AUGUSTUS PERIOD BRIDGES OF CILICIA PEDIAS (PLAIN CILICIA)

CILICIA PEDIAS'IN (OVALIK CILICIA) AUGUSTUS DÖNEMİ KÖPRÜLERİ

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OANNES
Uluslararası Eskiçağ Tarihi Araştırmaları Dergisi – International Journal of Ancient History
6/2, Eylül – Seprember 2024 Samsun
E-ISSN: 2667-7059 (Online)
https://dergipark.org.tr/tr/pub/oannes

Makale Türü-*Article Type*	**:**	**Araştırma Makalesi - Research Article**
Geliş Tarihi-*Received Date*	**:**	**28.04.2024**
Kabul Tarihi-*Accepted Date*	**:**	**23.09.2024**
Yayın Tarihi – *Publication Date*	**:**	**25.09.2024**
Sayfalar-*Pages*	**:**	**481 – 500**
	:	**https://doi.org/10.33469/oannes.1474873**

This article was checked by iThenticate

Atıf – Cite as: GÖÇMEN, İ., "Augustus Period Bridges of Cilicia Pedias (Plain Cilicia)", *OANNES – Uluslararası Eskiçağ Tarihi Araştırmaları Dergisi,* 6/2, Eylül 2024, ss. 481 – 500.

OANNES
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Araştırma Makalesi / Research Article

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Abstract

Cilicia, located in the southern part of Asia Minor, was historically divided into two distinct regions: Tracheia and Pedias, based on its topographic features. The term "Pedias" refers to the area extending from Soloi Pompeiopolis or the Lamos River to the Gulf of Iskenderun. Within this region, there are two stone bridges, attributed to the Roman period, that are situated close to each other and display similar architectural characteristics. The first bridge, known as the Kozan Bridge, is located in the Kozan District, while the second, called the Tozlu Bridge, is situated in the Kadirli District of Osmaniye.

The Kozan and Tozlu bridges share architectural similarities; however, uncertainties remain regarding their

Öz

Asia Minor'un güneyinde konumlanan Cilicia Bölgesi, antik dönemde topografik yapısına bağlı olarak Cilicia Tracheia (=Dağlık Cilicia) ve Cilicia Pedias (=Ovalık Cilicia) olarak iki ayrı bölge şeklinde değerlendirilir. Pedias; Soloi Pompeiopolis veya Lamos Nehri'nden başlayarak Alexandria Kat Isson'a yani İskenderun Körfezi'ne kadar uzanan alanı tanımlamak için kullanılır. Pedias sınırları içerisinde sergiledikleri mimari özellikler doğrultusunda Roma Dönemine atfedilen ve birbirine yakın mesafede konumlanan iki ayrı taşköprü yer almaktadır. Bu köprülerden ilki Adana'ya bağlı Kozan İlçesi'nde konumlanmakta ve Kozan (=Sis) Köprüsü adı ile anılmaktadır. İkinci köprü ise Osmaniye'ye bağlı Kadirli İlçesi'nde bulunmakta ve Orta Tozlu Köprüsü olarak isimlendirilmektedir. Çalışmanın konusunu oluşturan bu iki köprü dışında yine yakın çevrede yer alan Adana

* This article has been taken and expanded from the PhD thesis titled "Bridges of the Cilician Region" written by me. This study was funded by Mersin University (BAP) Scientific Research Projects Unit with Project Number 2018-1-TP3-2847 and Mediterranean Civilizations Research Institute (AKMED) with Project Number KU AKMED 2018/T.1040. Gratitude to Mersin University BAP Unit and Mediterranean Civilizations Research Institute for their contributions.

precise dating. The objective of this study is to resolve these uncertainties. To achieve this, the architectural features of the two bridges will be compared analogically with other examples, both within the region and across distant geographies once under Roman control. In addition to architectural analysis, the study will also consider ancient building practices in Cilicia and the broader political context of the period to determine when and for what purposes these bridges were constructed.

Keywords: Stone bridge, Cilician Region, Cilicia Pedias, Anazarbus, The Early Imperial Period.

Taşköprü üzerinde de benzer mimari nitelikler gözlemlenmektedir.

Kozan ve Orta Tozlu köprüleri, mimari özellikler bakımından benzerdir. Ancak her iki köprünün de tarihlemesinde belirsizlikler söz konusudur. Bu çalışmanın amacı, adı geçen iki köprü tarihlenmesi konusundaki belirsizlikleri açıklığa kavuşturmaktır. Bu amaç doğrultusunda adı geçen iki köprünün mimari özellikleri hem bölgedeki hem de Roma'nın egemen olduğu uzak coğrafyalardaki diğer köprü örnekleri ile analojik açıdan kıyaslanacaktır. Mimari özelliklerin yanında antik dönemde Cilicia'da gerçekleştirilen yapı çalışmaları ve siyasal süreci de dahil ederek köprülerin ne zaman ve hangi amaçla inşa edildiklerini gerekçeleri ile birlikte ortaya konulacaktır.

Anahtar Kelimeler: Taş Köprü, Cilicia Bölgesi, Cilicia Pedias, Anazarbus, Erken İmparatorluk Dönemi.

Introduction

The region in the south of Asia Minor, stretching from Alexandria Kat'Isson (=İskenderun) in the east to Korakesion (=Alanya) in the west, is called 'Cilicia'.[1] This large geographical area is considered, in Strabo's account, topographically in two distinct parts: the Rugged (Cilicia Tracheia) and the Plain (Cilicia Pedias). [2] Lamos River,[3] or Soloi Pompeiopolis constitute the border between these two areas named *Tracheia* and *Pedias*.[4] The northern border of the region is defined by the Taurus Mountains, and the southern border by the Mediterranean (Fig. 1).

[1] Hdt., *Historia,* I. 28, 72, 74, II.17, 34, III. 90. V. 52, 108. VI. 43, 95, VIII. 14. IX.107, for the origin of the name Cilicia, also see Hdt., *Historia,* VII. 91; Ksenophon, *Anabasis,* II. 11-25; Arr., *Anabasis,* II. 4.2-9. 6.1-5; Str., *Geographika,* XIV. 5.1, XIV.5.3, XVI.5.19.

[2] Str., *Geographika*, XIV.5.1.

[3] Erzen,1940:12-13; Durukan, 2004: 40; Str., *Geographika,* XIV.5.1, 5.8.

[4] There is an uncertainty about the border separating the region into, as stated by Strabo, the rugged and the plain Cilicia. The ancient historian mentions this border to be the Lamos River in one chapter, and Soloi in another. For the mention of Soloi as the border, see Str., *Geographika,* XIV.5.1, 5.8. For the mention of Lamos River as the border, see Str., *Geographika,* XIV.5.6.

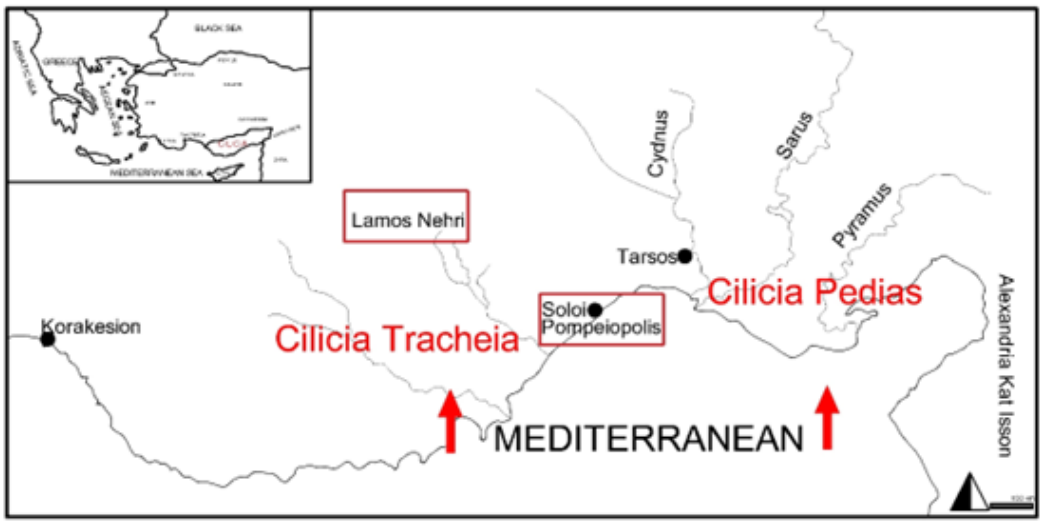

Figure 1. The Map of Cilicia Region (Drawing: İ. Göçmen)

A multi-arched stone bridge is located in Kozan District, which is in Cilicia's plain section and once called Sision or Sis, in the Province of Adana.[5] Although it is suggested that the structure, which provides passage over the Kilgen Stream, was built during the Roman Period,[6] no precise dating was offered for it so far.

The second stone bridge discussed in this study is located in Kadirli District of Osmaniye Province and was built over the Kandak Stream. The structure, named Orta Tozlu Bridge and associated with the Roman Period, is situated approximately 1.5 km southeast of the ancient city of Anazarbus, which was the metropolis of the region for a long time.[7] Like the Kozan Bridge, it is uncertain when and for what reason it was constructed.

Kozan and Orta Tozlu bridges are generally attributed to the Roman period. However, there is no clear dating suggestion for either bridge. In fact, there are very few studies on these two bridges. A general definition was made about the first construction date of the Kozan Bridge, which was discussed by A. Kütük, and the Roman Period is generally recommended for the first construction date. In the study conducted by Kütük, the late phases of the structure are mainly discussed.[8] Orta Tozlu Bridge was previously examined by M. H. Sayar. In the section where Sayar discusses a milestone dated to the beginning of the 3rd century AD, he also briefly mentions the bridge extending on the east-west axis on the road from Anazarbos to Hierapolis Kastabala, and does not suggest a clear dating.[9]

The main problem of this study is when and for what purpose the Kozan and Orta Tozlu bridges were built. At this context, a comprehensive

[5] Hild – Hellenkemper, 1990: 413.
[6] Kütük, 2009: 9.
[7] Sayar, 1992: 205; Sayar, 2019, 161.
[8] Kütük, 2009: 8-16.
[9] Sayar, 1992: 205.

examination of the architectural features of both bridges is required. It is also highly important to identify other bridges of similar architectural styles constructed in other territories under the Roman control, for the dating of these bridges. The two bridges have similar architectural features. However, these bridges are different from the examples located in the region such as Yeniyurt Bridge[10], Mergin Valley Bridge[11], Hebilli Akdam Bridge[12], Misis Bridge[13], Tarsus Bridge[14] and Iustinianus Bridge[15]. On the other hand, these two bridges are closely similar to Adana Taşköprü, which is the subject of another study, in terms of architectural features[16]. Therefore, an analogical evaluation will clarify the question of when these two bridges were built (Fig. 2). The main point that makes the study unique and distinguishes it from similar ones is the comparison of the bridges discussed with examples from both the region and distant geographies.

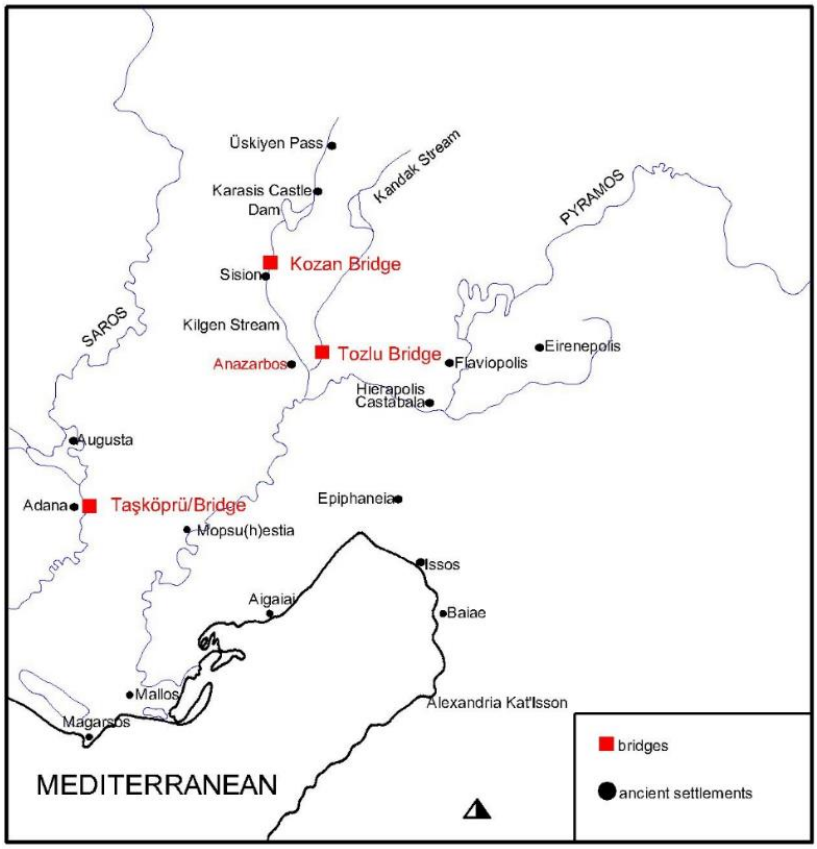

Figure 2. The Kozan and the Tozlu Bridge on the Map (Drawing: İ. Göçmen)

[10] Göçmen, 2021: 174-176.
[11] Göçmen, 2021: 178-184.
[12] Göçmen, 2021: 260-263.
[13] Durukan-Göçmen, 2023: 95-96.
[14] Göçmen, 2022: 307-326.
[15] Göçmen-Durukan, 2021: 346-358.
[16] Göçmen, 2022: 273-288.

Architectural Evidence of the Original Construction Phase of the Kozan Bridge

Associated with the Roman Period, an eight-arched monumental bridge is located within the borders of Kozan District that is approximately 65 km northeast of Adana Province.[17] The ruins of a settlement that was well-established during its Armenian Period (Armenian Kingdom of Cilicia) rests in Kozan, which was known as Sision in ancient times.[18] The bridge is situated in the center of this settlement. Although closed to vehicular traffic now, it is still in use for pedestrians (Fig. 3).

Figure 3. The Upstream Façade of Kozan Bridge (Photo: İ. Göçmen)

Among the eight arches of the bridge, only the third and the fourth arches from the west on the upstream façade still serve their purpose. The remaining six arches have no function due to soil build up. Following the construction of Kozan Dam Lake in the northeast of the district, the waters of the river over which the bridge was built must have decreased, rendering the arches nonfunctional.

Kozan Bridge runs in the east-west direction. Its deck is approximately 70.00 m in length and 6.00 m in width. Some repair work, using small sized

[17] Unless otherwise stated, all information provided herein on the Kozan Bridge will be from the upstream façade. Also, the architectural drawing of the bridge and most of the photographs used are from the upstream façade.
[18] Hild – Hellenkemper, 1990: 413-414.

stones, is observed on the upper parts of the spandrel walls of the structure. Large, well-dressed local limestone blocks of various dimensions, which are 0.51 x 0.85 m, 0.51 x 1.03 m and 0.50 x 1.20 m, were used throughout the bridge. In the sections associated with the original construction throughout the structure where the *Opus quadratum* technique is clearly evident, the arch stones are radially set, and have an average height of 1.20 m.

The façade of the bridge, along with its flat deck, presents a rectangular form as a whole. The structure, which consists of eight main and three discharging arches, has semicircular arches in sections associated with its early phase. The bridge's second, fourth, fifth, seventh and eighth arches from the west are semicircular in form (Fig. 4).

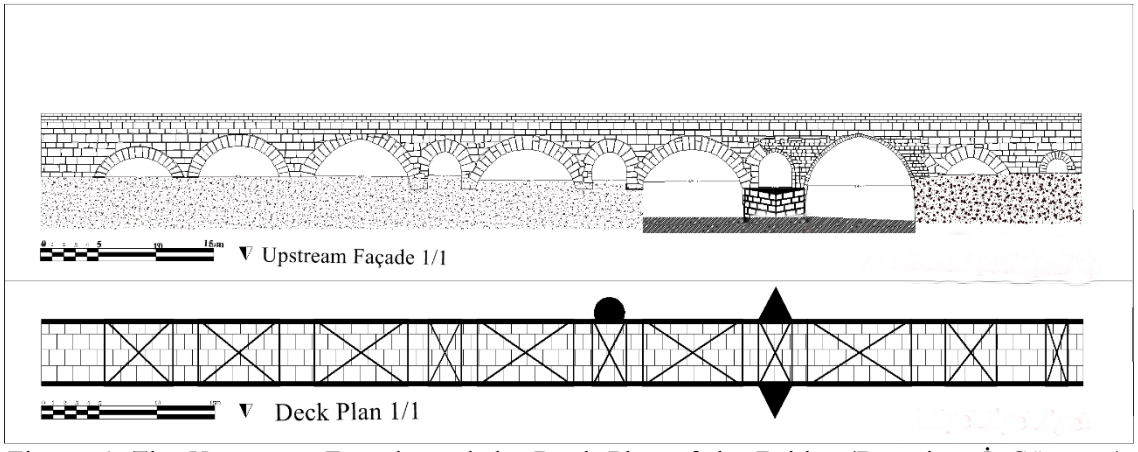

Figure 4. The Upstream Façade and the Deck Plan of the Bridge (Drawing: İ. Göçmen)

The second arch of the bridge displays a semicircular design and has a span of 4.99 m. The arch whose lower part is filled with soil build-up, currently measures 2.54 m in height. The fourth arch, which displays the same form, has a span of 8.90 m and a height of 6.80 m. Spanning over the current axis of the Kilgen Stream, it is one of the two arches that still serves its bridging function. The fifth arch of the structure, along with the other arches in the east, was filled with soil and lost its function. The said arch measures 8.22 m in span, and 2.71 m in height. The seventh arch on the east side of the structure has a span of 7.50 m and a height of 2.40 m. The last arch on the east is similar to the previous arches with its semicircular arch form. It measures 6.40 m in span and 1.85 m in height.[19]

Discharging arches were placed on the piers on which the semicircular arches associated with the original construction rest. A total of three discharging arches, two of which are semicircular, were observed on the piers that support, starting from the west, the third and the forth, the forth and the fifth, and the fifth and the sixth arches (Fig. 4). The first discharging arch on

[19] All the semicircular arches of the bridge must have had the same dimensions as the still-functional fourth arch. It is not possible to see the original ground on which the arches rest and therefore take exact measurements, due to the earth fill in this area that now serves as a parking lot.

the west side of the structure rests on the pier between the third and fourth arches, which continue to serve their purposes. Designed in the form of a pointed arch, this discharging arch has a span of 3.09 m and a height of 3.36 m. However, the three rows of radial arch stones that reach heights up to 1.20 m on the east side of the arch face differ from the rest of the arch. This fact verifies that at a later phase this part of the structure underwent a serious repair. In other words, the discharging arch, which was originally a semicircle and formed by radial arch stones, must have been repaired using diagonal and approximately 0.50 m high arch stones (Fig. 5).

Figure 5. Discharging Arch in the West (Photo: İ. Göçmen)

The other two discharging arches of the bridge, unlike the first example, have semicircular forms. These two small arches, situated between the piers supporting the fourth and the fifth arches, and the fifth and the sixth arches of the structure, both measure 3.09 m in span and 3.36 m in height. Radially arranged and approximately 1.20 m high arch stones were also used in both discharging arches. The same form and arch stone dimensions are observed on the structure's true arches that are designed in the form of a semicircle. In addition, these two openings are harmonious with the semicircular true arches, and the arches and the discharging arches appear to be interlocked.

Two triangular cutwaters, one on the upstream and one on the downstream façades, are situated on the pier that supports the structure's third and fourth arches which are still functional. The fact that these cutwaters, which display the same design and dimensions, are situated below the springing line is considered to be a period feature.[20] This feature becomes

[20] Alaboz, 2008: 14.

more pronounced at the bridge examples of the Roman Period. Additionally, another cutwater on the downstream façade, which is level with the springing line, is situated on the pier on which the fifth and the sixth arches rest. However, unlike the other two examples, this cutwater has a rounded form.

Along with the circular arch form and the other features mentioned above, different arch designs were also observed on the structure. These differences provide evidence of the repairs that the bridge has undergone since its original construction.

Architectural Evidence of Repairs on the Kozan Bridge

Kozan Bridge's various other arch designs that are seen besides the semicircular arches associated with the original construction phase, as well as the differences in workmanship and the used materials indicate that the structure had seen some repairs during different periods. First of all, the sixth arch on the east side of the structure, unlike the other arches, displays a flattened pointed arch design. That said, it is observed that stones from the early phase were employed on the arch and the inner face of its vault. Arch stones reach heights up to 1.20 m in the lower parts of the arch face, whereas at the upper part the arch stones measure 0.60 cm in height. Therefore, the lower parts of the sixth arch look in harmony with the dimensions of the arch faces observed throughout the structure, and are associated with the structure's original construction. The difference observed in the arch stones on the arch's upper part proves that the arch, which was originally semicircular, was restored as a flattened pointed arch during the repair work. In other words, after the original construction, this arch must have been partially repaired. In addition, the shift in the axis at the upper part of the arch and the spandrel wall supports the idea of a repair (Fig. 6). Another observation that supports the idea of a repair is the fact that this arch, unlike other arches, has girder holes in its vault. The girder holes, which were used for centering, is associated with the repair done on the sixth arch (Fig. 7).

Figures. 6-7. Details of the Sixth Arch and the Vault (Photo: İ. Göçmen)

Besides the sixth arch, the third arch of the bridge also exhibits some differences in form, use of material, and workmanship. This arch, which is one of the two still functioning sections of the bridge, displays a design similar to the narrow-pointed arch form known as the five-centered (*pencî*) arch.[21] It measures 9.46 m in span and 6.92 m in height. While the average height of the arch faces in rest of the structure is 1.20 m, it is 0.31 cm for this arch, rendering the arch face considerably narrow. The most significant detail here is that the shape of the arch stones are diagonal, not radial. Also, small-sized block stones, measuring 0.30 cm x 0.45 cm on average, were employed on the spandrel walls around this arch. In this respect, the said stonework differs from that of the rest of the structure. The difference in phases is also apparent on the discharging arch located to the east of the third arch and designed in the form of a pointed arch. As mentioned before, while small stones were used in this small arch, particularly on its side near the western part of the third main arch, radial arch stones reaching heights up to 1.20 m were employed in its first three rows on the opposite side. Consequently, it is concluded that the third arch of the bridge completely, and the discharging arch on its east partially have collapsed. The part of the bridge in question must have undergone a major repair at a later phase after the collapse (Fig. 8).

Figure 8. Detail of the Third Arch of the Bridge (Photo: İ. Göçmen).

Like the third and the sixth arches of the bridge, the first arch on the west side from the upstream façade also differs from the rest. A considerable part of this arch is now below ground. In its current state, the arch measures 1.89 m in span and 1.35 m in height. The height of the arch face is 0.52 m.

[21] Alioğlu, 1991: 53, 61; Çulpan, 2002: 7.

The spandrel wall between the first arch, which displays a different design, and the second arch to its east is approximately 5.00 m long. In other words, the first arch is constructed further away from the second arch to its east. Therefore, the first arch must have been added to the structure at a later phase and had a function similar to that of a flood arch. To put it more clearly, a wide spandrel wall runs between this arch and the second arch, separating the first arch from the others.

Finally, the stonework extending between the extrados of the arches and the bridge deck shows that the spandrel walls of the structure were raised higher at a later phase. In fact, the upper two rows do not maintain unity with the walls of the structure's lower parts in both size and workmanship.

Architectural Evidence of the Original Construction Phase of the Orta Tozlu Bridge

Orta Tozlu Bridge, approximately 24 km southeast of the Kozan Bridge (Fig. 2), is located within the borders of the modern-day Osmaniye Province, in the east of the rural settlement of Tozlu Neighborhood that is about 21 km southwest of Kadirli District of Osmaniye. The structure underwent some restoration between 2012 and 2013, and continues to cater to both pedestrian and vehicular traffic today. The structure is named the Orta Tozlu Bridge, after the nearby small rural settlement.

The ancient city of Anazarbus is located approximately 1.5 km east of the bridge, which consists of two main arches and one discharging arch. Anazarbus was one of the significant metropolises of Cilicia *Pedias*. The bridge, which is situated near this ancient settlement, provides passage over a small watercourse known as Kandak Stream. The Tozlu Bridge lies in northwest-southeast direction. The deck of the structure measures 25.75 m in length and 4.90 m in width. The *Opus quadratum* technique is evident throughout the walls (Fig. 9).

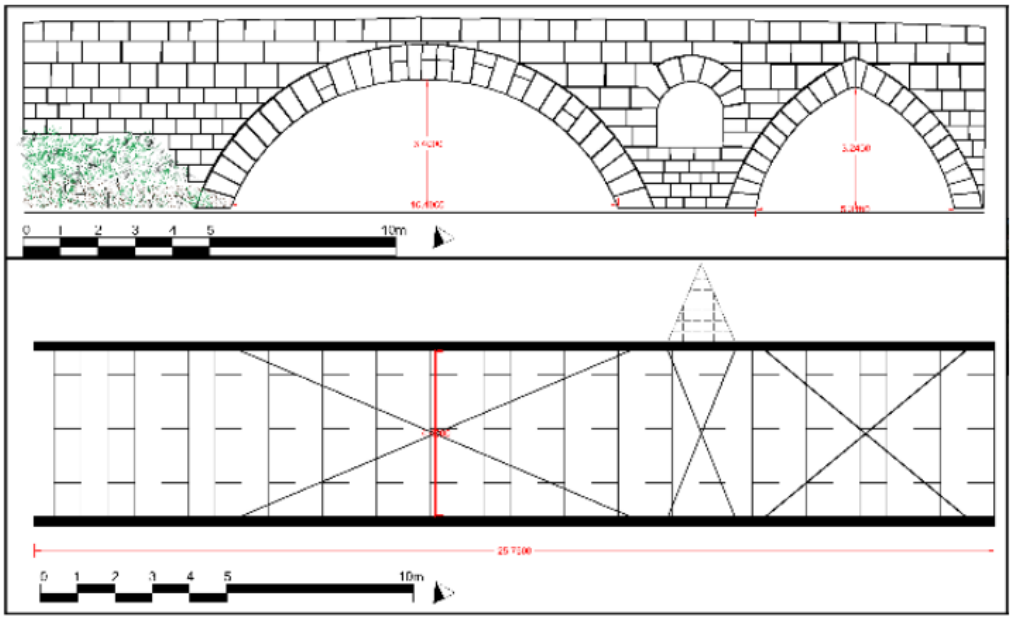

Figure 9. Downstream Façade of the Tozlu Bridge (Drawing: İ. Göçmen)

Square cut stone blocks of different dimensions, which are 0.90 x 0.35 m, 0.75 x 0.35 m and 0.59 x 0.35 m, were used in the construction of the spandrel walls as well as the inner face of the vaults and the arches. The two arches of the bridge display two different designs. On the northwest side from the downstream façade,[22] the bridge starts with a stretch of approximately 4.50 m wide spandrel wall. Next is the first arch in the form of a semicircle. The measurable height of this arch, which is 10.40 m in span, is 3.40 m. The average height of the arch face is 1.00 m in the first arch. The stones used in the arch face are radial in form. There is no distance between the extrados of the arch and the deck. More precisely, the deck of the bridge runs right over the keystone. Next to the first arch is the middle pier on which the second arch of the bridge rests. A semicircular discharging arch is situated on the pier. This discharging arch, which displays an interlocked appearance with the first arch to its northwest, measures 1.77 m in span. The height of the discharging arch is 1.75 m. As was on the first arch, the average height of the arch face is 1.00 m on this discharging arch. The radial arch stones, some shorter than others, are not uniform in length. In other words, the façade of the arch exhibits a *rustic* appearance. This discharging arch rests on the upstream façade on a triangular cutwater that does not continue beyond the arch's springing line. The cutwater, which projects outward approximately 2.00 m on the upstream façade, measures 2.20 m in height (Fig. 10).

Figure 10. Detail of the First Arch and the Discharging Arch (Photo: İ. Göçmen)

[22] Unless otherwise stated, all explanations, drawings and photos provided herein on the Orta Tozlu Bridge will be from the downstream façade. The upstream façade could not be examined due to dense vegetation and alluvial deposit.

Architectural Evidence of Repairs on the Orta Tozlu Bridge

Unlike the semicircular form of the first arch, which is associated with the original construction of the Orta Tozlu Bridge, the second arch is a flattened pointed arch. The different design of this arch can be explained by repair works carried out in later phases. The arch measures 5.34 m in span and 3.24 m in height. The height of the arch stones vary up to 0.79 m. In this respect, the different sizes of the arch stones do not show consistency with the stone sizes used in the first arch. The second arch of the bridge differs from the first arch both in form, and its measures of span and height (Fig. 11). The second arch is relatively narrower and flatter. As a result, a slight slope occurs in the southeast of the bridge deck, which is similar in looks to the practice called *harpuşta* (coping),[23] that became more pronounced in the late period bridge architecture.

Figure 11. Second Arch of the Bridge (Photo: İ. Göçmen)

General Evaluation and Conclusion

Five of the eight main arches as well as two of the three discharging arches of the Kozan Bridge discussed here are designed in semicircular form. At Orta Tozlu Bridge, the first arch and the discharging arch display semicircular designs. The same or similar dimensions of the semicircular arches, despite the partial changes the structures have undergone as a result of the repairs, give the façades of both structures as a whole a rectangular appearance. In both bridges, the stones on the arch faces that are associated

[23] Bektaşoğlu, 2013: 105. A word of Persian origin, *harpuşta* consists of "*har*", which means donkey, and "*puşta*", which means back. It is used to describe the slope formed at the center of the bridge deck.

with the original construction phase are radial. Another common feature observed in these structures is that the distance between the arches and the deck are very narrow to none. The semicircular arch form was widely used at the Roman Period bridges.[24] The dimensions of span and height of the arches designed in this form are the same or similar to one another. While this enables the deck to run straight, it also gives a rectangular form to the façade of the bridge. In addition, features such as the use of *opus quadratum* technique, the radial form of the arch stones, and little to no distance between the extrados and the deck are considered as the criteria for the bridges of the period.[25] All these characteristics associated with the bridges of the period are also found on the aforementioned bridges that are the subject of this study. However, on both bridges, there are indications of repairs realized after the original constructions. It is observed that the features associated with the Roman Period are partly changed as a result of these repairs. It is understood, at this point, that the original construction of both Kozan and Orta Tozlu Bridges were carried out during the Roman Period. However, it is also apparent that the damaged or collapsed sections of these structures were repaired or rebuilt in later phases in a way that reflects the architectural understanding of the periods of these later phases.

Identifying the Roman Period as the construction date for the two bridges discussed here is a highly vague statement. It could be possible to narrow down the proposed dates for both structures by examining their architectural features in detail. An architectural feature that stands out in both structures clarifies the question of when the structures might have been built. Many bridges known to be built during the Roman Period have no discharging arches. However, discharging arches were used at both the Kozan and the Orta Tozlu bridges. Both bridges have discharging arches situated on bridge piers and, in this regard, differ from the other bridges of the period, except for one. In fact, the arches of the same kind stand out at the bridge called Adana Taşköprü as well, which is the subject of another study in which it has been proposed that the structure was dated to the Augustan Period.[26] In addition, such arches are also seen on the piers of various bridges located in different geographical areas that were ruled by the Romans.

The numerous bridges with discharging arches located in the geographical areas under the Roman control serve as a starting point for the dating of the Kozan and the Orta Tozlu bridges. The first of these examples is *Pons Mulvius*, which was originally built in 109 BC and, according to records, had undergone a major repair in the 1st century AD.[27] The *Pons Fabricius*, which was built in 62 BC and has an inscription dated to 21 BC regarding its repair, is similar to these two bridges in terms of discharging arches.[28] Another similar bridge over the Tiber River is *Ponte Rotto*, whose first construction was

[24] Tyrrell, 1911: 24; Gazzola, 1963b: 33; O'Connor, 1993: 163-164; Beyer, 2012: 10; Staccioli, 2003: 113; Sonavane, 2014: 37.
[25] O'Connor, 1993: 166; Staccioli, 2003: 111; Wheeler, 2004: 146; Strickland, 2010: 24; Gençer – Turan, 2017: 192.
[26] Göçmen, 2022: 276-280.
[27] Balance, 1951: 80-83; O' Connor, 1993: 65.
[28] O'Connor, 1993: 66; Taylor, 2002: 6.

dated to 179 BC. It is suggested that *Ponte Rotto* was rebuilt during the Augustan Period.[29] *Ponte Pietra*, which is located in the north of Italy and is said to have undergone a major repair, also has discharging arches, and it is suggested to be constructed during the Augustan Period.[30] Discharging arches were used also in *Pont Julien* in France whose construction, due to its name, is associated with Caesar.[31] It is also suggested that this bridge was built sometime between the 1st century AD and the beginning of the 2nd century AD.[32] Another example located in France is called the Sommières Bridge. Its original construction is considered to be done during the Tiberius Period.[33] The same feature stands out also in a structure located in Spain and called the Merida Bridge, and although it has gone through different construction phases, the sections with the discharging arches are considered to be built in the Augustan Period. Also, the Merida Bridge has rounded cutwaters on the downstream façade between its ten arches that are associated with the Augustan Period, like the one on the downstream façade of the Kozan Bridge.[34]

As is apparent from the dates provided for the above examples, which are mentioned due to their similarities with the two bridges discussed here, discharging arches on massive bridge piers were commonly used particularly in the Early Roman Imperial Period. Here, it is important to understand Rome's interest in and the actions it took towards the Cilicia Region during that time. The close relations of the Roman Republic with the Cilician region was established within the scope of Pompeius' campaign against the pirates. After eliminating the pirate threat, Pompeius repopulated Anazarbus and its neighboring cities.[35] The beginning of the architectural structuring, which emerged in the context of Rome's efforts to consolidate its control over the region, is associated with King Archelaos process in Cilicia Tracheia. A Roman temple located in Elaiussa Sebaste is dated to the Augustan period by associating it with the political events of the period, the architectural style and the materials used.[36]Also, the claim that garrison colonies were established in Cilicia during the period of Caesar sheds light on the significance of Cilicia for the Roman Republic.[37] Another important event was the appointment of King of Cappadocia, Archelaus, as the vassal king of the mountainous part of the region during the Augustan Period.[38] Augustus also appointed Athenodoros, who was his preceptor and a native of Tarsus, as the head of the government

[29] Gazzola, 1963b: 33.
[30] Gazzola, 1963a: 32-43. – O'Connor, 1993: 93- 94.
[31] Regarding the argument that the bridge called Pont Julien was named after Iulius Caesar, see Gazzola, 1963b: 127-128.
[32] O'Connor, 1993: 96-97.
[33] Gazzola, 1963b: 127; O'Connor, 1993: 97-98.
[34] The sections of the Merida Bridge associated with the period of Trajan have inscription on them. Regarding the absence of discharging arches at these sections, see Gazzola, 1963b: 121-122; O'Connor, 1993; 106-107.
[35] Hild – Hellenkemper, 1990: 154; Tobin, 1999: 381; Sayar, 1999: 373.
[36] Kaplan, 2009: 25- 26.
[37] Levick, 1967: 4.
[38] Str., *Geographika,* XIV.5.6.

of Tarsus, which was one of the most significant cities of the region.[39] All this is evidence Rome's increasing interest in the region.

At the beginning of the Early Roman Imperial Period, Cilicia *Pedias* was under the rule of the Dynasty of Tarcondimotus. The dynasty controlled the plain region on behalf of Rome, like in the case of the mountainous region. The dynasty, of which Tarcondimotus I who was of pirate origin was a member, allied itself first with Pompeius, then later with Marcus Antonius, during the Roman civil wars.[40] The dynasty, which established friendly relations with Rome, ruled the lands of *Pedias* in the name of Rome, from 69 BC to 17 AD. Cicero, the proconsul of Cilicia in 51 BC, referred to Tarcondimotus as "*the most devoted friend of the Roman people*".[41] It is known that afterwards the Dynasty of Tarcondimotus aided Marcus Antonius during the civil war between Octavian (Augustus) and Marcus Antonius. However, the dynasty was later pardoned by Octavian who returned the kingdom to Tarcondimotus II Philopator, the son of Tarcondimotus I.[42] Augustus' visit to Anazarbus in 19 BC also proves how strong the ties were between the dynasty and Rome. Following this visit, Anazarbus was renamed as *"Caesarea",* in Augustus period. The change of name was reflected on both coin legends and accounts from ancient sources.[43] The research conducted at the archaeological sites in and around Anazarbus, which was located within the realm of the Tarcondimotus Dynasty, also provides evidence of the changes that took place during the Augustan Period. It is proposed that settlers might have been relocated from the mounds of Sirkeli and Tatarlı to Anazarbus, which was refounded by Augustus with the cooperation of the dynasty. This proposal is also supported by the fact that the archaeological artifacts found in the two mounds dates back no further than the Augustan Period. It is also considered that Anazarbus was refounded because it was located on the route to Üskiyen Pass, and that, consequently, the city gained power in terms of military, administrative, and commercial activities in the following times.[44] Here, it could be suggested that Cilicia *Pedias* has seen major improvements in the context of urbanization, commercial activities, and infrastructure works, during the Augustan Period.

Based upon their architectural features, the bridges of both Kozan and Orta Tozlu are considered to be constructed initially during the Roman Period. These structures are also similar in that both have discharging arches on their bridge piers. Same kind of arches are seen on Adana Taşköprü as well, which is located within the borders of the same region as the bridges. On this basis, the dating for the original construction of Taşköprü was proposed as the Augustan Period.[45] The Kozan and Orta Tozlu bridges' discharging arches are only evident in the sections that belong to the original phase. Therefore, it is highly possible to view this architectural feature as a period characteristic.

[39] Str., *Geographika,* XIV.5.14.
[40] Tobin, 1999: 381- 385.
[41] Treggiari, 1996: 16.
[42] Tobin, 1999: 384-386.
[43] Plin., V. 22; Head, 1887: 598-599; Hild – Hellenkemper, 1990: 179; Sayar, 1999: 377.
[44] Durukan, 2015a: 246-247; Durukan, 2015b: 2-5.
[45] Göçmen, 2022: 276-280.

There could be two reasons for using this arch form in both of the bridges. This arch form could have been embraced as an architectural solution primarily to lighten the weight of the massive bridge piers. It could also be considered to serve a functional purpose, such as protecting the bridge piers from more damage when it floods.

The discharging arch form is encountered also on the bridges of different geographical territories controlled by Rome, such as Italy, Spain, and France. Moreover, these structures are suggested to be dated to a time between the Late Roman Republic and Early Roman Imperial Period. Here, the status of Cilicia *Pedias* in the early phase of the Roman Imperial Period becomes significant since it is the region the bridges discussed here are located. It is noteworthy that during this time Augustus, with the cooperation of the Tarcondimotus Dynasty, has refounded Anazarbus with commercial needs in mind. The transportation network of Anazarbus, which was refounded considering military needs in addition to becoming a commercial center as a result of the foresight and initiative of Augustus, must have been a determining part of this planning as well. Therefore, Kozan Bridge must have been built in order to transport the commercial goods coming from the east into inland Asia Minor via the Üskiyen Pass. It can be suggested that the Orta Tozlu Bridge, located 1.5 km southeast of Anazarbus, was built, besides being a part of this commercial network, to provide a connection between Anazarbus and, situated to its northeast, Flaviopolis.[46] In addition, the fact that Anazarbus was used in the following period as a military base during the Parthian expeditions suggests that these bridges might also have been built for military purposes.

Both bridges have sections associated with repairs that were done after the original construction. Kozan Bridge's sixth arch on the east from the upstream façade and the Orta Tozlu Bridge's second arch on the southeast both display the flattened pointed arch form. The arches designed in this form could be associated with the Armenians,[47] who once inhabited Cilicia *Pedias*.[48] Moreover, arches of the same design were used in the Sis Castle located to the east of the bridge, and in Armenian architecture in general.[49] Therefore, it could be proposed that some sections on both bridges were repaired between the 11th and the 14th centuries. Another different design on the Kozan Bridge is seen on the first and the third arches on the west from the upstream façade. The fact that the first arch was constructed lower and narrower than the other arches, and that it was situated further away from the other sections of the structure, as well as the different height of its arch face all bring to mind that this arch might have been used as a flood arch. Flood arches are seen in

[46] Magie, 1950: 1440.
[47] Hançer, 2016: 288-291.
[48] The eighth and the eleventh arches of Adana Taşköprü also display the same form. Moreover, stylized antithetic lions, which were employed on Armenian pennants and coins, were found in relief on the eleventh arch. For detailed information, see Göçmen, 2022: 280.
[49] Flattened pointed arches were also employed in the Seven Churches in Van, which is associated with the Armenian Kingdom. See Özcan 2010: 45. The Armenian Kingdom had established a strong dominance over Cilicia Pedias, which also included Anazarbus and Kozan. See Hançer, 2016: 289-290.

bridges from the Seljuk and Ottoman periods.[50] Similar to the first arch, the form of the third arch on the west side from the upstream façade is different in design. This arch, together with the discharging arch on its east, differs from most of the structure with its narrow-pointed arch design. In previous years, an inscription bearing the date 1776 and a tulip figure were discovered on the downstream façade of this arch.[51] This important discovery shows that the bridge underwent some large repairs, first during the Armenian Kingdom, and then later in the 18th century.

As a result, based on the architectural features, the historical events, and the archaeological data collected from the settlements of the region, it could be suggested that the Kozan and the Orta Tozlu bridges were originally constructed during the Augustan Period. Both structures must have been designed as parts of the same plan to meet military and commercial needs. The accuracy of this planning was attested when Anazarbus later became a metropolis that can rival in size the capital of the region, Tarsus. The Cilicia Region, which connects Asia Minor and Mesopotamia, features two important passes between high mountains. One of them is the Gülek Pass and the city of Tarsus lies to its south. The second one is the Üskiyen Pass and the city of Anazarbus is located to its south. Consequently, their locations and said passes must also have played a decisive role in the planning of the transportation network of these cities, and the bridges must have been built, driven by military and commercial needs, to overcome the geographical barriers that interrupted the roads.

Bibliography

Ancient Sources

Arr. *Anab.* *(*=Arrianos, *Anabasis)*, Kullanılan Metin ve Çeviri: Arrianos, *Alexandrou Anabasis*, Çev.: Furkan Akderin, Alfa Yayınları, İstanbul 2005.

Hdt. (=Herodotos, *Historia)*, Kullanılan Metin ve Çeviri: Herodotos, *Tarih*, Çev.: Müntekim Ökmen, Türkiye İş Bankası Kültür Yayınları, İstanbul 2006.

Plin. (=Pliny The Elder, *HN*), Kullanılan Metin ve Çeviri: Pliny, *The Natural History*, Trans.: John Bostock & Henry Thomas Riley, The Natural History of Fishes, London 1855.

Str. (=Strabon, *Geographika XII-XIII-XIV)*, Kullanılan Metin ve Çeviri: Strabon, *Geographika)*, Çev.: Adnan Pekman, Arkeoloji ve Sanat Yayınları, İstanbul 2009.

[50] Tunç, 1978: 8.
[51] Kütük, 2009: 10.

Modern Kaynaklar

ALİOĞLU, E., F., 1991. *Geleneksel Yapı Elemanları*, Yıldız Teknik Üniversitesi Fen Bilimleri Enstitüsü, Yayımlanmamış Doktora Tezi, İstanbul.

ALABOZ, M., 2008. *Mimar Sinan Köprülerinin Güncel Durum Değerlendirmesi ve Kapuağası Köprüsü Restorasyon Projesi*, İstanbul Teknik Üniversitesi Fen Bilimleri Enstitüsü, Yayımlanmamış Yüksek Lisans Tezi, İstanbul.

BALLANCE, M. H., 1951. "The Roman Bridges of The Via Flaminia", *Papers of The Britisch School at Rome* 19, pp. 78 – 117.

BEYER, L., 2012. *Arched Bridges*, University of New Hampshire, Unpublished Honor Thesis, Durham.

BEKTAŞOĞLU, M., 2013. *Anadolu Şehrinin Su Yapıları*, Aski Genel Müdürlüğü Yayınları, Ankara.

ÇULPAN, C., 2002. *Türk Taş Köprüleri*, Türk Tarih Kurumu, Ankara.

DURUKAN, M., 2004. "Olba Bölgesinde Kullanılan Polygonal Duvar Tekniği", *Anadolu Anatolia 26*, pp.39 – 63.

DURUKAN, M., 2015a. "Geç Antik Çağda Doğu Akdeniz'deki Ekonomik Gelişmenin Nedenleri: İpek Yolu ve Baharat Yolunun Rolü, LR1 Amphoraları ve Kilikia'daki Diğer Kanıtlar", *ADALYA XVIII*, pp. 241– 257.

DURUKAN, M., 2015b. "Anazarbus, Aegeai ve Tarsus Kentlerinin Ticaret Yollarıyla Bağlantısı", *Çukurova Araştırmaları Dergisi 1*, pp. 1– 7.

DURUKAN, M. – GÖÇMEN, İ., 2022. "The Construction Date of the Misis Bridge", *GEPHYRA 23*, pp. 87-100.

ERZEN, A., 1940. *Kilikien Bis Zum Ende Perserherrschaft*, Universität Leipzig, Nicht Veröffentliche Dissertation These, Leipzig.

HANÇER, E., 2016. "Kilikya Ermeni Prensliği'nin İkinci Başkenti Anazarva", *ADALYA XIX*, pp. 283 – 314.

HEAD, B. V., 1887. *Historia Numorum: A Manual of Greek Numismatics*, Clarendon Press, Oxford.

HILD, F. – HELLENKEMPER, H., 1990. *Kilikien und Isaurien TIB V*, Verlag der Österreichischen Akademie der Wissenschaften, Wien.

GAZZOLA, P., 1963a. *Ponti Romani: Ponte Pietra*, Leo S. Olschki, Frenze.

GAZZOLA, P., 1963b. *Ponti Romani, Contributo Ad Un Indice Sistematico Con Studio Critico Bibliografico*, Frenze.

GENÇER, F. U. – TURAN, M. H., 2017. "The Masonry Techniques of A Historical Bridge in Hypokremnos (İçmeler)", *Middle East Technical University Journal of The Faculty of Architecture 1*, pp. 187 – 207.

GÖÇMEN, İ., 2021. *Cilicia Bölgesi Köprüleri*, Mersin Üniversitesi, Sosyal Bilimler Enstitüsü, Yayımlanmamış Doktora Tezi, Mersin.

GÖÇMEN, İ. – Durukan, M., 2021. "Iustinianus/Bac Bridge over the Cydnus River", *International Archaeology, Art, History and Cultural Heritage*

Congress, Eds.: Mehmet Ali Kaya – Kenan Beşaltı, Iksad Publications, pp. 346-358.

GÖÇMEN, İ., 2022. "Chronological Problems of The Adana Taşköprü", *CEDRUS X*, pp. 273 – 287.

GÖÇMEN, İ., 2022. "The Oldest Stone Bridge of Anatolia: Tarsus Bridge", *Olba XXX*, pp. 307-326.

KAPLAN, D., 2009, "Ein Neuer Kultvorschlag für den Tempel in Elaiussa Sebaste (Kilikien)", *Olba XVII*, pp. 23 – 32.

KÜTÜK, A., 2009. "Tarihi Kozan Köprüsü", *Kozan Sevdası 7*, pp. 8 – 16.

LEVICK, B., 1967. *Roman Colonies in Southern Asia Minor*, Clarendon Press, Oxford.

MAGIE, D., 1950. *Roman Rule in Asia Minor*, Princeton University Press, New Jersey.

O'CONNOR, C., 1993. *Roman Bridges*, Cambridge University Press, Cambridge.

ÖZCAN, H., 2010. "Van ve Çevresindeki Hıristiyanlık Dönemi Yapılarının Plan Açısından Değerlendirilmesi", *Sanat Dergisi 6*, pp. 43 – 54.

SAYAR, M. H., 1992. "Doğu Kilikya'da Epigrafi ve Tarihi Coğrafya Araştırmaları 1990", *IX. Araştırma Sonuçları Toplantısı*, pp. 171 – 182.

SAYAR, M. H., 1999. "Tarkondimotos Seine Dynastie, Seine Politik und Sein Reich", *La Cilicie: Espaces e Pouvoris Locaux Table Ronde Internationale*, Eds.: Eric Jean – Ali M. Dinçol – Serra Durugönül, Institut Francais d'Etudes Anatoliennes Georges Dumézil, İstanbul, pp. 373 – 380.

SAYAR, M. H., 2019. "Römische Straßen und Meilensteine im Ebenen Kilikien, Roman Roads: new Evidence – New Perspectives", *De Gruyter*, pp. 147 – 165.

SONAVANE, T., 2014. *Analysis of Arches*, University of Colorado, PhD Thesis, Boulder.

STACCIOLI, R. A., 2003. *The Roads of The Romans*, Paul Getty Publications, Los Angeles.

STRICKLAND, M. H., 2010. *Roman Building Materials, Construction Methods, and Architecture: The Identity of an Empire*, Clemson University Press, South Carelino.

TAYLOR, R., 2002. "Tiber River Bridges and the Development of the Ancient City of Rome", *The Waters of Rome 2*, pp. 1 – 20.

TOBIN, M. H., 1999. "Tarcondimotid Dynasty in Smooth Cilicia", *La Cilicie: Espaces e Pouvoris Locaux Table Ronde Internationale*, Eds.: Eric Jean – Ali M. Dinçol – Serra Durugönül, Institut Francais d'Etudes Anatoliennes Georges Dumézil, İstanbul, pp. 381– 387.

TREGGIARI, S., 1996. *Cicero's Cilician Letters*, London Association of Classical Teachers, London.

TUNÇ, G., 1978. *Taş Köprülerimiz*, Karayolları Genel Müdürlüğü Matbaası, Ankara.

TYRRELL, H. G., 1911. *History of Bridge Engineering*, Forgetten Books, London.

WHEELER, M. 2004. *Roma Sanatı ve Mimarlığı*, Çev.: Zeynep Koçel Erdem, Homer Kitabevi, İstanbul.