



**COLIN O'CONNOR, ROMAN BRIDGES,**  
**Cambridge, Cambridge University Press, 1994. Pp. XVII+275,**  
**153 illustrations, 11 maps, 14 tables, ISBN 0-521-39326-4.\***

Professor of civil engineering at the University of Queensland, expert in bridge construction, Colin O'Connor wrote an interesting book concerning the bridges of the Roman Empire. As we can observe, the author is fascinated by the modality in which the Romans constructed bridges and roads. He outlines, at the beginning of the book (p. 1), that the Romans are "the world's first major bridge builders".

The book is structured in 10 chapters: 1. *Introduction*, p. 1-3; 2. *Roman roads and their history*, p. 4-34; 3. *Builders of the roads and bridges*, p. 35-43; 4. *Roman technology*, p. 44-62; 5. *Masonry bridges*, p. 63-131; 6. *Timber bridges*, p. 132-149; 7. *Roman aqueducts*, p. 150-162; 8. *Design and construction of Roman arches*, p. 163-175; 9. *Analysis of Roman arches*, p. 176-186; 10. *The Roman achievement*, p. 187-188, followed by *Appendices*, p. 189-192, *Appendix tables*, p. 193-204, *Works cited*, p. 205-210 and *Index*, p. 211 sqq.

As it is normal, Colin O'Connor discusses in *Introduction* the problems related to the Roman road system, which, evidently, determined the localiton of the bridges. The author presents in detail the main routes from Italy, Britain, the Rhine and Danube provinces. Then he continues with the description of the main Roman road from Greece, Turkey, Egipt and the East. So, it is obvious that this opening chapter is very important, because the author establishes the routes of the main roads along which many bridges were constructed. The author wanted to link the construction of the bridges with the construction of the roads. This solution is good, because it outlines the relation between roads and bridges and, of course, gives the bridges a better historical context. The maps with the roads of the main provinces are based on those from the books of Raymond Chevallier<sup>1</sup> and Victor W. von Hagen<sup>2</sup>.

The next two chapters (3 and 4) are focussed on Roman builders, technology and building materials. The largest chapter of the book is Chapter 5, *Masonry bridges*, a survey of these bridges throughout the Roman world. O'Connor describes the bridges geographically, beginning with Rome and its vicinity. Then he presents the bridges from the southern Italy and the islands, central Italy and northern Italy. After that the author analises the bridges from Gaul, Spain and Portugal, Africa and the East. As the author outlines, this chapter has three objectives: to list existing bridges, to identify where they may be found and to describe the more important ones. Timber bridges are discussed separately in Chapter 6; the bridges of Britain are discussed in Chapter 7, because most (if not all) bridges in Britain have a timber superstructure. The author presents all the bridges of Rome across the river Tiber: Pons Mulvius on the Via Flaminia, Pons Aelius, Neronianus, Agrippae, Aurelius, Fabricius and Cestius, Aemilius, Sublicius and Probi. In the section dedicated to the bridges from Spain and Portugal is described, of course, the famous *Puente de Alcántara*, one of the greatest of all Roman bridges, built over the River Tagus, in Spain.

In chapter 6 Colin O'Connor discusses the aspects regarding the timber bridges. He observes that these structures were especially common in Roman Britain, but timber bridges were built extensively throughout the Roman world. Two bridges are discussed in detail: the bridge constructed by Caesar across the Rhine and the bridge built by Apollodorus of Damasc across the Danube, during the emperor Trajan. The author uses the work of Caesar (*De Bello Gallico* 4.17) and manages to present a good reconstruction of this bridge, which was built in 10 days. Of course, Colin O'Connor discusses in detail the way in which the Romans built the longest bridge from the Roman Empire, that across the Danube.

In chapter 7 O'Connor analises the aqueducts bridges, observing that these were extremely well constructed.

\* Although this book appeared in 1994, only now I have the chance to review it, and that grace to my colleague and friend from the United States, Ioana Rusu, who sent me this book. I want to thank her kindly for her effort.

<sup>1</sup> *Les voies romaines*, Paris, 1972.

<sup>2</sup> *Le grandi strade di Roma nel mondo*, Roma, 1978.

In the final chapters (8, 9 and 10), the author discusses about the design and construction of Roman arches. In chapter 8 O'Connor elucidates the rules developed and applied by Roman in order to built arches. These rules are used in the next chapters, where the author makes modern analyses to see if they are correct.

The book also contains a glossary of technical terms and appendices listing 330 masonry bridges, all organized geographically, 34 timber bridges and 94 aqueduct lines, as well as a list of works cited.

This volume represents a comprehensive account of bridges and bridges building in the Roman world, useful for the scholars that study the Roman roads or other aspects regarding the Roman civilization.

***Florin FODOREAN***