



PAMUKKALE ÜNİVERSİTESİ ARKEOLOJİ ENSTİTÜSÜ SÜRELİ YAYINI  
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## LYCUS DERGİSİ'NİN AMACI, KAPSAMI VE YAYIN POLİTİKASI

### Amaç

Lycus Dergisi, her yıl Haziran ve Aralık aylarında olmak üzere yılda iki sayı olarak yayımlanan, bilimsel ve hakemli bir e-dergidir. Lycus Dergisi; başta Anadolu Arkeolojisi, Antik Dönem Tarihi Coğrafyası, Prehistorya, Protohistorya, Önasya ve Klasik Arkeoloji, Müzecilik, Eskiçağ Tarihi, Epigrafi, Nüvizmatik, Antropoloji, Arkeometri, Koruma-Onarım, Mimarlık Tarihi gibi alanların konularını kapsayan, disiplinler arası çalışmaları yayımlamayı amaçlamaktadır.

### Kapsam

Lycus Dergisi, Anadolu Arkeolojisi, Tarihi Coğrafyası olmak üzere Prehistorik Dönem'den başlayarak, günümüze kadar olan kültür mirası, buluntular, arkeolojik kazı ve yüzey araştırmalarının sonuçları, restorasyon, konservasyon, müzecilik, antropoloji, epigrafi, etno-arkeoloji gibi bilimsel çalışmaları kapsar. Bunların dışında ilk defa yapılan tespitler, uygulamalar ve analiz çalışmalarının yer aldığı yazıları içerir.

### Yayın Politikası

- Lycus Dergisi, Haziran ve Aralık ayı olmak üzere yılda iki sayı olarak yayımlanır. Hakem değerlendirme sürecinden olumlu görüş alan makaleler, yıllık yayın için belirlenen hedefi aşması durumunda bir sonraki sayıda yayımlanması amacıyla havuzda bekletilir. Makalelerdeki öncelik, yazar tarafından çalışmanın gönderildiği tarih ve makale niteliği göz önüne alınarak belirlenir.

- Lycus Dergisi'ne gönderilen çalışmaların daha önce herhangi bir yayın organında yayımlanmamış olması ve sisteme eklendiğinde bir başka yayın organının değerlendirme aşamasında bulunmaması gerekir. Yayımlanmak üzere gönderilen çalışma, yazarın tezinden (lisans/yüksek lisans/doktora) üretilmişse veya bilimsel bir kongre/toplantıda sunulmuşsa bunun başlığa konulacak dipnot ile açıklanması gereklidir. Bu çalışma, yayın kurulu tarafından uygun görüldüğü takdirde tarih ve yer bildirmek şartı ile kabul edilebilir.

- Başvurunun yapılmasından, yazının yayımlanma aşamasına kadar geçen süreçteki bütün işlemler elektronik ortamda (<https://dergipark.org.tr/lycus>) gerçekleşir. Herhangi bir yazının elektronik sisteme eklenmesi, çalışmanın yayımlanması için başvuru olarak kabul edilir ve değerlendirme süreci başlar. Yazarlar yayımlanmak üzere gönderdikleri çalışmaların yayın haklarını, Pamukkale Üniversitesi Arkeoloji Enstitüsü bünyesindeki Lycus Dergisi'ne devretmiş olurlar. Lycus Dergisi'nde yayımlanan çalışmaların telif hakkı dergiye ait olup referans gösterilmeden aktarılamaz, çoğaltılamaz ve dergi yönetiminden izin alınmaksızın bir başka yayın organında yayımlanamaz. Yayımlanan çalışmalar için yazarlara telif ücreti ödenmez.

- Lycus Dergisi'nde yayımlanmış yazılardan kaynaklanması muhtemel herhangi bir bilimsel, etik ve hukuki sorumluluk, yazar/yazarlara aittir. Bu hususta Dergi, herhangi bir hükümlülük kabul etmez.

- Dergiye gönderilen yazıların dergi kurallarına göre düzenlenmiş olması gereklidir. Yayın alt komisyonu, yazım kurallarına uymayan yazıları yayımlamama veya düzeltmek üzere yazar/yazarlara iade etme yetkisine sahiptir. Lycus Dergisi'nde yayımlanacak makalelerin yazarlarının TELİF HAKKI DEVRİ FORMU'nu eksiksiz doldurarak, ıslak imza ile adresimize göndermeleri gerekmektedir. Çalışma Dergi'ye gönderildikten sonra, hiçbir aşamada, Telif Hakkı Devri Formu'nda belirtilen yazar adları ve sıralaması dışında yazar adı eklenemez, silinemez ve sıralamada değişiklik yapılamaz.

- Etik İlkeler ve Yayın Politikasıyla ilgili daha kapsamlı bilgiye <https://dergipark.org.tr/tr/pub/lycus/policy> sayfasından ulaşabilirsiniz.

## YAZIM KURALLARI

1. Makaleler World ortamında, Times New Roman harf karakteri kullanılarak yazılmış olmalıdır. Yunanca alıntılar dışında tüm metin tek yazı karakteri ile oluşturulmalıdır.
2. Metin 11 punto; özet, dipnot, katalog 9 punto; kaynakça 10 punto olmalı, tek satır aralıkla yazılmalıdır.
3. A4 boyutundaki yazılarda, sayfanın solundan ve üstünden 3 cm, sağından ve altından 2 cm boşluk bırakılmalıdır.
4. Ana başlık metnin yazıldığı dilde, 11 punto, düz ve kelimelerin ilk harfi büyük harfler ile ortalanarak, koyu yazılmalıdır. Yabancı dildeki başlık, ana başlığın bir alt satırında, 12 punto, italik ve kelimelerin ilk harfi büyük harfler ile ortalanarak, koyu yazılmalıdır.
5. Başlık altında, ortalanarak yazar/yazarların isimleri, 10 punto ve koyu yazılmalıdır. Yazar isimleri yıldızlı dipnot (\*) ile dipnotta gösterilmeli, dipnotta ise yazarın akademik unvanı, çalıştığı kurumun adı, adresi ve e-posta adresi ile ORC-ID numaraları belirtilmelidir.
6. Yazar isimlerinin altında, 200 kelimeyi aşmayacak şekilde, ancak en az 150 kelime özet yazılmalıdır. Özette çalışmanın amacı, içerik ve sonuçları hakkında kısa ve açıklayıcı bilgiler bulunmalıdır. Özete en az 4, en fazla 6 kelimedenden oluşan anahtar kelimeler verilmelidir. Yabancı dildeki çalışmalarda metnin kaleme alındığı dilde ve Türkçe özet, Türkçe yazılmış çalışmalarda ise metin dilinde ve İngilizce özet yer almalıdır.
7. Dipnotlar sayfanın altında verilmeli ve makalenin başından sonuna kadar sayısal süreklilik izlemelidir.
8. Metin içerisindeki alt başlıklarda kelimelerin ilk harfi büyük, diğer harfleri küçük olmak üzere 11 punto olmalı ve koyu yazılmalıdır.
9. Çalışmanın tamamı, özet, kaynakça ve figürler ile birlikte 20 sayfayı geçmemeli, sağ alt köşeye sayfa numarası eklenmelidir. Bu sınırlamayı aşan çalışmalarda, editörlerin takdir hakkı göz önüne alınacaktır.
10. Makalede kullanılacak fotoğraf, resim, çizim ve harita gibi görsel verilerde "Fig." kısaltması kullanılmalı, numaralandırmada süreklilik gözetilmelidir. Metnin içinde kullanılan "Fig." ibaresi parantez içerisinde yer almalıdır. İki'den fazla figür belirtiliyorsa, iki rakam arasına boşluksuz tire (Fig. 2-4) konulmalıdır. Figür çözünürlükleri 300 dpi'den aşağı olmamalı ve JPEG formatında gönderilmelidir. Figürlerin listesi metnin sonunda, kaynakça bölümünün öncesinde yer almalıdır.
11. Kaynakça, makalenin sonunda bulunmalıdır. Kaynakçanın devamında, varsa figürler yer alır.
12. Makaleler, editörlerin önerileri doğrultusunda seçilen çift taraflı-kör hakemlik (gerektiğinde 3. hakeme gönderilebilir) ilkesine uygun olarak değerlendirilmektedir. Yazarın kimliğinden bağımsız olarak değerlendirilen yazılar için hakemlerin gerekli gördüğü düzeltme ve görüşler yazara iletilir. Yazım kurallarına uygun olmayan makaleler ise işleme konulmadan, yazarına iade edilecektir. Yazar, hakemlerden gelecek değişiklik, düzeltme ve ilaveleri yapmayı taahhüt etmiş sayılır.
13. Yayımlanan yazıların bilimsel sorumluluğu yazar/yazarlara aittir. Bu çalışmalar doğrudan ya da dolaylı olarak Lycus Dergisi'nin görüşü niteliği taşımaz.
14. Dipnot kaynakları aşağıdaki kurallara göre hazırlanmalıdır;  
Tek Yazarlı Kaynak Gösterme: İnan 1987, 121.  
İki Yazarlı Kaynak Gösterme: Şimşek – Duman 2007, 75.  
İki'den fazla yazarı kaynak gösterme: Hobbs v.d. 1998, 358.  
Birden fazla kaynaktan yapılan alıntıyı gösterme: Kadioğlu 2006, 152; Ismaelli 2009, 25.  
Birden fazla soy ismi taşıyan yazarı kaynak gösterme: Dönmez-Öztürk 2006, 95.  
\*Dipnotlarda sayfa numaraları verilirken, tam aralık verilmeli (İnan 1987, 121-125), "vd., vdd." gibi kısaltmalar kullanılmamalıdır.
15. Kaynakça aşağıdaki kurallara göre hazırlanmalıdır;
  - Kitap kaynak gösterme:  
Bailey 1980

D. M. Bailey, *Roman Lamps Made in Italy, A Catalogue of the Lamps in the British Museum II*, London, 1980.

Demirhan-Erdemir 2015

A. Demirhan Erdemir, *Prehistorik ve İlk Çağlarda Tıp*, İstanbul, 2015.

Humann v.d. 1898

C. Humann – C. Cichorius – W. Judeich – F. Winter, *Altertümer von Hierapolis*, Berlin, 1898.

• Çeviri Yapılmış Kitabı Kaynak Gösterme:

Deighton 2005

H. J. Deighton, *Eski Atina Yaşantısında Bir Gün*, Çev. H. Kökten-Ersoy, İstanbul, 2005.

Magie 2001

D. Magie, *Anadolu'da Romalılar I, Attalos'un Vasiyeti*, Çev. N. Başgelen – Ö. Çapar, İstanbul, 2001.

• Editörlü Kitapta Bölümü Kaynak Gösterme:

Atila – Gürler 2010

C. Atila – B. Gürler, “Bergama Müzesi'nde Bulunan Roma Dönemi Cam Eserleri”, *Metropolis İonia II Yolların Kesiştiği Yer Recep Meriç İçin Yazılar/The Land of the Crossroads Essays in Honour of Recep Meriç*, Ed. S. Aybek – A. K. Öz, İstanbul, 2010, 47-53.

• Makale Kaynak Gösterme:

Başaran 1990

S. Başaran, “1988 Yılı Enez Kazısı Çalışmaları”, *11. Kazı Sonuçları Toplantısı 2*, Ankara, 1990, 107-123.

Kaya 2009

M. A. Kaya, “Anadolu'da Roma Egemenliği (İÖ 205-25)”, *Doğu Batı Dergisi* 49, Ankara, 2009, 195-234.

Murat 2003

L. Murat, “Ammihanta Ritüelinde Hastalıklar ve Tedavi Yöntemleri”, *Archivum Anatolicum* 4/2, 2003, 89-109.

Şimşek – Duman 2007

C. Şimşek – B. Duman, “Laodikeia'da Bulunan Ampullalar”, *Olba XV*, İstanbul, 2007, 73-101.

• Yayımlanmamış Tez Çalışmasını Kaynak Gösterme:

Söğüt 1998

B. Söğüt, *Kilikya Bölgesi'ndeki Roma İmparatorluk Çağı Tapınakları*, Selçuk Üniversitesi, Sosyal Bilimler Enstitüsü, Yayımlanmamış Doktora Tezi, Konya, 1998.

Erön 2007

A. Erön, *Anadolu'da Roma Dönemi Tapınaklarında Görülen Bezemeli Frizler*, Adnan Menderes Üniversitesi, Sosyal Bilimler Enstitüsü, Yayımlanmamış Yüksek Lisans Tezi, Aydın, 2007.

• Antik Dönem Metinlerini Kaynak Gösterme:

Antik döneme ait edebi bir metinden yapılan alıntılar, dipnot yerine metin içerisinde ve parantez içerisinde “Plinius (*nat.* V.105)”, “Strabon (XII.8.16)” verilmelidir. Metin ya da dipnot içerisinde kullanılan antik dildeki terimler ya da kısa cümleler italik olarak verilmelidir. Antik kaynaklar *Der Neue Pauly*'de verilen standartlara uygun olmalıdır.

**16.** Dipnot ve kaynakçada bir yazarın aynı yılda yayımlanmış birden fazla eseri kullanılacaksa, yıldan sonra alfabenin başlangıç harfinden başlayarak küçük harf ekleyerek (Şimşek 2002a, 3; Şimşek 2002b, 231) numaralandırılmalıdır.

**17.** Başvurular <https://dergipark.org.tr/lycus> adresi üzerinden yapılmalıdır; bununla birlikte gerektiğinde [lycus@pau.edu.tr](mailto:lycus@pau.edu.tr) e-posta adresinden de yapılabilir.

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Humann v.d. 1898

C. Humann – C. Cichorius – W. Judeich – F. Winter, *Altertümer von Hierapolis*, Berlin, 1898.

• Translated works:

Deighton 2005

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• Referencing chapters in edited works:

Atila – Gürler 2010

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• Articles in periodicals or periodic series:

Başaran 1990

S. Başaran, “1988 Yılı Enez Kazısı Çalışmaları”, *11. Kazı Sonuçları Toplantısı*, vol. 2, Ankara, 1990, 107-123.

Kaya 2009

M. A. Kaya, “Anadolu'da Roma Egemenliği (İÖ 205-25)”, *Doğu Batı Dergisi* 49, Ankara, 2009, 195-234.

Murat 2003

L. Murat, “Ammihanta Ritüelinde Hastalıklar ve Tedavi Yöntemleri”, *Archivum Anatolicum* 4/2, 2003, 89-109.

Şimşek – Duman 2007

C. Şimşek – B. Duman, “Laodikeia'da Bulunan Ampullalar”, *Olba* XV, 2007, 73-101.

• Referencing unpublished dissertations:

Söğüt 1998

B. Söğüt, Kilikya Bölgesi'ndeki Roma İmparatorluk Çağı Tapınakları, Selçuk University, Institute of Social Sciences, unpublished PhD dissertation, Konya, 1998.

Erön 2007

A. Erön, Anadolu'da Roma Dönemi Tapınaklarında Görülen Bezemeli Frizler, Adnan Menderes University, Institute of Social Sciences, unpublished master's dissertation, Aydın, 2007.

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## **Ionic Architecture in Hierapolis of Phrygia in the Hellenistic and Imperial Periods: Architectural Models, Iconographic Schemes and Formal Language**

*Phrygia Hierapolis'nde Hellenistik ve Roma İmparatorluk Dönemleri İon Mimarisi: Mimari Modeller, İkonografik Şemalar ve Stiller*

**Sara BOZZA\***

### **Abstract**

The article offers a summary of the recent monographic study on the Ionic architecture of Hierapolis of Phrygia (S. Bozza, *Architettura ionica a Hierapolis di Frigia, Hierapolis di Frigia XIV*, Istanbul, 2020), analysed in the context of the imperial architecture of Asia Minor. In the first part, the article gives a brief account of the main Ionic monuments of the city in a chronological order. Then, a description of the diachronic evolution of the Ionic architecture of Hierapolis is provided from the point of view of the iconographic schemes and the use of decorative patterns, with special attention to the Ionic capitals. In the third part, I propose some reflections on the development of local formal language and on the role of marble workshops; specifically, I analyse some iconographic and stylistic features of the Ionic architecture of Hierapolis, especially focusing on the capitals, the workmanship of the echinus and the canalis of the volute. Lastly, in the fourth section, the article offers some remarks on the architectural layout and the symbolic values of the monuments, emphasising that the Ionic order represented a distinctive feature of both sacred architecture and public monuments of Hierapolis throughout the imperial period, as a powerful symbol of the local identity, since it was inspired by the most ancient urban landscapes of the Microasiatic cities.

**Keywords:** Hierapolis of Phrygia, Asia Minor, Ionic Architecture, Architectural Decoration, Ionic Capitals, Sanctuaries.

### **Öz**

Makale, Küçük Asya İmparatorluk mimarisi bağlamında analiz edilen Frigya'daki Hierapolis'in İonik mimarisi üzerine hazırlanan son monografik çalışmanın (S. Bozza, *Architettura ionica a Hierapolis di Frigia, Hierapolis di Frigia XIV*, İstanbul, 2020) bir özetini sunmaktadır. Makalenin ilk bölümünde, kentin başlıca İonik yapıları kronolojik bir sırayla kısaca anlatılmaktadır. Daha sonra, Hierapolis İon mimarisinin artzamanlı gelişiminin tanımı, İon başlıklarına özel dikkat gösterilerek, ikonografik şemalar ve dekoratif desenlerin kullanımı açısından ele alınmaktadır. Üçüncü bölümde, lokal biçimsel dilin gelişimi ve mermer atölyelerinin rolü hakkında bazı düşünceler öne sürüyorum; özellikle, Hierapolis İon mimarisinin bazı ikonografik ve stilistik özelliklerini, bilhassa başlıklara, ekinus işçiliğine ve volüt kanallarına odaklanarak, inceliyorum. Son olarak, dördüncü bölümde makale Küçük Asya'nın en eski şehirlerinin kentsel peyzajlarından esinlendiği için yerel kimliğin güçlü bir sembolü olarak İon düzeninin İmparatorluk dönemi boyunca Hierapolis'in hem dinsel mimarisinin hem de kamusal anıtlarının ayırt edici bir özelliğini temsil ettiğini vurgulayarak, yapıların mimari düzeni ve simgesel değerleri hakkında bazı görüşler sunmaktadır.

**Anahtar Kelimeler:** Frigya Hierapolisi, Küçük Asya, İon Mimarisi, Mimari Dekorasyon, İon Başlıkları, Kutsal Alanlar.

## Introduction

In recent years, thanks to the advance of excavations at Hierapolis of Phrygia, a fruitful line of studies on ancient architecture produced a strong increase of knowledge on the urban development and architectural culture of the ancient city<sup>1</sup>. These studies analysed the Hierapolitan monuments in order to reconstruct their plan and elevation, their stylistic features and chronology, and to investigate the ancient procurement of building materials<sup>2</sup>.

A monographic volume, in particular, systematically analysed the numerous Ionic monuments of Hellenistic and imperial age, defining the diachronic evolution of Ionic architecture in Hierapolis<sup>3</sup>. This article offers a summary of that study, presenting the most significant monuments and materials for the reconstruction of the local Ionic language and for its comprehension in the context of imperial architecture in Asia Minor. Special attention is devoted to the Ionic capitals.

### 1. The Ionic Monuments of Hierapolis

Hierapolis of Phrygia was founded by the Seleucids in the 3<sup>rd</sup> cent. BC on a plateau overlooking the Lycus valley, and had an extraordinary urban development between the age of Augustus and the Severans, with the monumentalisation of the main civil and religious spaces. The Ionic order was an essential, long-lasting architectural language (Fig. 1); indeed, it was widely used from the Hellenistic to the imperial age in public and sacred buildings of different types, and in domestic architecture (Fig. 2).

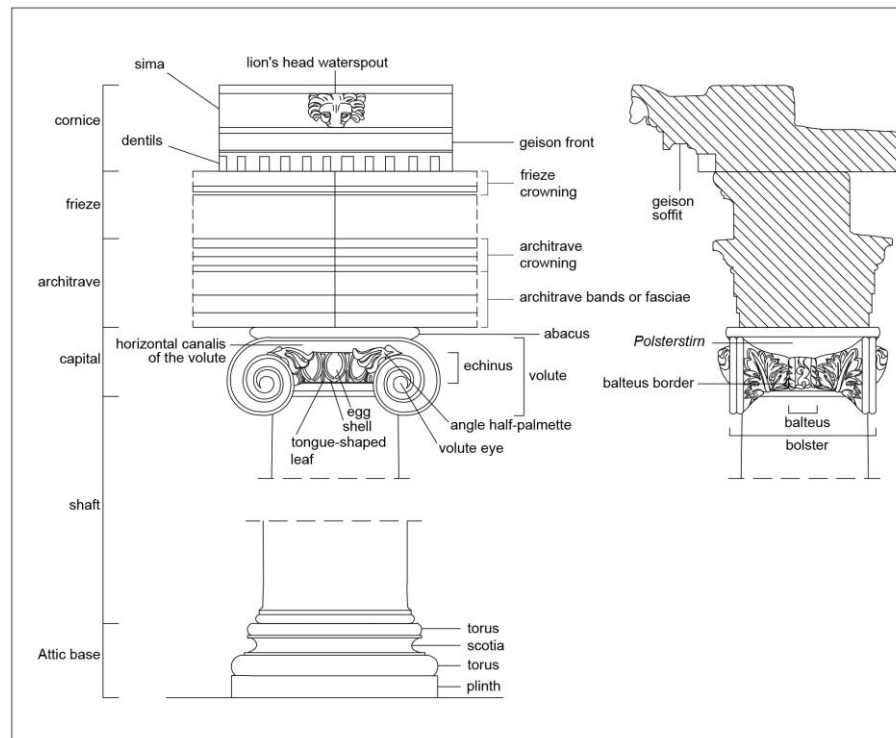


Fig. 1. Terminology of the Ionic order (mainly based on Ginouvès 1985 and Vandepuut 1997)

<sup>1</sup> This article aims to offer a summary of my volume *Architettura ionica a Hierapolis di Frigia, Hierapolis di Frigia XIV*, published in 2020 by Ege Yayınları (Istanbul). I wish to express my great gratitude to Prof. Francesco D'Andria for having assigned me this important theme for my PhD dissertation (2013-2016) and Dr. Tommaso Ismaelli for his continuous support throughout the research. I wish to thank Prof. Bahadır Duman for his kind invitation to contribute to this issue of the *Lycus Journal*.

<sup>2</sup> Ismaelli 2009; Romeo et al. 2014; Ismaelli – Scardozi 2016; Ismaelli 2017; Campagna 2018; Bozza 2020.

<sup>3</sup> Bozza 2020.



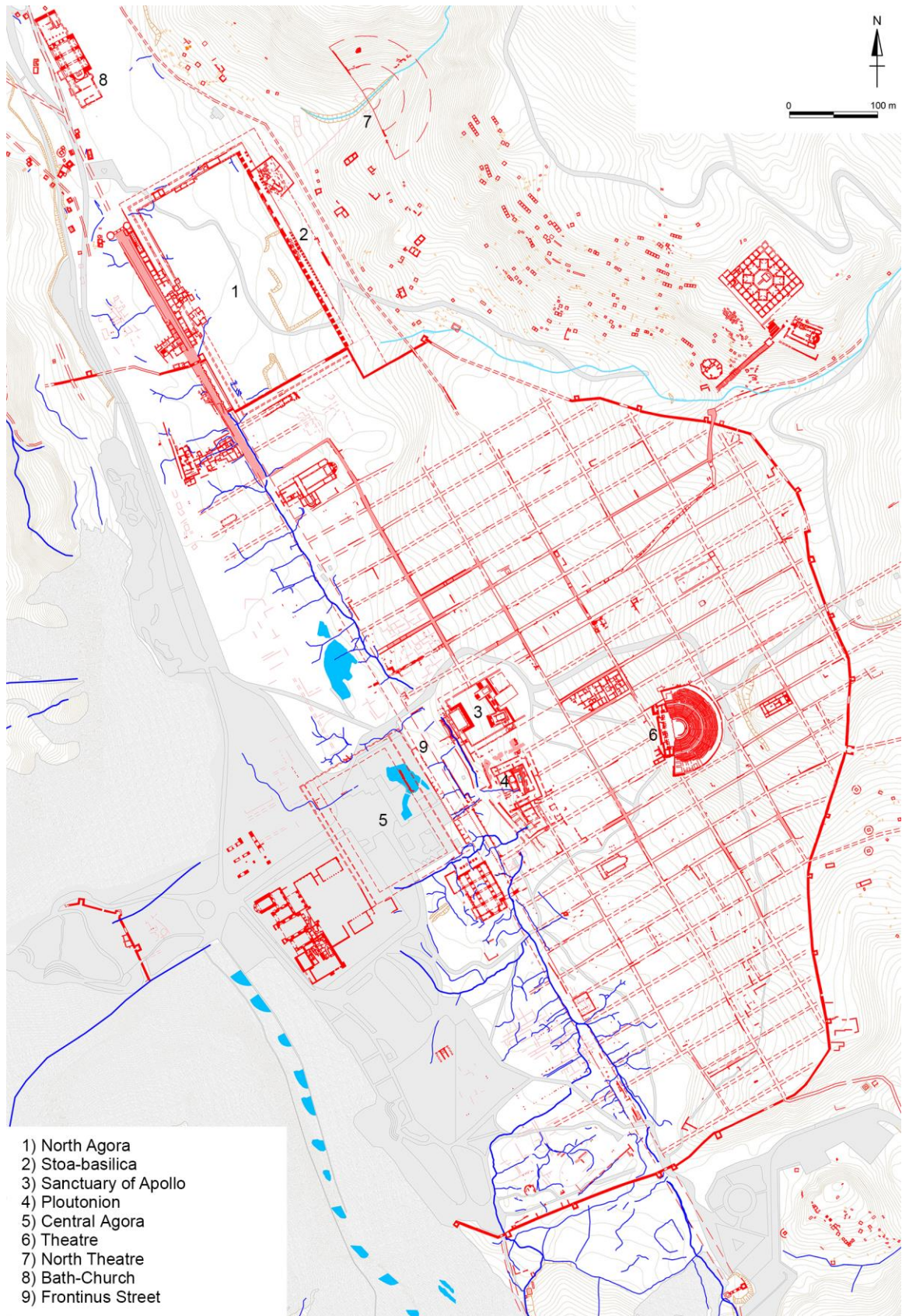


Fig. 2. General plan of Hierapolis, with the indication of the main cited monuments (modified after Scardozi 2015)



The first examples are significantly located in the sanctuaries, whose presence was a founding element of the city itself and its identity as *ἱερὰ πόλις*: the poliadic Sanctuary of Apollo<sup>4</sup> and the Ploutonion<sup>5</sup>, an ancient cult place of Cybele, later identified as a gateway to the Underworld and connected to the cult of Pluto and Kore. Further evidence of the use of the Ionic order can be found in the public spaces, such as the scaenae frons of the Augustan theatre<sup>6</sup> and the agorai: the early imperial Central Agora<sup>7</sup> and the North Agora, built in the 2<sup>nd</sup> cent. AD together with the impressive Stoa-basilica<sup>8</sup>.

### Hellenistic Period

The Ionic order was used in the Ploutonion during its first phase of monumentalisation in the 2<sup>nd</sup> cent. BC, when the city passed under the Attalid rule. A big travertine aedicula (8 m wide and around 8.24 m high with the pediment) was built in a raised, dominant position above the sacred cave of Pluto, emphasising the main sanctuary entrance on the east side of the temenos wall. The tetrastyle front of this aedicula, facing west, was made up of two lateral pillars and two columns, with Attic bases, fluted shafts and Ionic capitals, and an entablature of which only a few cornices with dentils are preserved<sup>9</sup>.



Fig. 3. The leaf supporting the angle half-palmette of the Ionic capital: Hellenistic monument in the Ploutonion (a); sporadic capital SCa54 from Hierapolis (b); late-Classical Artemision of Ephesus (c, temple, after Bammer 1972; d, altar)

As for the capital, it is interesting to stress the presence between the echinus and the volutes of a leaf (originally supporting the angle half-palmette), which has concave, pointed lobes and a thin mid-rib<sup>10</sup> (Fig. 3, a). This leaf represents a

<sup>4</sup> Semeraro 2007; Semeraro 2012; Semeraro 2016.

<sup>5</sup> D'Andria 2018; Panarelli 2022.

<sup>6</sup> Ismaelli et al. 2016.

<sup>7</sup> Ismaelli et al. 2017.

<sup>8</sup> Rossignani – Sacchi 2007; D'Andria – Rossignani 2012.

<sup>9</sup> On this building, see Bozza 2020, 239-243, figs. 177-179; Bozza et al. 2022.

<sup>10</sup> Front face of the capital: type B according to the classification of Bingöl 1980, 25.

sophisticated and unusual solution<sup>11</sup>, perhaps inspired by Pergamene models (capitals with a leaf in the same position, but with a smooth surface)<sup>12</sup> and by the late-Classical Artemision of Ephesus (capitals of the temple and altar, with similar polylobed leaf)<sup>13</sup> (Fig. 3, c-d). On the lateral face of the capital, the balteus that continues on the *Polsterstirn*<sup>14</sup> is also noteworthy: it is a typical solution of the capitals of Attalid monuments<sup>15</sup>. The closest comparisons for the Ploutonion capital can be found in the peristyle of the House of Consul Attalos in Pergamon<sup>16</sup> and an Ionic limestone building in Apamea Kibotos<sup>17</sup>. The Ionic monument of Hierapolis, therefore, appears totally coherent with the crucial moment of integration of the city into the Attalid Kingdom and we can perhaps hypothesise the possible intervention of craftsmen from Pergamon.

### **Augustan and Julio-Claudian Period**

The Augustan age represents in Hierapolis, as in many other cities of Asia Minor, a phase of great prosperity and redefinition of the urban layout. The architectural projects of the sanctuaries and other essential gathering spaces of the civic life of the polis were elaborated, such as the Agora, the Gymnasium<sup>18</sup>, and the Theatre.

First, the sacred cave of the Ploutonion was monumentalised with the construction of a travertine façade (16.66 m long and 2.58 m high) made up of slabs and animated by half-columns<sup>19</sup> that framed a marble arch (Fig. 16, b). The half-columns have unfluted shafts, without bases. The capital presents an echinus decorated by an egg-and-tongue motif (three triangular, pointed eggs). A membrane connects the tongue-shaped intermediate leaves with the egg shells (Fig. 7). The façade is completed at the top by two-fasciae architraves. The dedicatory inscription that mentions Pluto and Kore, only partially preserved, is engraved on the upper band<sup>20</sup>. The capitals represent the main dating element of the structure: the best *comparandum* is found in Ephesus in the Rhodian peristyle, in particular for the front face<sup>21</sup>.

At the same time, in the Sanctuary of Apollo, the poliadic deity of the city, a magnificent architectural project was developed in the Augustan age. It comprised the creation of terraces surrounded by porticos and the construction of three temples, all in marble. The construction works lasted several decades; between the Augustan and the Julio-Claudian period, the following structures were built: the lower terrace enclosed by a Doric portico<sup>22</sup>, the oracular temple of Apollo (Temple A, a Corinthian pseudo-monopteros)<sup>23</sup>, Temple C (the smallest temple, whose elevation

<sup>11</sup> In Hierapolis, besides this capital, only an example of a similar scheme with polylobed leaf is attested: the sporadic capital SCa54 of the Augustan period (Figs. 3, b; 7); see Bozza 2020, 291-292, figs. 179, c; 217. Instead, the leaf is smooth in the Ionic capital of the Augustan Theatre and in one capital (PCa3) of the portico of the Ploutonion (see below for these monuments).

<sup>12</sup> E.g. the Pergamon Altar (Rumscheid 1994, II, 56-57, pls. 122, 2; Heilmeyer 1997, 182-183).

<sup>13</sup> Rumscheid 1994, II, 14-15, pl. 34, 4 (temple); Muss – Bammer 2001, 61-70, figs. 234-260 (altar).

<sup>14</sup> Bingöl 1980, 55, type 1. The *Polsterstirn* is the vertical surface between the bolster and the abacus.

<sup>15</sup> Bozza 2020, fig. 177. See Rumscheid 1994, I, 100, note 203, for a list of monuments with this type of balteus.

<sup>16</sup> Bozza 2020, 241, note 585, figs. 178, 179, e. The *comparandum* is the capital of the second storey, dated between the 2<sup>nd</sup> and 1<sup>st</sup> cent. BC.

<sup>17</sup> Bozza 2020, fig. 178. On this building (2<sup>nd</sup> cent. BC?) see Müller 2016, 98-105, pl. 9, 23-24.

<sup>18</sup> On the Gymnasium and its Doric colonnade, see Ismaelli 2016.

<sup>19</sup> On the façade, see Bozza 2020, 244-246, with previous bibliography.

<sup>20</sup> On the inscription, cf. D'Andria 2022, 20-23 and Filippini 2022, 795-811.

<sup>21</sup> Alzinger 1974, 56-57, 74-76, figs. 80, a-b; 84, a-b. For the peculiar Ionic kyma with a membrane between tongue-shaped leaves and shells, cf. the cornices of the attic of the *Südtor* of Tetragonos Agora (4/3 BC) in Ephesus. On this membrane (*Verbindungshäutchen*), Rumscheid 1994, I, 255; II, pl. 38, 2.

<sup>22</sup> Ismaelli 2009, 1-118.

<sup>23</sup> Ismaelli 2017.

is still unknown)<sup>24</sup> and Temple B, the major temple dedicated to Apollo Archegetes, located in the centre of the sanctuary (Fig. 16, a).

The area occupied by Temple B, approximately 13.40 x 25.50 m, has been identified thanks to recent excavations that brought to light the remains of the foundations. Temple B had a peripteral plan of 6 x 11 columns 8.60 m high<sup>25</sup>. The peristasis elevation comprised Attic bases; fluted shafts (reeded in the lower third) with smooth tabulae, sometimes with engraved dedication<sup>26</sup>; Ionic capitals; three-fasciae architraves; friezes decorated by a double-stem acanthus scroll; cornices with dentils (Fig. 4).



Fig. 4. Virtual reconstruction of Temple B (M. Limoncelli)

The capitals and the entablature of the Temple show a remarkable variety in the decorative motifs, both from an iconographic and stylistic point of view, demonstrating the long duration of the building site, which began under Augustus and continued until the Flavian or the Trajanic period. In brief, the capitals on the front face have an echinus of five triangular, pointed eggs (in some cases, three eggs and two half-eggs), alternating with thin tongue-shaped intermediate leaves or with darts. The abacus is decorated by a Lesbian kyma<sup>27</sup>. On the bolster the capital presents different combinations of decorative motifs (palmettes, horizontal or vertical acanthus leaves, sometimes alternating with smooth leaves). The balteus also shows a great variety of decorations (Fig. 5).

Regarding the architectural project, it appears conservative in the choice of the peripteral plan and the Ionic order but updated through iconographic schemes

<sup>24</sup> Bozza 2020, 4-26.

<sup>25</sup> Sacchi – Bonzano 2012; Bozza 2020, 249-262, figs. 185-187.

<sup>26</sup> On the practice of honouring donors on the tabulae of the columns see Sacchi – Bonzano 2012, 344-348.

<sup>27</sup> Front face of the capital: type C, subtypes 1a and 2a according to the classification of Bingöl 1980, 26-29, 31-32.

inspired by late Augustan monuments of Rome, as the sima decorated by vertical acanthus leaves<sup>28</sup> (Temple of Concordia), and the frieze with double-stem acanthus scroll<sup>29</sup> (Fig. 6). Thus, the beginning of the works can be dated to the late Augustan age; the construction of the cella and at least part of the peristasis were completed under Tiberius, as shown by the dedications engraved on two fluted columns. The stylistic differences between the blocks confirm the long duration of the construction site. We can distinguish groups of older capitals, architraves, friezes and cornices, dating back to the Augustan and Julio-Claudian period (e.g. TCa4, TCa5, TCa14, HTS 188, see Figs. 5-6), and other blocks datable to the Flavian age on the basis of the mouldings and especially the acanthus leaves (e.g. TCa17, HTA 33). In the older blocks, the leaf is more naturalistic, and the leaflets and lobes have delicate surfaces, with almond-shaped or heart-shaped eyelets; in more recent blocks the leaf is more rigid, with deep and long drill grooves, interrupted by marble bridges; the lobes are markedly concave; the eyelets are triangular, narrow, and elongated<sup>30</sup>.

Moving on to the public monuments, the first Theatre of Hierapolis was built in the Augustan period; the general layout of its scaenae frons is suggested by some blocks that were reused in the reconstruction of the Theatre in the Severan age<sup>31</sup>. The logeion had a Doric façade (pillars with half-columns), while the scaenae frons was divided into niches and aediculae on two storeys (Ionic and Corinthian), all in marble. The preserved three-sided Ionic capital proves the original presence of single columns projecting from the back wall. The echinus is decorated by an egg-and-tongue motif (five pointed eggs); the angle half-palmette sprouts from a small smooth leaf carved in a frontal view<sup>32</sup>. The bolster is decorated with horizontal acanthus and elongated leaves, with a smooth balteus (Fig. 7). The entablature is made out of architrave-friezes with garlands and cornices with dentils. The details of decoration suggest a date in the Augustan age, thanks to comparisons with monuments of Aphrodisias<sup>33</sup>, Ephesus<sup>34</sup>, and Sagalassos<sup>35</sup>.

Further evidence of use of the Ionic order in the early-imperial monumentalisation of Hierapolis is the Central Agora, located to the west of the sanctuaries<sup>36</sup>. The Agora was a rectangular peristyle of 104 x 92 m, enclosed by marble porticos, probably all Ionic with a single aisle. The east stoa was in an elevated position at the top of a staircase. Attic bases, fluted shafts, Ionic capitals, smooth architrave-friezes and cornices with dentils are preserved. The decoration of the architectural

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<sup>28</sup> Bozza 2020, fig. 192.

<sup>29</sup> Bozza 2020, fig. 191. For a discussion on the western origin of the iconographic schemes, see Ismaelli 2017, 443-444. In particular regarding the double-stem acanthus scroll, it should be emphasised that it is a scheme only exceptionally attested in Asia Minor and, significantly, the examples are mostly from the region of Hierapolis. See some friezes in the sanctuary of Apollo Lairbenos in Çal (the sanctuary belonged to the territory controlled by Motella, but was closely connected with the city of Hierapolis, see Ritti et al. 2000); some friezes at Laodicea (I could notice two specimens reused in the north sector of the west portico of the sacred agora and another one near the east Byzantine city gate); a frieze from the first order of the scaenae frons in Patara (Piesker – Ganzert 2012, 231-236).

<sup>30</sup> Bozza 2020, 258-259. See also some architraves dating back to the first half of the 2<sup>nd</sup> cent. AD, reused in Temple A (Severan phase) and probably attributable to Temple B according to Ismaelli 2017, 264-271.

<sup>31</sup> Masino – Sobrà 2012, fig. 16; Ismaelli et al. 2016, 307-310.

<sup>32</sup> See above, note 12, for discussion on this peculiar scheme.

<sup>33</sup> Eggs and shells of Doric capitals of the pseudo-porticos of the Sebasteion (Otschar 1987, fig. 13; Ismaelli 2009, fig. 396).

<sup>34</sup> Ionic capitals of the stoa-basilica (Alzinger 1974, 77-79, fig. 86-104; Rumscheid 1994, II, pl. 40, 1).

<sup>35</sup> Architrave of south-west gate of the lower agora (Tiberian period according to Vandepuit 1997, 58-63, pl. 22.3).

<sup>36</sup> Ismaelli et al. 2017; Bozza 2020, 264-265, fig. 198.



elements suggests that the construction of the Central Agora was carried out between the Augustan and the Julio-Claudian period<sup>37</sup>.



Fig. 5. Some capitals of Temple B, dating back to the Augustan period (TCa14), Augustan/Claudian period (TCa4, TCa5), late Julio-Claudian period (TCa3) and Flavian period (TCa17)

<sup>37</sup> Ismaelli et al. 2017, 113, 124-126.



Fig. 6 Temple B: frieze blocks with double-stem acanthus scrolls (a-b), a sima fragment decorated by vertical acanthus leaves (c), geison front with anthemion (d)

### The Phase after the Earthquake of AD 60

During the late Julio-Claudian period, in AD 60, Hierapolis was hit yet again by an earthquake mentioned by ancient sources<sup>38</sup>. In the subsequent years and throughout the Flavian period, an extensive building program led to the reconstruction of the city, with the completion of old projects and the creation of new urban spaces. The major effort was the construction of the Frontinus Street<sup>39</sup>, flanked by Doric pseudo-porticos in travertine for the entire extension of the city. Even in the sanctuaries, the construction activities continued: in the Sanctuary of Apollo, Temple B was completed and the Corinthian portico that delimited the sacred area on the upper terrace was built<sup>40</sup>.

In the Ploutonion, a ritual theatron with a Π-shaped plan was built in travertine at the top of the above-mentioned Ionic façade, with an Ionic marble stoa in summa cavea<sup>41</sup>. Lastly, a Corinthian Tholos was built in marble in front of the sacred grotto (Fig. 16, c). The entablature of the Ionic stoa bears a partially preserved inscription, with the dedication by a Hierapolitan woman named Glykonis to the emperor Nero and the citation of the proconsul of Asia Q. Marcius Barea Soranus (in office between AD 61 and 63)<sup>42</sup>. The study of the in-situ structures and the architectural blocks allows us to determine that the portico had a total height of about 5.31 m and was arranged with an L-shaped plan at the top of the theatron (the east wing, about 33 m long, made of a single aisle and the south wing, 28 m long, with a double aisle). Moreover, the stoa had a central avant-corps (aligned with the sacred grotto) which is believed to be the naos of the sanctuary, hypothesis proven by the discovery of the cult statue of Pluto with Cerberus (Fig. 16, b-c). As for the

<sup>38</sup> On the earthquakes that affected Hierapolis, see Guidoboni et al. 1994, 188-190, 194-195 (earthquake of AD 60), 239, 254-255, 306, 349-351; Kumsar et al. 2015.

<sup>39</sup> Ismaelli 2009, 171-346.

<sup>40</sup> For the Corinthian portico, see Bozza 2020, 54-146.

<sup>41</sup> On the Ionic stoa, Bozza 2020, 147-237.

<sup>42</sup> Bozza 2020, 165-166, figs. 127, 165-169. Analysis of the inscription in Filippini 2022, 813-826.



architectural decoration of the stoa, it is quite simple, with smooth column shafts and mouldings. The capitals have an egg-and-tongue motif on the front face (three eggs + two half-eggs) and bolsters decorated with horizontal and vertical acanthus leaves of different shapes (Fig. 7).



Fig. 7. Ionic capitals from the Augustan to the Neronian period: Ploutonion, Ionic façade; Theatre, first storey of the scaenae frons; sporadic capital SCa54 (Augustan period); Ploutonion, Ionic portico (PCa2, PCa3)



## The 2<sup>nd</sup> Century AD

During the 2<sup>nd</sup> cent. AD, the Ionic order continued to represent a fundamental language of the public and sacred architecture of the city. A series of Ionic marble capitals belonging to an unknown building was found in the area of the Sanctuary of Apollo<sup>43</sup> (Fig. 8). These capitals (echinus with three eggs + two half-eggs with intermediate darts or tongue-shaped leaves) are characterised by an unusual composition that combines a hypotrachelion decorated with palmettes with a fluted bolster adorned by vegetal motifs. Another distinctive element is the bead-and-reel motif running along the border of the volute. This unique composition combines retrospective models and innovations of the imperial period. In particular, the fluted bolster and the decorated hypotrachelion evoke ancient models of Classical Greece (the Athenian Erechtheion) and Microasiatic tradition, such as the Artemisia of Ephesus and Sardis. The formal language of the capitals can be dated to the Hadrianic period; it is also important to remark the undercut canalis of the volute, with progressively projecting convolutions, a feature that seems to have spread in the mid-imperial age (see below).



Fig. 8. Ionic capitals datable between the end of 1<sup>st</sup> cent. AD and the first half of 2<sup>nd</sup> cent. AD: capital SCa34, reused on a column in the backstage of the Theatre (end of 1<sup>st</sup> cent. AD-first half of 2<sup>nd</sup> cent. AD); Sanctuary of Apollo, unknown building with capitals with decorated hypotrachelion (Hadrianic period); sporadic capital SCa25 (first half of 2<sup>nd</sup> cent. AD)

<sup>43</sup> Bozza 2017; Bozza 2020, 27-53.



Furthermore, a magnificent project was undertaken in the Hadrianic period (and continued in the Antonine age) in the northern sector of the city. A new Agora was built, with the North Theatre and the so-called Bath-Church. This ambitious building program aimed at reduplicating the main social gathering places of the city centre: the North Agora was a square surrounded by marble porticos (125 x 250 m), with a huge Stoa-basilica on the east side; the central area was also used for gladiator games. The construction of this big complex lasted several decades and involved various workshops, some of them more traditional for their formal language derived from the Flavio-Trajanic period, others closer to the style of the Antonine-Severan period<sup>44</sup>.



Fig. 9. Ionic capitals of North Agora: porticos of the square (ANCa1, H13\_142); lateral stoai of the Stoa-basilica (SBca1, SBca4)

<sup>44</sup> Rossignani – Sacchi 2007.

The porticos of the square<sup>45</sup> (north, south, and west sides) were double-aisled, with Ionic façade and Corinthian inner colonnade. The decoration was essentially concentrated in the scroll friezes and the Ionic capitals (echinus with three eggs + two half-eggs alternating with darts or tongue-shaped elements; abacus decorated by an Ionic kyma; bolsters with acanthus leaves or scrolls): the analysis of these motifs indicates a date in the first half of the 2<sup>nd</sup> cent. AD. (Fig. 9).

The Stoa-basilica<sup>46</sup> was 280 m long, 20 m wide, with a façade 19-20 m high, raised on a 5 m high staircase (Fig. 18). The façade was divided into a Corinthian central body and Ionic lateral stoai in white marble. The central body was composed of a big arch flanked by two tetrapyla, with a rich decoration (Corinthian capitals, figured capitals with sphinxes and with bull-biting lions). The lateral stoai were made up of pillars with double half-columns, which supported entablature blocks decorated by garlands, marble arches, an attic and a second storey decorated with coloured marbles. The capitals of the Ionic pillars (echinus with three eggs + two half-eggs alternating with darts or tongue-shaped elements)<sup>47</sup> represent the most significant element for their rich ornamentation: the bolster is occupied by acanthus scrolls and a *Blattmaske* on the central axis, a unique composition in the imperial architecture (Fig. 9).

This spectacular building undoubtedly represented the most ambitious construction site of Hierapolis in the 2<sup>nd</sup> century: here the Ionic order is part of a highly experimental project, as demonstrated by the originality of plan and elevation (e.g. the central propylon in the form of a triumphal arch, the dramatic figured capitals, the combination of architectural orders).

## **2. The Evolution of the Ionic Order in Hierapolis: Architectural Design and Iconographic Schemes**

The analytical study of the contexts briefly presented above allows us to trace the evolution of Ionic architecture in Hierapolis of Phrygia over the centuries. Regarding the elevation, we can state that, in the Ionic monuments of Hierapolis, Attic bases were always used; shafts of different types are attested in various contexts throughout the imperial period (entirely fluted; smooth in the lower third and fluted above; reeded in the lower third and fluted above; completely smooth); from the iconographic point of view, capitals are the most variable element of the colonnade, as explained below.

On the front face, the echinus with five eggs is the traditional, “old-fashioned” solution, preferred during the Hellenism and the Augustan and Julio-Claudian periods. In contrast, the most long-lived solution is the echinus with three eggs and two lateral half-eggs, used at least since the Julio-Claudian phase, which became canonical throughout the imperial age (Fig. 7). A third solution, with only three eggs, is attested in the mid-imperial period, with the earliest examples dating back to the end of the 1<sup>st</sup> cent. AD: these capitals are often the outcome of mass production, probably intended for domestic architecture. The ultimate result of this process of reduction of the egg number is recognisable in two capitals, both dating back to the mid-imperial age, which have just one central egg and two lateral half-eggs<sup>48</sup> (Fig. 10). The only exception in this chronological framework is the echinus with three eggs of the capitals of the Augustan façade in the Ploutonion, perhaps a simplification due to the use of travertine and the small dimensions. The different

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<sup>45</sup> Bozza 2020, 265-274.

<sup>46</sup> Bozza 2020, 274-284.

<sup>47</sup> One exception is the capital no. SBCa12, whose echinus has only three eggs. Bozza 2020, 278, fig. 208.

<sup>48</sup> Capitals nos. SCa9 and SCa59, see Bozza 2020, 312-313, 321, figs. 225-226.



combinations of egg-and-dart and egg-and-tongue both appear to have a long duration, spanning the entire imperial age (Figs. 7-10).

The progressive decrease of the egg number in the echinus should be considered in light of a general phenomenon of change in the proportions of the Ionic capital front face. Indeed, in the early imperial age, the height of the capital is distributed among the echinus, which is low, long and with a greater number of eggs, the horizontal canal of the volute and the abacus. During the 1<sup>st</sup> cent. AD, perhaps due to an increasing preference for thick, three-dimensional Ionic kyma, the echinus becomes higher (consequently with bigger eggs but reduced in number), while the horizontal canal of the volute becomes lower and roughly worked, because of its poor visibility above the echinus. This evolution, in the mid-imperial age, results in capitals with a big echinus which occupies the entire front face up to the abacus, a feature that is mostly typical in the mass-produced examples, roughly and quickly executed (Fig. 10).

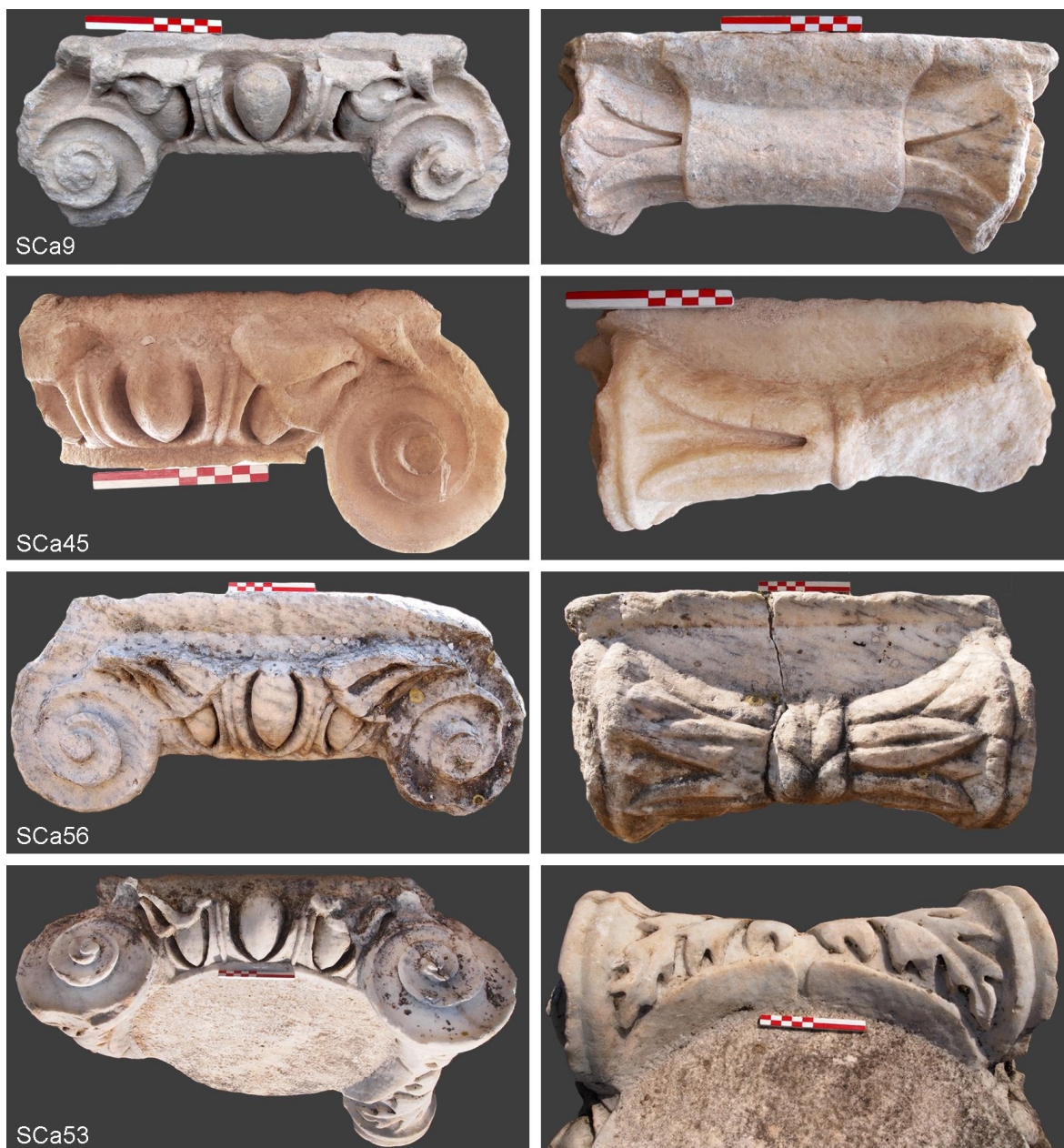


Fig. 10. Ionic sporadic capitals dating back to the mid-imperial period: SCa9, SCa45, SCa53, SCa56

Regarding the angle half-palmettes between echinus and volute<sup>49</sup>, a certain variability is noticeable in the element supporting the half-palmettes, which is commonly a vegetal calyx of various shapes<sup>50</sup> (e.g. two smooth leaflets or two polylobed leaflets), occasionally replaced by a single leaf seen from the front (see above, Fig. 3).

As for the volute, it is possible to trace an evolution in the carving of the canalis (Figs. 11-12). The traditional form, the only one used between Hellenism and the Julio-Claudian period, is the volute arranged on a vertical plane; in the cross-section view, the canalis is semi-circular and concave (type 1). At least since the Neronian age (Ploutonion portico), the inner border of the canalis presents a profile that is no longer curved but straight, perhaps because of a more rough and fast carving of the volute (type 2). In the Flavian age, instead, the canalis begins to show a peculiar undercut profile, that is, a very deep carving even below the inner border of the canalis itself (type 3). In this case, the shape of the canalis is clearly due to a changed aim of the craftsmen who, rather than saving time in the carving process, intended to obtain a more dramatic and three-dimensional effect. Lastly, the ultimate evolution of this technique can be recognised in some capitals whose volutes have convolutions arranged on increasingly projecting planes, with an undercut canalis, markedly concave (type 4).

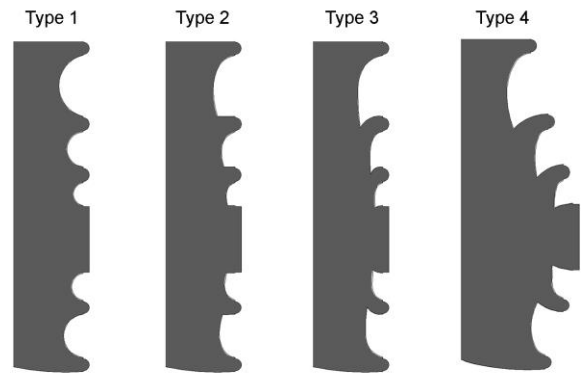


Fig. 11. Cross-section drawing of the four volute types of the Ionic capital

This execution is attested since the Hadrianic period (capitals with decorated hypotrachelion of the Sanctuary of Apollo and capitals of North Agora) and seems to become a widespread solution in the mid-imperial age.



Fig. 12. The evolution of the volute canalis: type 1 (Temple B, TCa3); type 2 (Ionic stoa of the Ploutonion, PCA5); type 3 (left: Temple B, TCa17; right: sporadic capital SCA40, datable between the end of 1<sup>st</sup> cent. AD and the first half of 2<sup>nd</sup> cent. AD); type 4 (capitals with decorated hypotrachelion of the Sanctuary of Apollo, Ca3)

<sup>49</sup> The shape of the half-palmette depends on the quality of workmanship rather than on a diachronic evolution. In the most important and valuable buildings (e.g. Temple B), the leaves are more numerous, finely carved and their surface often shows delicate incisions or flat-chiselled strips. See Bozza 2020, 327.

<sup>50</sup> Bozza 2020, 327.

Moving on to analyse the lateral face of the Ionic capitals of Hierapolis, almost all of them have a balteus. The most common decorative pattern on the balteus, appreciated in the Augustan and Julio-Claudian age, but also attested later, is that with overlapping laurel leaves, pointed both upwards and downwards (e.g. TCa3 and TCa5 in Fig. 5, and SCa54 in Fig. 7). Other patterns extensively used throughout the imperial age are the smooth undulating scroll (*Wellenranke*)<sup>51</sup> (e.g. PCa2 in Fig. 7) and the vertical rows of horizontal leaves<sup>52</sup>. Moreover, we should mention the vertical leaf positioned in the centre of the bolster which, during the imperial age, appears to be very popular as a substitute for the balteus, using both the canonical acanthus and the type with only lobes<sup>53</sup> (e.g. TCa4 in Fig. 5; SCa34 and SCa25 in Fig. 8; ANCa1 and H13\_142 in Fig. 9).

A wide variety of schemes also characterises the decoration on the bolster surface, generally consisting of vegetal elements, with the exception of the Hadrianic capitals from the Sanctuary of Apollo that have fluted bolsters (Fig. 8). The vegetal compositions documented so far are 1) horizontal acanthus leaves with elongated leaves in the background; 2) a horizontal acanthus leaf flanked by elongated leaves; 3) horizontal acanthus leaves; 4) horizontal acanthus leaves with other acanthus leaves in the background; 5) horizontal elongated leaves; 6) a vertical acanthus leaf (upwards or downwards); 7) horizontal overlapping laurel leaves; 8) acanthus scrolls, usually arising from an acanthus leaf or tuft in the centre of the bolster; 9) horizontal palmettes (Figs. 5, 7-10). Among the listed compositions, the most widespread in a diachronic sense are those with horizontal acanthus and elongated leaves (nos. 1, 2), attested throughout the imperial era; also schemes 3, 4, and 6 with only (horizontal or vertical) acanthus leaves are widely used, especially in the 1<sup>st</sup> cent. AD. Scheme 8, on the other hand, although it is already used in Temple B, seems more appreciated in the mid-imperial age, because of the popularity that acanthus scrolls acquired in the baroque architecture of that period. In parallel, the horizontal elongated leaves pattern (no. 5), which conversely is not attested in the early imperial age, is used in many sporadic mid-imperial capitals, mostly of small size and modest quality: in this case we can hypothesise that the choice of a simple decoration with only smooth leaves is due to a quick mass production of capitals, destined for residential architecture.

In the entablature of Ionic monuments of Hierapolis, the architraves commonly have two or three bands, crowned by a fillet/astragal, an ovolo, a cavetto and another fillet. As for the frieze, it is usually undecorated, with two exceptions: the garland motif<sup>54</sup> and acanthus scrolls<sup>55</sup>. The cornices generally have dentils; the sima has always the profile of a kyma recta, often with lion's head waterspouts. The cornice mouldings show a wide variability in their profile, but are generally smooth, especially in the early imperial age, with the exception of the cornices of Temple B (rosettes in the geison soffit, palmettes on the geison front and vertical acanthus leaves on the sima) (Fig. 6, c-d).

### 3. The Formal Language

The analysis of iconographic schemes shows that the Ionic architecture of Hierapolis is essentially coherent with the architectural record of Asia Minor. However, regarding the decoration, an in-depth knowledge of the Ionic architecture of this region in the imperial age is not yet achieved. A fruitful line of investigation

<sup>51</sup> *Einfache Ranken* according to Bingöl 1980, 67-68.

<sup>52</sup> *Aufeinanderliegende horizontale Blätter* according to Bingöl 1980, 66-67.

<sup>53</sup> *Akanthusblätter* in Bingöl 1980, 70. For a complete list of all the balteus patterns attested in Hierapolis (and all types of balteus borders), see Bozza 2020, 329-330.

<sup>54</sup> Augustan scaenae frons and Ionic stoai of the Stoa-basilica.

<sup>55</sup> Temple B and stoai of North Agora.

has tackled the period from the Archaic to the Hellenistic age, focusing on the great temples of the Ionic tradition<sup>56</sup>, the phase of redefinition of the Ionic order by Hermogenes and its canonisation with Vitruvius<sup>57</sup>. For the imperial age, the published studies mostly presented limited groups of materials or specific contexts<sup>58</sup>, sometimes lacking a detailed analysis of the architectural decoration. The only attempt at a general synthesis is the work by Bingöl (1980) which still represents a fundamental reference thanks to its vast corpus of capitals, but appears outdated due to its strictly typological approach.

Furthermore, there are numerous Ionic monuments which, although completely or partially excavated and well known in their general configuration, remain unpublished as for the decorative details. Despite the general increase of research activities and publications on architecture<sup>59</sup>, in the Maeander region the lack of monographic studies on the most important Ionic buildings limits a general assessment of this *Kunstlandschaft*, where every city, including Hierapolis itself, contributed to defining the language of Ionic architecture. Indeed, multiple connections between the *Baudekoration* of Hierapolis and that of the closest cities indubitably existed but remain elusive. Plenty of new data could derive from the detailed publication of the monuments of Aphrodisias, where in the early imperial age the Ionic order was used in the north agora, south agora, the temple of Aphrodite, the first storey of the pseudo-porticos and the propylon of the Sebasteion, the civil basilica<sup>60</sup>. In nearby Laodicea the so-called sacred agora is also enclosed by Ionic porticos: a thorough analysis will be essential to evaluate the parallel Hierapolitan formal language. The same is true for the agora of Nysa, as well as for the new monuments that are progressively coming to light in Tripolis on the Maeander<sup>61</sup>. These buildings, despite their complexity, often determined by the succession of renovations and different building phases, offer a huge potential for the analysis of their decoration and, therefore, for the reconstruction of the artistic experience of local marble workshops, but also in order to understand the relationship between decoration, construction process and architectural design of the monument.

### **The Role of Workshops**

Thanks to the numerous studies that in recent years have focused on the architecture of Hierapolis and its decoration<sup>62</sup>, we are increasingly improving our knowledge of the development and features of local artistic workshops. The systematic comparison with other Microasiatic contexts allows us to identify the affinities as proof of a shared artistic heritage based on the Hellenistic models, and also define the specific features of the Hierapolitan language. Its development was undoubtedly favoured by the abundant availability of building stone and its

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<sup>56</sup> On the Artemision of Ephesus, see Bammer 1972; Muss – Bammer 2001; Ohnesorg 2007; Artemision of Sardis: Butler 1925; Yegül 2020; Didymaion: Knackfuss 1941; Gruben 1963; Athenaion of Priene: Hennemeyer 2013; Koenigs 2015; temple of Leto in the Letoon: Hansen – Le Roy 2012.

<sup>57</sup> E.g. Hoepfner 1968; Gros 1978; Hoepfner – Schwandner 1990; Frey 1992; Bingöl 1993; Frey 1994; Bingöl 1996.

<sup>58</sup> E.g. the *ionische Halle* of Miletus, von Gerkan – Krischen 1928, 36-49; Köster 2004, 42-49; the portico of Tiberius of Aphrodisias, Waelkens 1987; de Chaisemartin 1989; de Chaisemartin – Lemaire 1996; Berns 2017; group of Ionic capitals from the agora of Smyrna, Cavalier 2012.

<sup>59</sup> See the studies on the architectural decoration of specific urban contexts: Vandeput 1997 (Sagalassos); Köster 2004 (Miletus); Cavalier 2005 (Xanthos); Mert 2008 (Stratonicea); Gliwitzky 2010 (Side and Perge).

<sup>60</sup> The basilica is already published in detail (Stinson 2016), although this study is more concerned with the reconstruction of the architectural layout than the analysis of the architectural decoration. In the theatre the first order is Ionic as well, see de Chaisemartin – Theodorescu 2017.

<sup>61</sup> On these monuments, see below, notes 115, 118-119.

<sup>62</sup> See above, note 3.



evolution unfolded without interruption throughout the imperial age, thanks to the building sites that offered continuous employment to local stonemasons<sup>63</sup>. The attribution of the public monuments of Asia Minor to a few large itinerant workshops, exclusive holders of decorative models, is now considered outdated<sup>64</sup>: the most up-to-date perspective, although recognising the key role of the most prestigious cities such as Ephesus, Pergamon and Aphrodisias, is more concerned with the peculiarities of local traditions<sup>65</sup>. The definition of these local languages, as well as the question of the actual circulation on a regional scale of architects and craftsmen – therefore projects, models and decorative traditions –, must be addressed through a contextual approach that takes into account various factors<sup>66</sup>: the ideological intent of building patrons, the possible reasons for adaptation of imported forms, the professional role of architects, the “composite and dynamic character”<sup>67</sup> of the marble workshops involved in the construction sites, the role of craftsmen in the selection of iconographic schemes and decorative details. The informative potential of this methodology is limited in Hierapolis by the scarcity of contextual data concerning the main Ionic monuments, which were extensively demolished in the Byzantine period, often hindering the precise recomposition of block sequences and, therefore, the comprehension of decoration in relation to its position in the monument (as reconstructed for the Corinthian Temple A in the Sanctuary of Apollo<sup>68</sup>).

### **The Ionic Capitals**

In the discussion on the formal language of Hierapolitan Ionic architecture, a specific focus should be dedicated to the capitals, which were most likely made by specialised craftsmen. Indeed, a particular know-how was necessary due to the complex configuration of the capitals, different for each architectural order.

In broad terms, Bingöl’s definition of the evolution of the Ionic capital in Asia Minor is confirmed in Hierapolis<sup>69</sup>. Although many dates that he proposed are no longer valid, his work usefully outlined the Ionic capital evolution over the centuries, identifying the schemes distinctive of the Archaic and Classical ages, those of the Hellenistic period and the typical solutions of the imperial period. Bingöl noticed a phenomenon of progressive simplification of the capital front face during the imperial era: he highlighted that the combination of five-eggs echinus<sup>70</sup> or three-eggs echinus with a “borderless” volute<sup>71</sup> and an undecorated abacus is not attested before the imperial age<sup>72</sup>. In parallel, the decoration of the bolster gradually increased and, in the mid-imperial period, the vertical acanthus leaf and the pseudo-balteus often substituted for the canonical balteus, making more space for

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<sup>63</sup> Bozza 2020, 335-340. On the stone quarries, the building sites and the workshops of Hierapolis, see Ismaelli – Scardozi 2016.

<sup>64</sup> See for example Heilmeyer 1970; Barresi 2003; Pensabene 2006. A historiographic summary of the question is in Ismaelli 2017, 424-425, notes 52-54.

<sup>65</sup> Cf. the observations on local marble workshops in Mert 2008, 69-85 (Stratonicea); Köster 2004, 163-168 (Miletus); Vandeput 1997, 183-188 (Sagalassos).

<sup>66</sup> Cf. the methodological approach of Plattner 2004; Plattner 2009; Plattner 2014; for Hierapolis see also Ismaelli 2017, 314-315; Campagna 2018, 404.

<sup>67</sup> Ismaelli 2017, 424-425.

<sup>68</sup> Ismaelli 2017.

<sup>69</sup> Bingöl 1980, 19-23, 43-48, 75-77, 118-131.

<sup>70</sup> The five-eggs echinus of the Hellenistic and early imperial period derives from Classical models in which the echinus was sculpted in the round, even below the bolster. This type is defined as *durchlaufender Echinus* by Bingöl 1980, 20, who argues that it disappeared at the beginning of the 2<sup>nd</sup> cent. BC. See also Rumscheid 1994, I, 305, who disagrees with Bingöl’s chronology.

<sup>71</sup> *Ungesäumte Volute* (e.g. see Bingöl 1980, 37-38).

<sup>72</sup> The only exception is represented by the capitals with three-eggs echinus of the Artemision of Sardinia, cf. Bingöl 1980, 36.



elaborate vegetal motifs. According to Bingöl, this evolution is related to the changed context of the Ionic capitals, which were previously part of temples, while in the imperial age were mainly used in porticos and colonnaded streets, where the homogeneity of the front face contrasted with the decorative richness of bolsters, visible from the internal space of the buildings (Figs. 7-10).

In Hierapolis, between the Hellenistic and the Augustan/Julio-Claudian period, the most common Ionic capital has an echinus with five triangular eggs (or three + two half-eggs). The attested decorative motifs such as bead-and-reel, Ionic kyma and Lesbian kyma present a canonical morphology, shared by contemporary monuments of Hierapolis and other Microasiatic cities. Nevertheless, some particular details deserve to be discussed.

A noteworthy feature, attested in the capitals of Temple B, is the exquisite openwork of the Ionic kyma of the echinus, obtained by removing the marble behind the darts/tongue-shaped leaves, and sometimes also behind the angle half-palmettes<sup>73</sup> (Fig. 5). This technique aimed at obtaining an elegant visual effect thanks to the light seeping in through the narrow gaps in the marble and was widespread in Asia Minor, as shown by *comparanda* in other cities than Hierapolis (Fig. 13). It can be found in numerous early imperial contexts, such as the stoa-basilica of Ephesus<sup>74</sup>, the “sacred agora” of Laodicea<sup>75</sup>, the south agora<sup>76</sup> (north and west sides) and civil basilica<sup>77</sup> of Aphrodisias; there are also mid-imperial examples, such as the capitals of the so-called *Festplatzhallen* of the Asklepieion in Pergamon<sup>78</sup>.



Fig. 13. Capitals with openwork echinus: Laodicea, south side of the sacred agora (a); Ephesus, stoa-basilica (b); Aphrodisias, south agora (c) and civil basilica, east colonnade of the Long Hall (d, after Stinson 2016)

As for the lateral face of the Ionic capital, in the Augustan and Julio-Claudian period the bolster presents various decorative combinations (e.g. the bolsters of Temple B, Fig. 5). In general, we notice an adherence to the Hellenistic models

<sup>73</sup> An identical openwork is also attested in the echinus of the Ionic capital attributed to the so-called “Beautiful Tomb” (Tomba Bella) in the North Necropolis (see Bozza 2020, 262-263, fig. 197). This correspondence confirms that the same stonemasons were often involved in both public and private construction sites (cf. Bozza 2020, 338-339).

<sup>74</sup> Alzinger 1974, 26-37; esp. fig. 86 for the openwork technique in the echinus (however not carved as deeply as that documented in Hierapolis).

<sup>75</sup> On the sacred agora, see Şimşek 2013, 22-25; Şimşek 2017a, 131-135; Şimşek 2017b, 366-373.

<sup>76</sup> Waelkens 1987, 123-126, pl. II, 1, 4.

<sup>77</sup> Stinson 2016, pls. 50, 1 (capital of east colonnade of the Long Hall); 33 (capitals of the Vestibule).

<sup>78</sup> Rohmann 1998, pls. 38-40.

canonised by Hermogenes (bolster with horizontal leaves<sup>79</sup>), but since the Augustan period these are enriched with numerous other vegetal motifs, such as the vertical acanthus leaf, acanthus scrolls, palmettes, etc. Only two sporadic Augustan capitals stand out for their smooth bolster with a balteus decorated by overlapping laurel leaves, possibly derived from even more ancient models of Classical Caria<sup>80</sup> (see SCa54 in Fig. 7).

Some remarks should also be presented on the transitional period between the 2<sup>nd</sup> half of the 1<sup>st</sup> cent. and the beginning of the 2<sup>nd</sup> cent. AD, mainly based on the Ploutonion portico and a few sporadic capitals. The typical features of this phase are 1) the preference for the echinus with three eggs and two half-eggs, with more slender proportions than the older ones, 2) the very low horizontal canalis of the volute, 3) the prevalence of bolsters decorated with horizontal and vertical acanthus leaves (albeit other older schemes are also attested) (Fig. 7).

Regarding the mid-imperial capitals, the model with a very low horizontal canalis and the echinus with three eggs and two half-eggs is the most used. The eggs present a quite elongated shape and a curved top and are frequently separated from the egg-shells by deep grooves. On the lateral face, the previously attested patterns continue, although with a larger diffusion of acanthus scrolls and a great variety and richness in the vegetal elements (as shown by the *Blattmaske* capitals of the Stoa-basilica, Fig. 9). This emphatic effect and the overabundant decoration can be found also in contemporary contexts where even the *Polsterstirn* is occupied by acanthus motifs, such as the above-mentioned porticos of the Asklepieion in Pergamon<sup>81</sup>, the theatre external façade in Patara<sup>82</sup> and some Ionic capitals from the agora of Smyrna<sup>83</sup>.

A peculiarity recognised in the capitals of an unknown Hierapolitan building from the 1<sup>st</sup> half of the 2<sup>nd</sup> cent. AD<sup>84</sup> is the shape of the shells in the echinus, with a sort of pointed peduncle that is not documented in other buildings in the city, but is widely attested in Aphrodisias (Fig. 14). Indeed, this element seems to be a purely local, long-lasting iconographic detail, as it is found in the capitals of the temple of Aphrodite<sup>85</sup>, south agora<sup>86</sup>, civil basilica<sup>87</sup>, and perhaps also the Agora Gate<sup>88</sup>. Its great diffusion in Aphrodisias and at the same time the absolute exceptionality in Hierapolis could suggest that this type of shell is a proof of the intervention of Aphrodisian stonemasons in the Phrygian city. Nevertheless, its presence elsewhere, at least in one capital of the stoa-basilica of Ephesus<sup>89</sup>, recommends a certain caution, as the discovery of further examples could also reveal that it is a widespread detail in other centres besides the Carian one.

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<sup>79</sup> Rumscheid 1994, I, 305; Bingöl 2008.

<sup>80</sup> According to Pedersen (2013; 2015), this scheme was invented in Classical Caria, perhaps by Pytheos himself for the Mausoleum of Halicarnassus. The author also deals with the issue of the primacy of the so-called Ionian Renaissance in the development of Ionic architecture in the Classical age and with the problem of relative chronology between the monuments of Caria and Lycia and the role of Attica in the elaboration of the new schemes. See also Rumscheid 1994, I, 95, note 186, in favour of the Carian primacy. Bingöl 1980, 54-55, instead attributes the invention of the smooth bolster with overlapping-leaves balteus to the architect of the Nereid Monument of Xanthos, although in a hybrid form as it is influenced by Attic models. The two sporadic capitals from Hierapolis are SCa54 and SCa58, see Bozza 2020, 291-293, fig. 217.

<sup>81</sup> Rohmann 1998, pls. 38-41.

<sup>82</sup> Piesker – Ganzert 2012, fig. 107, pl. 17.

<sup>83</sup> Cavalier 2012, figs. 15, 17.

<sup>84</sup> The existence of this building is revealed by three sporadic capitals with homogeneous dimensions and decoration (nos. SCa25, SCa47, SCa50), see Bozza 2020, 308-309.

<sup>85</sup> Theodorescu 1990, 63, figs. 5, 7 (type O3).

<sup>86</sup> Waelkens 1987, pl. II, 4.

<sup>87</sup> Stinson 2016, pls. 33, a-b (Vestibule); 81-82 (South Hall).

<sup>88</sup> On the Agora Gate, de Chaisemartin – Lemaire 1996, 158; Linant de Bellefonds 2009.

<sup>89</sup> Alzinger 1974, 135, figs. 176-177.

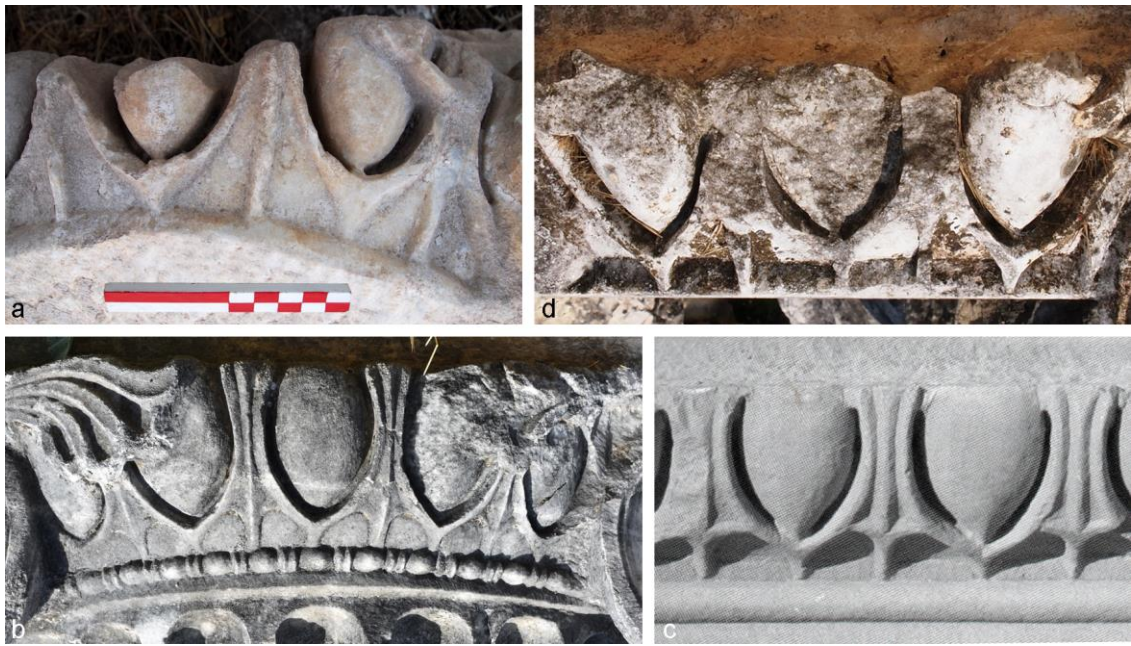


Fig. 14. Detail of the shells with peduncle in the echinus of sporadic capital SCa25 (a). Similar peduncles in the capitals of Aphrodisias: temple of Aphrodite (b, photo T. Ismaelli); civil basilica (c, after Stinson 2016); probably agora gate (d)

The work of foreign stonemasons is clearer in other Hierapolitan contexts, for example the involvement of Pamphylian craftsmen has been recognised in the construction site of the Severan (Corinthian) Temple A thanks to the presence of the Pamphylian bead-and-reel and close *comparanda* in the Severan decoration of Perge<sup>90</sup>. The same iconography is significantly attested, several decades earlier, in the porticos of North Agora (friezes) and in the Stoa-basilica (almost all the Ionic capitals)<sup>91</sup> (see SBCa4 in Fig. 9). Thus, it could be argued that the need for an exceptional workforce for the huge project of North Agora fostered the arrival of craftsmen from other centres since the Hadrianic-Antonine period.

It is also important to mention the Hadrianic capitals of the Sanctuary of Apollo (Fig. 8): they are unique for the combination of 1) patterns of ancient origin but still popular in the mid-imperial period, such as the hypotrachelion with an anthemion of palmettes; 2) retrospective schemes, such as the fluted bolster; 3) original elements, namely the bead-and-reel along the volute canalis. Only the identification of the original monument of the capitals will allow us to fully understand the symbolic meaning of these peculiar choices, surely aimed to ideally connect the building to the very roots of Ionic architecture.

Lastly, the numerous small capitals probably pertaining to domestic contexts are illustrative of the above-mentioned process of simplification of the capital front face and reduction of the egg number. These capitals have a three-eggs echinus, sometimes with a bigger central egg, usually alternating with tongue-shaped leaves;

<sup>90</sup> The Pamphylian bead-and-reel motif, typically used below the Ionic kyma, is characterised by a peculiar alternation of elements: a single reel is positioned below every dart/tongue-shaped leaf, while the canonical double reel is positioned below the egg. See Ismaelli 2017, 341-345, 421-425, 432-436, with a discussion of the possible role of the architect of Temple A as an intermediary between different artistic traditions. On the dynamics of transfer of decorative motifs from Pamphylia to the surrounding regions, see also Yurtsever 2021, 234.

<sup>91</sup> Bozza 2020, 271-272, note 750; 279; figs. 201-202, 208-210.



also, the membrane-type shells in the echinus are a typical feature of the capitals between the 2<sup>nd</sup> and 3<sup>rd</sup> cent. AD<sup>92</sup> (e.g. SCa9, SCa45 and SCa53 in Fig. 10).

### The Evolution of the Canalis of the Volute

The diachronic evolution of the volute canalis in the Ionic capitals deserves an in-depth analysis. As mentioned, starting from the traditional volute arranged on a vertical plane of the early imperial age (type 1), the morphology of the volute changes until it is progressively projecting, with an undercut, deep canalis (type 4)<sup>93</sup> (Figs. 11-12). It should be stressed that we can partially observe this evolution in Bingöl's work (1980), which presents the drawing of the volute for many capitals in the catalogue. However, the cross-section drawings show all the different types of canalis except type 4<sup>94</sup>.

Although there is no systematic study of this detail so far, the precise date proposed by recent research for the most significant capitals provides us with some reference points: it can be argued that this gradual transformation of the volute canalis occurred not only in Hierapolis, but also in other cities of Asia Minor, as demonstrated by some well-dated examples (Fig. 15).



Fig. 15. Type-3 and type-4 volutes: Pergamon, porticos of the Asklepieion (a, after Rohmann 1998); Aizanoi, Zeus temple (b, photo T. Ismaelli); Pergamon, Dionysus temple (c, after Bohn 1896); Patara, external façade of the theatre (d, after Piesker – Ganzert 2012); Sardis, Marble Court (e); Aizanoi, first storey of the scaenae frons (f, photo T. Ismaelli)

<sup>92</sup> Defined as *sgusci a membrana* in Ismaelli 2017, 360-362, figs. 505, 507 (variant OL1-A in Temple A and mid-imperial monuments of Hierapolis and other Microasiatic cities).

<sup>93</sup> See above for the definition of types 1-4. See also Bozza 2017, 441-442.

<sup>94</sup> Only two capitals, precisely from Hierapolis, show a slight protrusion of the volute, see Bingöl 1980, 197, capitals no. 146, 149.

In the south agora of Aphrodisias, the capitals of the Tiberian period<sup>95</sup> show a type-1 volute, while in the Flavian capitals of the civil basilica the canalis is much deeper, especially along the inner edge (type 2/3), as Stinson pointed out<sup>96</sup>. At the same time, in Zeus temple of Aizanoi, built in the late Flavian age, the Ionic capitals show type-3 volutes, with a very concave, undercut canalis, only slightly projecting<sup>97</sup>. Starting from the Hadrianic period, this type of volute appears to be increasingly widespread: in Pergamon this is proven by the capitals of the Asklepieion porticos, also of type 3, i.e. with an undercut canalis but without progressive projection, and by the well-known capital of Dionysus temple<sup>98</sup>. The latter represents a clear example of type-4 volute and, in addition, appears original for the exceptional number of convolutions (at least five), intended to create an emphatic decorative effect (also confirmed by the intricate acanthus scroll pattern on the bolster). Likewise, the Ionic capital of the external façade of the theatre of Patara (1<sup>st</sup> half of the 2<sup>nd</sup> cent. AD) shows a very pronounced protrusion of the volute<sup>99</sup>. Between the Hadrianic and Severan period, this three-dimensional and emphatic effect of the volute intensifies, as shown by the Ionic capitals of the scaenae frons of Aizanoi<sup>100</sup>, the Marble Court at Sardis<sup>101</sup> and the Severan temple of Cremna<sup>102</sup>. In these examples, the markedly protruding convolutions of the volute are less numerous and are carved almost in the round, while the canalis is very concave.

To summarise, the older vertical configuration of the volute should not be considered as a dating element, because it was used since the Hellenistic period but we cannot exclude that it continued later. On the contrary, the undercut and progressively protruding canalis, especially when combined with other diagnostic details, may be used as an indicative element for the chronology of the capitals.

#### **4. The Ionic Order in the Urban Development of Hierapolis: Architectural Models, Building Functions and Symbolic Meanings**

In conclusion, in this brief presentation of the Ionic architecture of Hierapolis, we should present some remarks on the monumental contexts, the architectural models and their symbolic values. First of all, the Ionic order played a fundamental role in defining the sacred spaces of the city. In the Ploutonion, after the Hellenistic “proto-naos” built above the sacred grotto, in the Augustan period the façade with Ionic half-columns completed the transformation of the Phrygian worship place<sup>103</sup> into a fully Greek architectural form<sup>104</sup>. Significantly, in the Neronian period a stoa

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<sup>95</sup> I.e. those of the north portico and the north part of the west portico, see Waelkens 1987, 125-126. For other examples of type-1 volutes from the Augustan and Julio-Claudian period, see the capitals of the temple of Aphrodite in Aphrodisias (Rumscheid 1994, II, pls. 8, 6-7; 9, 2), the *Westtor* of the agora and the *Marktbasilika* in Ephesus (Alzinger 1974, figs. 73-77; 86-102), the temple of imperial cult in Stratonicea (Mert 2008, figs. 146a, 147).

<sup>96</sup> Stinson 2016, 28, pl. 33, d.

<sup>97</sup> On the temple, see Naumann 1979; for its date in late Flavian period, Posamentir – Wörrle 2006; Jes et al. 2010. For the capitals, see Yilmaz et al. 2013, 159-162, fig. 2.

<sup>98</sup> On the temple, Posamentir 2017. For the capital, see Bohn 1896, pl. XXXVII.

<sup>99</sup> Piesker – Ganzert 2012, fig. 107, pl. 17, f.

<sup>100</sup> Rohn 2001, figs. 7-8; Rohn 2010, figs. 7, 9; Yilmaz et al. 2013, fig. 5.

<sup>101</sup> Yegül 1986, 45-66, 134-146.

<sup>102</sup> Mitchell 1995, 118-123.

<sup>103</sup> The Hellenistic and Augustan buildings of the Ploutonion of Hierapolis were constructed over the earlier Phrygian rock-cut altars, hypothetically connected to the cult of Cybele, see D’Andria 2017; D’Andria 2018, 102-103, fig. 9; Panarelli 2022, 352, figs. 13, 18-19.

<sup>104</sup> The type of the façade with half-columns is widely attested during the Hellenism, see Lauter 1999, 232-235; Ismaelli 2009, 422-423. See also Bozza 2020, 356, note 1102, fig. 245, for the comparison of the Ploutonion façade with the western façade of the lower sanctuary at Kamiros.

was built with a central naos<sup>105</sup> that represented the main focus in the renewed scenography of the sacred area: the Ionic order was used once again, in order to highlight the close symbolic connection between this building and the older underlying façade (Fig. 16, b).

At the same time in the Sanctuary of Apollo, the project of Temple B was the bearer of a strong sense of local identity since it was inspired by the sacred landscapes of the Microasiatic poleis: the Ionic order was chosen as the best symbol of the religiosity of Asia Minor, therefore appropriate for the poliadic temple of Hierapolis (Fig. 4). The peripteral configuration of 6 x 11 columns appears fully consistent with the Classical and Hellenistic Ionic tradition, as exemplified by the temples of Athena in Priene, of Leto in the Letoon and of Dionysus in Teos<sup>106</sup>. We should also mention, albeit the different layout of the colonnades, the temple of Aphrodite in Aphrodisias (8 x 13 columns)<sup>107</sup> and the imperial cult temple of Stratonicea (6 x 9 columns)<sup>108</sup>, chronologically closer to Temple B. On the other hand, the architect who designed the Hierapolitan temple was certainly acquainted with the decorative innovations introduced in Rome and was able to combine them with the local models.

Regarding the meaning of architectural orders, especially in the sanctuaries of Hierapolis, we can clearly recognise a complex visual, functional and symbolic hierarchy<sup>109</sup> that guided the architects in the design of the sacred areas during in the Augustan and Julio-Claudian period. In the Sanctuary of Apollo, a symbolic dialogue was intentionally established between the experimental character of the oracular pseudo-monopteros, which was Corinthian, and the (Ionic) poliadic temple conformed to the Microasiatic tradition. The porticos, on the other hand, were arranged according to a progressive hierarchy, starting from the stoa on the lower terrace, which was Doric but with Ionic features, and culminating in the Corinthian Upper Portico, which stood behind the temples as a spectacular backdrop, built in the Flavian age but certainly foreseen by the original project (Fig. 16, a). Similarly, in the Ploutonion a precise hierarchy of architectural orders informed the action of architects. With different functions and relevance, the Doric order (north portico) and Corinthian order (Tholos) were used alongside the Ionic one; in this symbolic gradation, the Ionic order served to give a monumental aspect to the natural access to the Underworld (façade) and a magnificent “crowning” to the sanctuary (stoa in summa cavea) (Fig. 16, c).

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<sup>105</sup> For an analysis of the architectural layout of the Neronian portico and some *comparanda* especially for its configuration as porticus in summa cavea, see Bozza 2020, 191-195.

<sup>106</sup> Koenigs 2015 (Priene); Hansen – Le Roy 2012 (Letoon); Uz 2013; Kadioğlu 2021; Ismaelli – Bozza 2021 (Teos).

<sup>107</sup> In this temple the peristasis was later added to the cella; Theodorescu 1987; Theodorescu 1990.

<sup>108</sup> Tirpan 1998.

<sup>109</sup> The theme of the semantics and combination of architectural orders is discussed by Onians 1988; Gros 1989; Gros 1995; Lauter 1999, 235-237; Wilson Jones 2000, 109-117; Barresi 2003, 279-286.



Fig. 16. Virtual reconstruction of the Sanctuary of Apollo (a) and the Ploutonion (b-c) at the end of the 1<sup>st</sup> cent. AD (M. Limoncelli)

Even the choice of different stones as building materials contributed to the creation of a system of symbolic meanings in the sacred areas<sup>110</sup>. In the Sanctuary of Apollo, the travertine was used only for the outer Doric portico; the passage in the inner marble portico, for the faithful, thus became a concrete sign of having entered inside the sacred space, where all the temples are marble<sup>111</sup>. On the other hand, in the Ploutonion the use of travertine was still extensive in the Augustan age, thanks to its intrinsic relationship with the bedrock and thus the seismic fault: this material was used in “direct contact” with the Underworld, i.e. in the Ionic façade and Doric portico, closely connected with the most sacred and inaccessible rooms of the sanctuary. The rusticated finish of the latter recalled the chthonic nature of the

<sup>110</sup> Examples of symbolic use of different types of white and coloured marble in Hierapolis are in Ismaelli – Bozza 2016, 442-443.

<sup>111</sup> Ismaelli 2009, 413; Bozza 2020, 358.

local cult and contrasted with the marble architectures built in a raised position, i.e. the Tholos and the stoa with Pluto's naos<sup>112</sup>.

As for the public monuments, in the early imperial period the Ionic order was first used in the Augustan scaenae frons, similar to that erected by Zoilos in Aphrodisias<sup>113</sup>, and in the Central Agora. In the latter, the east portico lied on a higher level than the others and perhaps had specific functions, in a similar configuration to the agora of Nysa on the Maeander<sup>114</sup>. As Ismaelli pointed out<sup>115</sup>, the agora layout of Nysa represents an early experimentation of the stoa-basilica building type, that in the imperial age became widely popular in the agorai of Asia Minor. The public squares identified in the other closest cities do not offer a precise comparison for the Agora of Hierapolis so far. In Laodicea, the so-called sacred agora was a huge square of 265 x 128 m, probably surrounded by Ionic porticos in the original phase of the early imperial period<sup>116</sup>; however, the presence of temples inside the court, which is hypothesised by Şimşek, would suggest an interpretation as a sanctuary<sup>117</sup>. In parallel, in Tripolis, a peristyle with Ionic columns recently discovered near the late Roman agora could be considered as another agora or a sacred area<sup>118</sup>.

Moving on to the 2<sup>nd</sup> cent. AD, in Hierapolis the Ionic order was significantly revived in the North Agora, with double-aisled porticos with the canonical gradation from the outside to the inside corresponding to the Ionic order in the façade and to the Corinthian order in the inner colonnade (Fig. 17). Even the fact that the square was dominated on the east side by the Stoa-basilica<sup>119</sup> (Fig. 18) may represent a revival of the older Agora layout. This huge square created outside the original boundaries of the urban centre, together with the North Theatre and the so-called Bath-Church, was a powerful representation of local prosperity and prestige for foreigners arriving in Hierapolis<sup>120</sup>. The nearby cities that were able to compete with these ambitions should be mentioned once again: indeed, in Aphrodisias the south agora was gradually built between Tiberian age and the 2<sup>nd</sup> cent. AD with Ionic porticos that recalled the slightly older north agora<sup>121</sup>. The general layout of this complex, now interpreted as a sumptuous “urban park”, is different from that of the North Agora in Hierapolis, but we cannot exclude that this building site had an influence on the Phrygian city in the phenomenon of competition between poleis. A similar dynamic could also be hypothesised for the Aphrodisian civil basilica<sup>122</sup>, probably realised when a homologous building did not yet exist in Hierapolis. At the same time, the monuments of the even closer city of Laodicea must have had a role in this phenomenon of mutual imitation. The exceptional presence of two theatres both in Hierapolis, where the North Theatre was added to the Augustan one, and in Laodicea, where the north theatre in the imperial period was added to the

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<sup>112</sup> Bozza 2020, 358; for the Doric portico, see Panarelli 2022, 376-378, 426-433, figs. 49, 91-93.

<sup>113</sup> de Chaisemartin – Theodorescu 2017.

<sup>114</sup> İdil 1999, 57-71, 119-121; İdil 2006.

<sup>115</sup> Ismaelli et al. 2017, 129-133.

<sup>116</sup> As assumed by Şimşek 2017a, 135.

<sup>117</sup> On the excavations of the sacred agora of Laodicea, Şimşek 2013, 22-25; Şimşek 2017a, 131-135; Şimşek 2017b, 366-373.

<sup>118</sup> Duman 2017, 264-269. See also Duman 2022, 291-292.

<sup>119</sup> The main architectural models of the Stoa-basilica project are discussed in Rossignani – Sacchi 2007, 379-382.

<sup>120</sup> D'Andria – Rossignani 2012, 138-139.

<sup>121</sup> On the south agora of Aphrodisias, see de Chaisemartin 1989 (interpretation as a gymnasium); Smith 1996, 46-49 (public square); Ratté 2002, 16-17, 22-25 (public square serving as an urban connection between the theatre and north agora); for the most recent excavations, Wilson 2016; Wilson et al. 2016.

<sup>122</sup> Stinson 2016.



Hellenistic west theatre, surely is not a coincidence<sup>123</sup>. With the North Agora, the Hierapolitans intended to create a new urban space where, although in a baroque and more current style, the local identity continued to be affirmed through architectural forms still derived from the Carian and Ionian agorai.



Fig. 17. Virtual reconstruction of the porticos of North Agora (M. Limoncelli)



Fig. 18. Virtual reconstruction of the external façade of the Stoa-basilica (M. Limoncelli)

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<sup>123</sup> On the theatres of Laodicea, Şimşek 2007, 207-220; Şimşek – Sezgin 2012; Şimşek 2017b, 373-378.

To summarise, the Ionic order was extensively employed in Hierapolis from the Hellenistic age and throughout the imperial age; it represented a distinctive feature of both sacred architecture and public monuments. Temples and porticos are the building types in which the Ionic order was mainly used, while it was not adopted along the streets like in Perge and other centres of Pisidia and Pamphylia<sup>124</sup>. The North Agora was the last important context of the Ionic order in Hierapolis. The main monuments of the Severan age, instead, show an increasing preference for the Corinthian or composite order. It should be emphasised, however, that in other cities of Asia Minor the Severan age was the last vital phase of the Ionic order, as exemplified by the central columns of the Marble Court of Sardis, with twisted shafts in giallo-antico marble and a lavishly decorated entablature<sup>125</sup>. In general, while recognising its most important development within the 1<sup>st</sup> cent. AD, we can state that Ionic architecture continued to be vital throughout the imperial age and beyond, as recent research is gradually showing. For example, the late-antique restoration of the south agora of Aphrodisias, with its Ionic capitals<sup>126</sup>, proves the intense vitality of this formal language as a powerful symbol of the local identity.

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<sup>124</sup> See Heinzelmann 2003; Özdizbay 2012 (colonnaded street of Perge, datable between the Hadrianic and the Antonine period); Machatschek – Schwarz 1981, 62-66 (colonnaded street of Selge).

<sup>125</sup> Yegül 1986, 45-66, 134-146, figs. 120, 172-173. Another example could be the so-called Severian Ionic temple identified in Cremna in Pisidia (Mitchell 1995, 118-123), the dating of which, however, is based only on the scarce remains of the decoration.

<sup>126</sup> See Kidd 2018 for this group of Ionic capitals dating back to the end of the 5<sup>th</sup> cent./the beginning of the 6<sup>th</sup> cent. AD.

## BIBLIOGRAPHY

Alzinger 1974

W. Alzinger, *Augusteische Architektur in Ephesos*, Österreichisches Archäologisches Institut Sonderschriften, 16, Wien, 1974.

Bammer 1972

A. Bammer, *Die Architektur des jüngeren Artemision von Ephesos*, Wiesbaden, 1972.

Barresi 2003

P. Barresi, *Province dell'Asia Minore: costo dei marmi, architettura pubblica e committenza*, *Studia archaeologica*, 125, Roma, 2003.

Berns 2017

C. Berns, "Die »Tiberiusporticus« in Aphrodisias und andere Versuche zur Maximierung urbaner Qualitäten im kaiserzeitlichen Kleinasien", *Urbanitas - urbane Qualitäten. Die antike Stadt als kulturelle Selbstverwirklichung*, Kolloquium 19.-21. Dezember 2012 in München, Kommission zur Erforschung des antiken Städtewesens der Bayerischen Akademie der Wissenschaften, RGZM-Tagungen, 33, Eds. A.W. Busch – J. Griesbach – J. Lipps, Mainz, 2017, 111-120.

Bingöl 1980

O. Bingöl, *Das ionische Normalkapitell in hellenistischer und römischer Zeit in Kleinasien*, *IstMitt* Beiheft, 20, Tübingen, 1980.

Bingöl 1993

O. Bingöl, "Vitruvsche Volute am Artemis-Tempel von Hermogenes in Magnesia am Mäander", *IstMitt* 43, 1993, 399-415.

Bingöl 1996

O. Bingöl, "Zu Säule und Gebälk bei Hermogenes", *Säule und Gebälk. Zu Struktur und Wandlungsprozeß griechisch-römischer Architektur*, Bauforschungskolloquium in Berlin vom 16. bis 18. Juni 1994 veranstaltet vom Architekturreferat des DAI, *DiskAB*, 6, Ed. E.L. Schwandner, Mainz, 148-152.

Bingöl 2008

O. Bingöl, "Innovationen und Impulse von und durch Hermogenes", *Austausch und Inspiration. Kulturkontakt als Impuls architektonischer Innovation*, *DiskAB*, 9, Eds. F. Pirson – U. Wulf-Rheidt, Mainz, 2008, 107-112.

Bohn 1896

R. Bohn, *Die Theater-Terrasse*, *AvP IV*, Berlin, 1896.

Bozza 2017

S. Bozza, "Tradizione e sperimentazione nell'architettura sacra a Hierapolis di Frigia. I capitelli ionici con collarino decorato del Santuario di Apollo", *Decor. Decorazione architettonica nel mondo romano*, Atti del Convegno, Roma 21-24 maggio 2014, *Thiasos Monografie*, 9, Eds. P. Pensabene – M. Milella – F. Caprioli, Roma, 2017, 331-345.

Bozza 2020

S. Bozza, *Architettura ionica a Hierapolis di Frigia*, *Hierapolis di Frigia XIV*, Istanbul, 2020.

Bozza et al. 2022

S. Bozza – T. Ismaelli – P. Panarelli, "Nuovi dati sulle architetture di età ellenistica dell'area del *Ploutonion*", *Hierapolis di Frigia XV. Le attività delle campagne di*

*scavo e restauro 2012-2015*, Eds. F. D'Andria – M.P. Caggia – T. Ismaelli, Istanbul, 2022, 539-557.

Butler 1925

H.C. Butler, *Architecture, Part 1, The Temple of Artemis, Sardis II, I*, Leyden, 1925.

Campagna 2018

L. Campagna, *Il Ninfeo dei Tritoni, Hierapolis di Frigia XI*, Istanbul, 2018.

Cavalier 2005

L. Cavalier, *Architecture romaine d'Asie Mineure: les monuments de Xanthos et leur ornementation*, *Scripta antiqua*, 13, Paris, 2005.

Cavalier 2012

L. Cavalier, "Chapiteaux de la basilique civile de Smyrne: une "école" smyrniote?", *Basiliques et agoras de Grèce et d'Asie Mineure*, Ausonius Éditions Mémoires, 27, Eds. L. Cavalier – R. Descat – J. des Courtils, Bordeaux, 2012, 153-166.

D'Andria 2017

F. D'Andria, "Nature and Cult in the Ploutonion of Hierapolis Before and After the Colony", *Landscape and History in the Lykos Valley. Laodikeia and Hierapolis in Phrygia*, Eds. C. Şimşek – F. D'Andria, Newcastle upon Tyne, 2017, 207-240.

D'Andria 2018

F. D'Andria, "The Ploutonion of Hierapolis in light of recent research (2013-17)", *JRA* 31, 2018, 91-129.

D'Andria 2022

F. D'Andria, "Le attività della MAIER - Missione Archeologica Italiana a Hierapolis, dal 2012 al 2015", *Hierapolis di Frigia XV, Le attività delle campagne di scavo e restauro 2012-2015*, Eds. F. D'Andria – M.P. Caggia – T. Ismaelli, Istanbul, 2022, 1-47.

D'Andria – Rossignani 2012

F. D'Andria – M.P. Rossignani, "La stoa-basilique de Hiéropolis de Phrygie. Architecture et contexte urbain", *Basiliques et agoras de Grèce et d'Asie Mineure*, Ausonius Éditions Mémoires, 27, Eds. L. Cavalier – R. Descat – J. des Courtils, Bordeaux, 2012, 127-152.

de Chaisemartin 1989

N. de Chaisemartin, "Le «Portique de Tibère» à Aphrodisias: problèmes d'identification et de fonction", *REA* 91, 1989, 23-45.

de Chaisemartin – Lemaire 1996

N. de Chaisemartin – A. Lemaire, "Le Portique de Tibère. Recherches sur son architecture et sa fonction", *Aphrodisias Papers 3. The setting and quarries, mythological and other sculptural decoration, architectural development, Portico of Tiberius, and Tetrapylon*, Including the papers given at the Fourth International Aphrodisias Colloquium, held at King's College, London on 14 March, 1992, *JRA Supplementary Series*, 20, Eds. C. Roueché – R.R.R. Smith, Ann Arbor, 1996, 149-172.

de Chaisemartin – Theodorescu 2017

N. de Chaisemartin – D. Theodorescu, *Le theatre d'Aphrodisias. Les structures sceniques, Aphrodisias VIII*, Wiesbaden, 2017.

Duman 2017

B. Duman, "Tripolis 2016 yılı kazı, koruma ve onarım çalışmaları", *KST* 39, 1, 22-26 Mayıs 2017, Bursa, Bursa, 2017, 261-284.

Duman 2022

B. Duman, "Tripolis 2019-2020 Yılı Kazı ve Restorasyon Çalışmaları", Ed. A. Özme, *Kazı Çalışmaları 2019-2020 Yılı*, Cilt 1, 283-302.

Filippini 2022

A. Filippini, "Tra epigrafia, storia della città e storia delle religioni. Le iscrizioni rinvenute nello scavo del *Ploutonion* di Hierapolis (2008-2018)", *Hierapolis di Frigia XV, Le attività delle campagne di scavo e restauro 2012-2015*, Eds. F. D'Andria – M.P. Caggia – T. Ismaelli, Istanbul, 2022, 793-896.

Frey 1992

L. Frey, "Pour un modèle du chapiteau ionique vitruvien", *RA* 1992, 37-63.

Frey 1994

L. Frey, "La transmission d'un canon: les temples ioniques", *Le Projet de Vitruve. Objet, destinataires et réception du De Architectura*, Actes du colloque international organisé par l'École française de Rome, l'Institut de recherche sur l'architecture antique du CNRS et la Scuola Normale Superiore de Pise (Rome, 26-27 mars 1993), Collection de l'École française de Rome, 192, Rome, 1994, 139-170.

Ginouvès 1985

R. Ginouvès, *Dictionnaire méthodique de l'architecture grecque et romaine. Tome I. Matériaux, techniques de construction, techniques et formes du décor* (Collection de l'École Française de Rome, 84,1), Athènes – Rome, 1985.

Gliwitzky 2010

C. Gliwitzky, *Späte Blüte in Side und Perge. Die pamphyllische Bauornamentik des 3. Jahrhunderts n. Chr.*, Bern – New York, 2010.

Gros 1978

P. Gros, "Le dossier vitruvien d'Hermogénès", *MEFRA* 90, 1978, 687-703.

Gros 1989

P. Gros, "L'auctoritas chez Vitruve. Contribution à l'étude de la sémantique des ordres dans le *De Architectura*", *Munus non ingratum*, Proceedings of the International Symposium on Vitruvius' *De Architectura* and the Hellenistic and Republican Architecture, Leiden 20-23 January 1987, *Babesch Supplement*, 2, Eds. H. Geertman – J.J. de Jong, Leiden, 1989, 126-133.

Gros 1995

P. Gros, "La sémantique des ordres à la fin de l'époque hellénistique et au début de l'Empire. Remarques préliminaires", *Splendida civitas nostra. Studi archeologici in onore di Antonio Frova*, Studi e ricerche sulla Gallia Cisalpina, 8, Eds. G. Cavalieri Manasse – E. Roffia, Roma, 1995, 23-33.

Gruben 1963

G. Gruben, "Das archaische Didymaion. Mit einem Exkurs: Die Säulenhöhe des Naxier-Oikos in Delos", *JdI* 78, 1963, 78-182.

Guidoboni et al. 1994

E. Guidoboni – A. Comastri – G. Traina, *Catalogue of ancient earthquakes in the Mediterranean area up to the 10th century*, Roma, 1994.

Hansen – Le Roy 2012

E. Hansen – C. Le Roy, *Le Temple de Léto au Létoon de Xanthos. Étude architecturale, Fouilles de Xanthos, 11*, Aarhus, 2012.

Heilmeyer 1970

W.D. Heilmeyer, *Korinthische Normalkapitelle. Studien zur Geschichte der römischen Architekturdekoration, RM Ergänzungsheft, 16*, Heidelberg, 1970.

Heilmeyer 1997

W.D. Heilmeyer (Ed.), *Der Pergamonaltar. Die neue Präsentation nach Restaurierung des Telephosfrieses*, Tübingen, 1997.

Heinzelmann 2003

M. Heinzelmann, “Städtekonkurrenz und kommunaler Bürgersinn. Die Säulenstrasse von Perge als Beispiel monumentaler Stadtgestaltung durch kollektiven Euergetismus”, *AA* 2003, 197-220.

Hennemeyer 2013

A. Hennemeyer, *Das Athenaheiligtum von Priene. Die Nebenbauten - Altar, Halle und Propylon - und die bauliche Entwicklung des Heiligtums, Priene 2*, Archäologische Forschungen, 27, Wiesbaden, 2013.

Hoepfner 1968

W. Hoepfner, “Zum ionischen Kapitell bei Hermogenes und Vitruv”, *AM* 83, 1968, 213-234.

Hoepfner – Schwandner 1990

W. Hoepfner – E.L. Schwandner (Eds.), *Hermogenes und die hochhellenistische Architektur*, Internationales Kolloquium in Berlin vom 28. bis 29. Juli 1988, im Rahmen des XIII. Internationalen Kongresses für Klassische Archäologie, veranstaltet vom Architekturreferat des DAI, in Zusammenarbeit mit dem Seminar für Klassische Archäologie der Freien Universität Berlin, Mainz, 1990.

İdil 1999

V. İdil, *Nysa ve Akharaka = Nysa and Acharaca*, Istanbul, 1999.

İdil 2006

V. İdil, “Neueste Grabungsergebnisse von der Agora in Nysa am Mäander”, *Die griechische Agora*, Bericht über ein Kolloquium am 16. März 2003 in Berlin, Schriften des Instituts für klassische Archäologie der Freien Universität Berlin, Eds. W. Hoepfner – L. Lehmann, Mainz, 2006, 66-76.

Ismaelli 2009

T. Ismaelli, *Architettura dorica a Hierapolis di Frigia, Hierapolis di Frigia III*, Istanbul, 2009.

Ismaelli 2016

T. Ismaelli, “Nuovi dati sull’architettura del Ginnasio di Hierapolis”, *Hierapolis di Frigia VIII. Le attività delle campagne di scavo e restauro 2007-2011*, Eds. F. D’Andria – M.P. Caggia – T. Ismaelli, Istanbul, 2016, 553-596.

Ismaelli 2017

T. Ismaelli, *Il Tempio A nel Santuario di Apollo. Architettura, decorazione e contesto, Hierapolis di Frigia X*, Istanbul, 2017.

Ismaelli – Bozza 2016

T. Ismaelli – S. Bozza, “Ancient Construction Sites in Hierapolis: New Data on Strategies, Materials and Techniques”, *Ancient quarries and building sites in Asia Minor*.

*Research on Hierapolis in Phrygia and other cities in south-western Anatolia: archaeology, archaeometry and conservation*, Bibliotheca Archaeologica, 45, Eds. T. Ismaelli – G. Scardozi, Bari, 2016, 437-458.

Ismaelli – Bozza 2021

T. Ismaelli – S. Bozza, “The Construction Site of the Temple of Dionysus”, *Teos. Inscriptions, Cults, and Urban Fabric*, Ed. M. Kadioğlu, Istanbul, 2021, 242-244.

Ismaelli – Scardozi 2016

T. Ismaelli – G. Scardozi (Eds.), *Ancient quarries and building sites in Asia Minor. Research on Hierapolis in Phrygia and other cities in south-western Anatolia: archaeology, archaeometry and conservation*, Bibliotheca Archaeologica, 45, Bari, 2016.

Ismaelli et al. 2016

T. Ismaelli – G. Scardozi – G. Sobrà, “New data on the building site of the theatre in Hierapolis”, *Ancient quarries and building sites in Asia Minor. Research on Hierapolis in Phrygia and other cities in south-western Anatolia: archaeology, archaeometry and conservation*, Bibliotheca Archaeologica, 45, Eds. T. Ismaelli – G. Scardozi, Bari, 2016, 305-328.

Ismaelli et al. 2017

T. Ismaelli – G. Scardozi – S. Bozza, “L’Agorà centrale di Hierapolis di Frigia”, *Mare Internum* 9, 2017, 113-141.

Jes et al. 2010

K. Jes – R. Posamentir – M. Wörrle, “Der Tempel des Zeus in Aizanoi und seine Datierung”, *Aizanoi und Anatolien, neue Entdeckungen zur Geschichte und Archäologie im Hochland des westlichen Kleinasien*, Ed. K. Rheidt, Mainz, 2010, 59-87.

Kadioğlu 2021

M. Kadioğlu, “The Sanctuary of Dionysus”, *Teos. Inscriptions, Cults, and Urban Fabric*, Ed. M. Kadioğlu, Istanbul, 2021, 188-241.

Kidd 2018

A.B. Kidd, “The Ionic Capitals from the South Stoa of Aphrodisias’ Urban Park: A Case Study of Urban Design in Late Antiquity”, *IstMitt* 68, 2018, 209-244.

Knackfuss 1941

H. Knackfuss, *Didyma I, Die Baubeschreibung in drei Bänden*, Berlin, 1941.

Koenigs 2015

W. Koenigs, *Der Athenatempel von Priene, Priene 3*, Archäologische Forschungen, 33, Wiesbaden, 2015.

Köster 2004

R. Köster, *Die Bauornamentik von Milet. Die Bauornamentik der frühen und mittleren Kaiserzeit, Milet VII, 1*, Berlin - New York, 2004.

Kumsar et al. 2015

H. Kumsar – Ö. Aydan – C. Şimşek – F. D’Andria, “Historical earthquakes that damaged Hierapolis and Laodikeia antique cities and their implications for earthquake potential of Denizli basin in western Turkey”, *Bulletin of Engineering Geology and the Environment* 75, 2, 2015, 519-536.

Lauter 1999

H. Lauter, *L’architettura dell’ellenismo*, Milano, 1999.

Linant de Bellefonds 2009

P. Linant de Bellefonds, *The mythological reliefs from the Agora Gate, Aphrodisias IV*, Mainz, 2009.

Machatschek – Schwarz 1981

A. Machatschek – M. Schwarz, *Bauforschungen in Selge*, Österreichische Akademie der Wissenschaften, Philosophisch-Historische Klasse Denkschriften, 152; Ergänzungsbände zu den Tituli Asiae Minoris, 9, Wien, 1981.

Masino – Sobrà 2012

F. Masino – G. Sobrà, “Ricerche e interventi nel Teatro”, *Hierapolis di Frigia V. Le attività delle campagne di scavo e restauro 2004-2006*, Eds. F. D’Andria – M.P. Caggia – T. Ismaelli, Istanbul, 2012, 207-233.

Mert 2008

İ.H. Mert, *Untersuchungen zur hellenistischen und kaiserzeitlichen Bauornamentik von Stratonikeia*, IstForsch, 50, Tübingen, 2008.

Mitchell 1995

S. Mitchell, *Cremna in Pisidia. An Ancient City in Peace and in War*, London, 1995.

Muss – Bammer 2001

U. Muss – A. Bammer, *Der Altar des Artemisions von Ephesos*, *FiE XII*, 2, Wien, 2001.

Müller 2016

K. Müller, “Antike Bauteile in Apameia”, *Kelainai-Apameia Kibotos: une métropole achéménide, hellénistique et romaine*, *Kelainai II*, Eds. A. Ivantchik – L. Summerer – A. von Kienlin, Bordeaux, 2016, 57-133.

Naumann 1979

R. Naumann, *Der Zeustempel zu Aizanoi nach den Ausgrabungen von Daniel Krencker und Martin Schede*, *Denkmäler antiker Architektur*, 12, Berlin, 1979.

Ohnesorg 2007

A. Ohnesorg, *Der Kroisos-Tempel. Neue Forschungen zum archaischen Dipteros der Artemis von Ephesos*, *FiE XII*, 4, Wien, 2007.

Onians 1988

J. Onians, *Bearers of Meaning: the Classical Orders in Antiquity, the Middle Ages, and the Renaissance*, Cambridge, 1988.

Outschar 1987

U. Outschar, “Betrachtungen zur kunstgeschichtlichen Stellung des Sebasteions in Aphrodisias”, *Aphrodisias de Carie*, Colloque du Centre de recherches archéologiques de l’Université de Lille III, 13 novembre 1985, Eds. J. de la Genière – K.T. Erim, Paris, 1987, 107-122.

Özdizbay 2012

A. Özdizbay, *Perge’nin M.S. 1.-2. Yüzyillardaki Gelişimi = Die Stadtentwicklung von Perge im 1-2. Jh. n.Chr.*, Adalya Ekyayın Dizisi 10, Antalya, 2012.

Panarelli 2022

P. Panarelli, “Lo scavo del Ploutonion: campagne 2012-2015”, *Hierapolis di Frigia XV. Le attività delle campagne di scavo e restauro 2012-2015*, Eds. F. D’Andria – M.P. Caggia – T. Ismaelli, Istanbul, 2022, 337-435.



Pedersen 2013

P. Pedersen, "Architectural Relations between Karia and Lykia at the Time of the Ionian Renaissance", *Euploia. La Lycie et la Carie antiques. Dynamiques des territoires, échanges et identités*, Actes du colloque de Bordeaux, 5, 6 et 7 novembre 2009, Ausonius Éditions Mémoires, 34, Eds. P. Brun – L. Cavalier – L. Konuk – F. Pros, Bordeaux, 2013, 127-142.

Pedersen 2015

P. Pedersen, "The Ionian Renaissance and the Hellenistic Architecture of Kos", *L'architecture monumentale grecque au IIIe siècle a.C.*, Ausonius Éditions Mémoires, 40, Ed. J. des Courtils, Bordeaux, 2015, 147-174.

Pensabene 2006

P. Pensabene, "Le sculture di Nicomedia e Afrodisia e i pilastri della basilica severiana di Leptis Magna", *Marmora* 2, 2006, 41-58.

Piesker – Ganzert 2012

K. Piesker – J. Ganzert, *Das Theater von Patara. Ergebnisse der Untersuchungen 2004 bis 2008, Patara II, 2*, Istanbul, 2012.

Plattner 2004

G. Plattner, "Transfer von Architekturkonzepten und Ornamentformen zwischen Kleinasien und Rom in der Kaiserzeit", *RHM* 46, 2004, 17-35.

Plattner 2009

G. Plattner, "Zum Baubetrieb Kleinasien in der römischen Kaiserzeit", *Bautechnik im antiken und vorantiken Kleinasien*, Internationale Konferenz, 13. - 16. Juni 2007 in Istanbul, Byzas, 9, Ed. M. Bachmann, Istanbul, 2009, 393-407.

Plattner 2014

G. Plattner, "Werkstatt und Muster. Zur Methode der Scheidung von Arbeitsprozessen und Stilelementen", *Antike Bauornamentik. Grenzen und Möglichkeiten ihrer Erforschung*, Studien zur antiken Stadt, 12, Eds. J. Lipps – D. Maschek, Wiesbaden, 2014, 53-68.

Posamentir – Wörrle 2006

R. Posamentir – M. Wörrle, "Der Zeustempel von Aizanoi, ein Grossbau flavischer Zeit", *IstMitt* 56, 2006, 227-246.

Ratté 2002

C. Ratté, "The urban development of Aphrodisias in the Late Hellenistic and Early Imperial periods", *Patris und Imperium. Kulturelle und politische Identität in den Städten der römischen Provinzen Kleinasien in der frühen Kaiserzeit*, Kolloquium Köln, November 1998, *Babesch Supplement*, 8, Eds. C. Berns – H. von Hesberg – L. Vandeput – M. Waelkens, Leuven – Paris, 2002, 5-32.

Ritti et al. 2000

T. Ritti – C. Şimşek – H. Yildiz, "Dediche e καταγραφαι dal santuario frigio di Apollo Lairbenos", *EA* 32, 2000, 1-88.

Rohmann 1998

J. Rohmann, *Die Kapitellproduktion der römischen Kaiserzeit in Pergamon*, *PF* 10, Berlin, 1998.

Rohn 2001

C. Rohn, "Die Arbeiten am Theater-Stadion-Komplex von Aizanoi", *AA* 2001, 303-317.

Rohn 2010

C. Rohn, "Die Scaenae Frons von Aizanoi - Eine Fassade innerhalb der Gesamtanlage Theater-Stadion", *La Scaenae Frons en la arquitectura teatral romana*, Actas del symposium internacional celebrado en Cartagena los días 12 al 14 de marzo de 2009 en el Museo del Teatro Romano, Eds. S.F. Ramallo Asensio - N. Röring, Murcia, 2010, 343-354.

Romeo et al. 2014

I. Romeo - D. Panariti - R. Ungaro, *La Tomba Bella. Un heroon giulio-claudio e il suo sarcofago*, *Hierapolis di Frigia VI*, Istanbul, 2014.

Rossignani - Sacchi 2007

M.P. Rossignani - F. Sacchi, "La Stoà-basilica dell'Agorà settentrionale (Regio I)", *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 2000-2003*, Eds. F. D'Andria - M.P. Caggia, Istanbul, 2007, 359-411.

Rumscheid 1994

F. Rumscheid, *Untersuchungen zur kleinasiatischen Bauornamentik des Hellenismus*, Beiträge zur Erschliessung hellenistischer und kaiserzeitlicher Skulptur und Architektur, 14, Mainz, 1994.

Sacchi - Bonzano 2012

F. Sacchi - F. Bonzano, "L'ordine del Tempio di Apollo a Hierapolis: prime acquisizioni", *Hierapolis di Frigia V. Le attività delle campagne di scavo e restauro 2004-2006*, Eds. F. D'Andria - M.P. Caggia - T. Ismaelli, Istanbul, 2012, 325-357.

Scardozzi 2015

G. Scardozzi (Ed.), *Nuovo Atlante di Hierapolis di Frigia. Cartografia archeologica della città e delle necropoli*, *Hierapolis di Frigia VII*, Istanbul, 2015.

Semeraro 2007

G. Semeraro, "Ricerche archeologiche nel Santuario di Apollo (Regio VII) 2001-2003", *Hierapolis di Frigia I. Le attività delle campagne di scavo e restauro 2000-2003*, Eds. F. D'Andria - M.P. Caggia, Istanbul, 2007, 169-209.

Semeraro 2012

G. Semeraro, "Ricerche nel Santuario di Apollo", *Hierapolis di Frigia V. Le attività delle campagne di scavo e restauro 2004-2006*, Eds. F. D'Andria - M.P. Caggia - T. Ismaelli, Istanbul, 2012, 293-324.

Semeraro 2016

G. Semeraro, "The Sanctuary of Apollo in Hierapolis: building activities and ritual paths", *Ancient quarries and building sites in Asia Minor. Research on Hierapolis in Phrygia and other cities in south-western Anatolia: archaeology, archaeometry and conservation*, Bibliotheca Archaeologica, 45, Eds. T. Ismaelli - G. Scardozzi, Bari, 2016, 777-785.

Smith 1996

R.R.R. Smith, "Archaeological research at Aphrodisias 1989-1992", *Aphrodisias Papers 3. The setting and quarries, mythological and other sculptural decoration, architectural development, Portico of Tiberius, and Tetrapylon*, Including the papers given at the Fourth International Aphrodisias Colloquium, held at King's College, London on 14 March, 1992, *JRA Supplementary Series*, 20, Eds. C. Roueché - R.R.R. Smith, Ann Arbor, 1996, 10-72.

Stinson 2016

P. Stinson, *The Civil Basilica, Aphrodisias VII*, Wiesbaden, 2016.

Şimşek 2007

C. Şimşek, *Laodikeia (Laodikeia ad Lycum)*, Istanbul, 2007.

Şimşek 2013

C. Şimşek, "Laodikeia Antik Kenti'nde Yapılan Çalışmalar", *CollAn XII*, Istanbul, 2013, 15-36.

Şimşek 2017a

C. Şimşek, "2015 Yılında Laodikeia'da Yapılan Çalışmalar", *Arkeoloji ve Sanat* 156, 2017, 131-152.

Şimşek 2017b

C. Şimşek, "2016 Yılı Laodikeia Çalışmaları", *KST* 39, 1, 22-26 Mayıs 2017, Bursa, Bursa, 2017, 359-386.

Şimşek – Sezgin 2012

C. Şimşek – M.A. Sezgin, "The west and north theatres in Laodicea", *Restoration and management of ancient theatres in Turkey: methods, research, results*, Proceedings of the Hierapolis International Symposium, Karahayıt-Pamukkale (Denizli), Lycus River Hotel 7th-8th of September 2007, *Archeologia e storia*, 11, Eds. F. Masino – P. Mighetto – G. Sobrà, Galatina, 2012, 103-128.

Theodorescu 1987

D. Theodorescu, "Le temple d'Aphrodite. Prolégomènes à un étude de restitution", *Aphrodisias de Carie*, Colloque du Centre de recherches archéologiques de l'Université de Lille III, 13 novembre 1985, Eds. J. de la Genière – K.T. Erim, Paris, 1987, 87-99.

Theodorescu 1990

D. Theodorescu, "La restitution de l'Aphrodision: certitudes et perplexités", *Aphrodisias papers. Recent work on architecture and sculpture*, Including the papers given at the Second International Aphrodisias Colloquium held at King's College London on 14 November, 1987, *JRA Supplementary Series*, 1, Eds. C. Roueché, K.T. Erim, Ann Arbor, 1990, 49-65.

Tirpan 1998

A.A. Tirpan, *Stratonikeia I, Augustus-İmparatorlar Tapınağı*, Konya, 1998.

Uz 2013

D.M. Uz, *Teos'taki Dionysos Tapınağı*, Ankara, 2013.

Vandeput 1997

L. Vandeput, *The architectural decoration in Roman Asia Minor. Sagalassos: a case study*, SEMA, 1, Turnhout, 1997.

von Gerkan – Krischen 1928

A. von Gerkan – F. Krischen, *Thermen und Palaestren, Milet I*, 9, Berlin, 1928.

Waelkens 1987

M. Waelkens, "Notes d'architecture sur l'agora et le portique de Tibère à Aphrodisias de Carie", *Aphrodisias de Carie*, Colloque du Centre de recherches archéologiques de l'Université de Lille III, 13 novembre 1985, Eds. J. de la Genière – K.T. Erim, Paris, 1987, 123-134.

Wilson 2016

A. Wilson, "Water, nymphs, and a palm grove: monumental water display at Aphrodisias", *Aphrodisias Papers 5. Excavation and research at Aphrodisias, 2006-*

2012, *JRA Supplementary Series*, 103, Eds. R.R.R. Smith – J. Lenaghan – A. Sokolicek – K. Welch, Portsmouth, 2016, 100-135.

Wilson et al. 2016

A. Wilson – B. Russell – A. Ward, “Excavations in an urban park (“South Agora”), 2012”, *Aphrodisias Papers 5. Excavation and research at Aphrodisias, 2006-2012, JRA Supplementary Series*, 103, Eds. R.R.R. Smith – J. Lenaghan – A. Sokolicek – K. Welch, Portsmouth, 2016, 77-90.

Wilson Jones 2000

M. Wilson Jones, *Principles of Roman architecture*, New Haven, 2000.

Yegül 1986

F.K. Yegül, *The Bath-Gymnasium complex at Sardis, Archaeological Exploration of Sardis* 3, Cambridge, 1986.

Yegül 2020

F.K. Yegül, *The Temple of Artemis at Sardis, Archaeological Exploration of Sardis Reports*, 7, 2020.

Yılmaz et al. 2013

F. Yılmaz – S. Morkoç – D. Peçen, “Aizanoi İon Sütun Başlıkları”, *Aizanoi I, 2012 Yılı Kazı ve Araştırma Raporları*, Ed. E. Özer, Ankara, 2013, 158-179.

Yurtsever 2021

A. Yurtsever, *Side Gymnasiumu (M Yapısı). Mimari araştırmalar ve araştırmaların sonuçları, Side Antik Kenti Araştırmaları 1*, İstanbul, 2021.





