in Bard (ed.),

*Encyclopaedia*, 534.

<sup>20</sup> T.A.H. Wilkinson, personal correspondence.

<sup>21</sup> However, see R. Stadelmann, 'The Development of the Pyramid Temple in the Fourth Dynasty', in Quirke (ed.), *The Temple in Ancient Egypt*, 1, in which it is argued that the columned entrance hall of the Step Pyramid enclosure may have served as an 'inner causeway'.



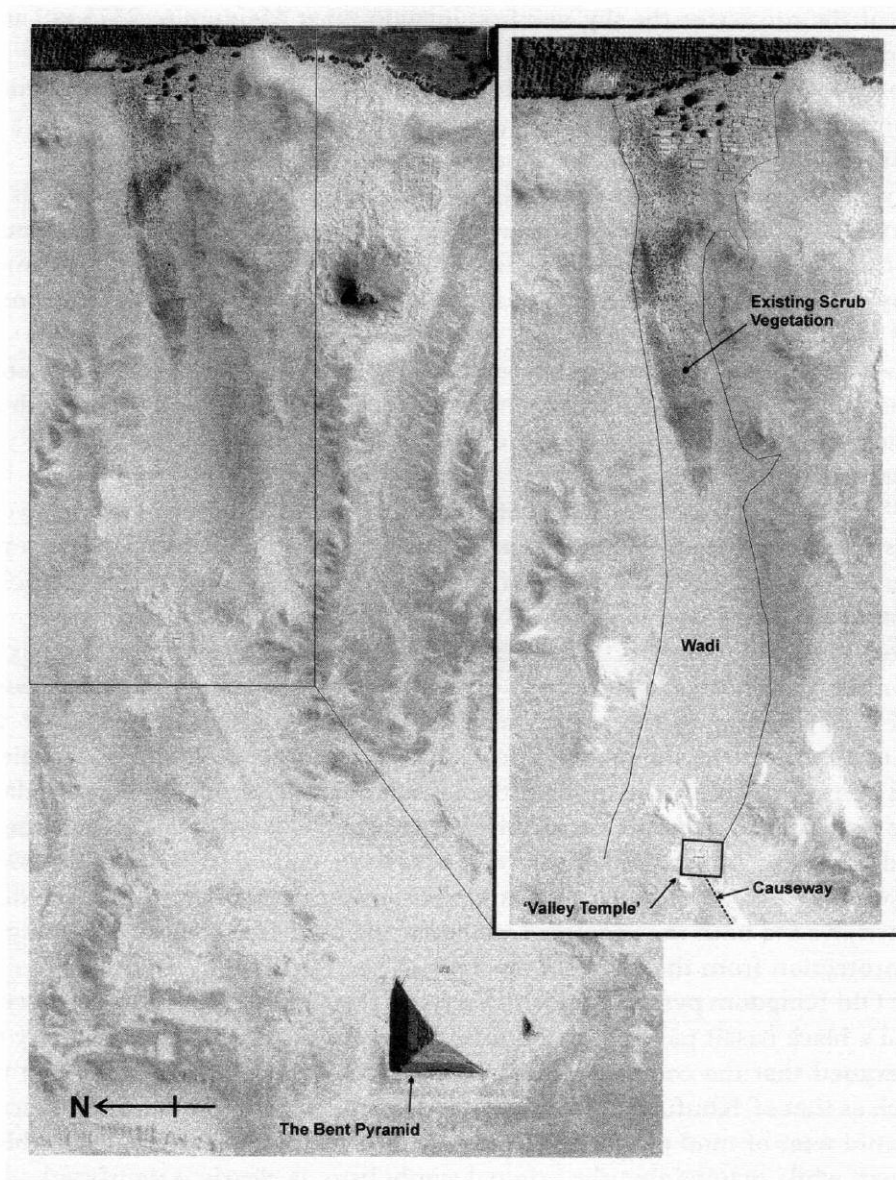


FIG. 6. The causeway of the Bent Pyramid running from the north-east corner of the pyramid to a temple at the edge of a wadi (satellite image courtesy of the Czech National Centre for Egyptology and the Czech Institute of Egyptology, after M. Bárta et al., 'Research at Abusir South in 2001–2002, Methods and Results', *Pamáky Archeologické* 94 (Prague, 2003), pl. 13).

Layer Pyramid at Zawiet el-Aryan.<sup>22</sup> By the early Fifth Dynasty, however, when pyramid building returned to Saqqara, two major changes had occurred:

- 1) the climate had become more arid, reducing the extent of wadi vegetation to levels similar to those noted today.
- 2) the orientation of the 'typical' pyramid complex had changed, from the north–south alignment of the Third Dynasty pyramid enclosures to a dominant east–west alignment, with a valley temple located in the east, at the edge of the cultivation, and a mortuary temple in the west, at the foot of the pyramid. It appears that this change in orientation, which heralded the introduction of the pyramid causeway and is generally considered to be associated with the

<sup>22</sup> V. Maragioglio and C. A. Rinaldi, *L'architettura delle piramidi menfite*, II (Turin, 1965), 41–50.



daily course of the sun across the sky, was first introduced at Meidum (c. 2575 BC) and subsequently used at the Bent Pyramid at Dahshur (c. 2560 BC).<sup>23</sup>

In the absence of extensive natural wadi vegetation, the pyramid causeway, which linked the valley and mortuary temples, represented an artificial extension of the Black Land in much the same way that the Abusir wadi had been perceived in earlier times.

The early causeways of Meidum and Dahshur were unroofed and, as the walls have not been preserved, we do not know whether they were decorated. However, a number of features of these early causeways, which have puzzled Egyptologists for some time, can be explained by the current hypothesis that the origin of the causeway was as a man-made extension of the Black Land.

Lehner wrote of the Meidum pyramid that the causeway (and an earlier abandoned causeway) had been formed by cutting channels in the rock, which were paved with mud and had mudbrick sides.<sup>24</sup> Similarly, Fakhry wrote of the causeway of the Bent Pyramid at Dahshur that 'a curious feature is that it was paved with mudbrick laid over a limestone pavement'.<sup>25</sup> In terms of withstanding wear, the use of mud plaster or mudbrick would have been far less satisfactory than the underlying limestone pavements. However, as a representation of the Black Land, the mud was clearly an essential component of the symbolism with which Egyptian mortuary complexes of all ages were imbued.

The Bent Pyramid complex, attributed to Snofru, c. 2575–2551 BC, may provide evidence for the transition from the use of vegetated wadis as a *cordon sanitaire* to the adoption of the pyramid causeway to fulfil the same role. The causeway of the Bent Pyramid runs in a north-easterly direction from the pyramid to a 'valley' temple (fig. 6). Rather than being situated at the limit of the inundation like so many other similar 'valley' temples, the structure at Dahshur sits at the elevated edge of a small wadi, set some distance from the edge of cultivation. Even today, the eastern end of this wadi supports scrub vegetation (visible on fig. 6), similar to that at the northern end of the Abusir wadi. Here at Dahshur, then, we see both the vegetated wadi *and* the mud-lined causeway acting together to provide protection from the spiritual disorder of the Red Land.

The first Old Kingdom pyramid built at Saqqara, that of the early Fifth Dynasty pharaoh Userkaf, had a black basalt pavement along the causeway and within the mortuary temple.<sup>26</sup> Hoffmeier argued that the common use of black basalt paving in Old Kingdom mortuary temples, such as that of Khufu at Giza, was intended as a representation of the Black Land.<sup>27</sup> Given the rapid wear of mud plaster and mudbrick, the use of more durable hard black stone in this context, while maintaining the original symbolism, is clearly a significant advance.

By the reign of Khufu (2551–2528 BC), causeways were roofed and the internal walls were decorated in fine relief;<sup>28</sup> the introduction of the roof has been interpreted as protection for these reliefs.<sup>29</sup> The scenes that were used to decorate the interior walls of Old Kingdom causeways appear to have varied widely but included such subject matter as the construction of the pyramid itself, agricultural scenes, craftsmen at work and, perhaps most frequently, themes of battles between Egyptians and their foreign enemies, and scenes of the pharaoh in the presence of the gods.<sup>30</sup> This decoration, therefore, appears to depict the order which the pharaoh and the gods of Egypt bestowed on life in the Nile Valley, either by means of vanquishing the forces of evil that threatened the country, or by means of the agricultural and construction activity that was undertaken in the name of the pharaoh.

<sup>23</sup> Stadelmann in Quirke (ed.), *The Temple in Ancient Egypt*, 2.

<sup>24</sup> Lehner, *The Complete Pyramids*, 99.

<sup>25</sup> A. Fakhry, *The Pyramids* (Chicago, 1961), 84.

<sup>26</sup> Fakhry, *The Pyramids*, 169.

<sup>27</sup> J. K. Hoffmeier, 'The Use of Basalt in Old Kingdom Pyramid Temples', *JARCE* 30 (1993), 117–23.

<sup>28</sup> Lehner, *The Complete Pyramids*, 109.

<sup>29</sup> I. E. S. Edwards, *The Pyramids of Egypt* (London, 1993), 129.

<sup>30</sup> Z. Hawass and M. Verner, 'Newly Discovered Blocks from the Causeway of Sahure', *MDAIK* 52 (1996), 180.

These causeways with carved decoration do not appear to have had mud floors or walls: here the 'protection' from the chaos of the Red Land provided by the causeway was achieved symbolically through the decorative programme. This concept is expressed particularly well by Lehner when he says of the causeway of Sahure (2458–2446 BC) at Abusir: 'For their entire length, the walls of the causeway were decorated with reliefs, including scenes of gods leading prisoners taken away from Egypt's traditional enemies. Such scenes were meant to ward off any evil or disorder...'<sup>31</sup>

The causeway was not only a physical link between the often widely separated elements of the post-Meidum pyramid complex; it also provided protection for those passing through the 'disorderly' Red Land, such as the staff who maintained the cult of the dead pharaoh. The protection that the causeway provided may have been partly on a practical level, to provide a shield from the heat of the sun or from blowing sand, but given the evidence of the early use of mudbrick and mud plaster and the later use of basalt paving and extensive carved reliefs on the interior walls, the Old Kingdom causeway clearly had a strong symbolic function.

### Conclusions

As the differences between royal tombs of the First Dynasty at Abydos and the grander tombs of their senior courtiers at Saqqara suggest, the mortuary architecture of Lower Egypt and the Old Kingdom capital of Memphis evolved in a distinct manner, perhaps as a result of local influences. Many of these local influences undoubtedly derived from the natural landscape. The more extensive wadi vegetation that existed during the Early Dynastic Period may have allowed the Abusir wadi to be regarded as an extension of the Black Land, providing a *cordon sanitaire* for access into the 'chaotic' Red Land of the Saqqara necropolis. This concept provides an explanation for the clustering of Early Dynastic royal burials at the head of the Abusir wadi. As the climate of ancient Egypt became more arid and wadi vegetation receded, these natural extensions of the Black Land became increasingly rare. At this time, there was also an evolution in the layout of pyramid complexes, with the east–west alignment of the causeway introduced to link the valley and mortuary temples. Like vegetated wadis before it, the causeway was also regarded as an extension of the Black Land, with a variety of evolving architectural devices and decorative content used to symbolically preserve the Black Land within mortuary architecture.

<sup>31</sup>*The Complete Pyramids*, 143.