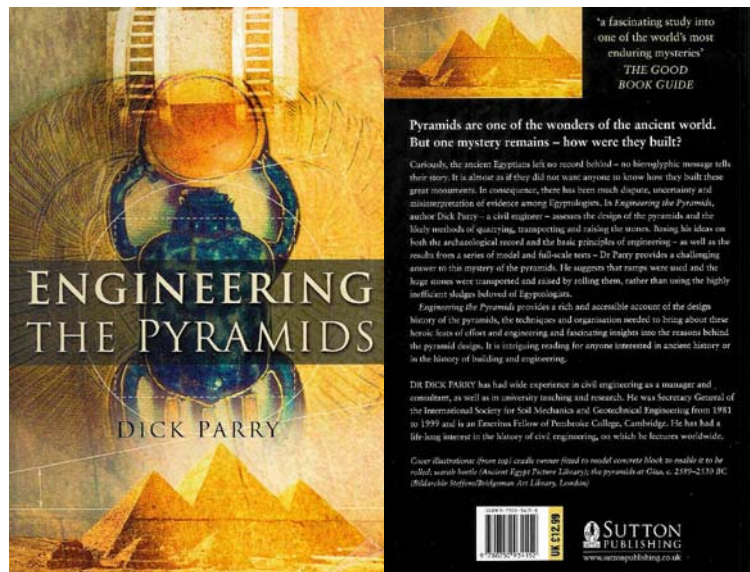


Parry, D. 2004. *Engineering the pyramids.* – Gloucestershire, Sutton Publishing

Book review by C. Rossi



In this book Dick Parry describes the story and the construction of stone pyramids from the point of view of a civil engineer and suggests a method that the ancient Egyptians might have used to transport stone blocks all the way to the top of their monuments.

The text is divided into twelve chapters, with the addition of a preface, a paragraph of conclusions, an appendix and a select bibliography. First, second and third chapter contain a brief history of the pyramids built by the 3rd and the 4th dynasty kings, with special attention to the evolution of constructional methods and building techniques. Chapters 4 to 7 contain a survey of the tools employed by the workmen, of the preliminary operations that were carried out before the actual construction of the monument began and to the quarrying techniques used to obtain the stone blocks.

Chapter seven focuses on Herodotus' account of his visit to the pyramids of Giza and of the information that he obtained from the Egyptian priests concerning the construction of the 'Great Pyramid'. In chapter 8 and 9, the author briefly analyses the various methods and techniques that have been suggested to explain how the ancient builders moved the large blocks that were used to build the Old Kingdom pyramids. He focuses on their faults and dismisses them one after the other, and in chapter 10 he explains his own theory.

Parry believes that the blocks were not dragged, but rolled, thanks to a set of 8 cradle-like wooden devices in the shape of quarter-circles, that would have been attached around the extremities of the blocks giving them a cylindrical shape. Additional pieces of wood would have been used to accommodate them around blocks of various sizes. The existence of these cradle-like devices is known from a number of little models dating to the New Kingdom, that were found in the foundation deposits of the temple of Hatshepsut at Deir el-Bahari. Petrie, who found them, thought that they might have been used as rockers to raise the stones, but Parry suggests another use. The author prepared a little model that proves that rolling a block up on a slope puts less strain on a rope than dragging the same block on the same slope. Later, an experiment was successfully carried out in Japan: on this occasion, it took only 15 to 20 men to roll a 2.5 ton concrete block up the slope, whereas it would have taken between 50 and 60 to drag it along the same slope. The mechanics of this process is explained in detail in the appendix.

Chapter 11 is dedicated to the ramps that might have been used to build some of the 3rd and 4th dynasty pyramids, and suggests a type of spiral ramp that would have been suitable to roll the blocks up to the top of the 'Great Pyramid'. Finally, chapter 12 summarises what is known of the workforce who built Old and Middle Kingdom pyramids. A summary of the activities of the author and of the development of his ideas can be found in the 'Closing remarks'.

Undoubtedly, Dick Parry's method works: it is certainly true that rolling a block up a slope is easier than dragging it. Concerning in general ancient Egypt and in particular the pyramids, the problem is that there is no archaeological evidence that may confirm that such a method was ever used. The cradle-like devices that might have been employed to give the blocks a cylindrical shape are known only from small-scale models dating to the New Kingdom, that is, a thousand years after the Old Kingdom pyramids. Moreover, their shape does not seem to correspond always to parts of a circle. Parry publishes a picture at p. 119 that shows one with a quarter-circle

shape, but the object that appears in the picture at p. 101 is clearly flatter, as it is the model published by Arnold (1991: fig. 6.29).

Finally, there is absolutely no pictorial or textual evidence that their function was to roll objects, nor that any object was ever rolled around in ancient Egypt. In fact, one wonders, if such a system was so successfully adopted to build the most famous Old Kingdom pyramids, why was not it widely employed also in the New Kingdom? Apart from symbolic representations that show, for instance, the king erecting obelisks by himself, the few realistic scenes that have survived showing blocks being moved around (*e.g.* from the tomb of Rekhmira at Thebes, or the scene from Tura mentioned in Parry's book) depict ramps and sledges.

Admittedly, lack of positive evidence does not necessarily imply that a theory must be wrong. However, it is true that the archaeological evidence that Egyptologists have gathered so far on how the Egyptians moved blocks shows that the ancient workmen simply pulled the blocks, generally with the help of sledges. Beside Parry, other scholars have pointed out in the past how laborious and tiring it would have been to pull huge blocks, with or without the help of strong oxen, but, as Arnold (1991: 63) remarked, evidently in ancient Egypt "workers were available in great numbers and [...] time was not an overriding concern".

In general, the non-specialised reader will find Parry's book a useful summary of the evidence on the building process of Old Kingdom pyramids. The most interesting aspect is the fact that the pyramids are seen, analysed and described from the scientific point of view of a civil engineer, thus focussing the attention on technical and constructional details that are generally only addressed by specialists in specialised publications. Indeed, the pyramids are first of all a great work of engineering. Against the various esoteric and symbolic interpretations that never cease to circulate, this book contributes to acknowledging the importance of the technical aspects underlying the construction of these famous monuments.

Cited literature

Arnold, D. 1991. Building in Egypt. Pharaonic stone masonry. – Oxford, Oxford University Press.