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DOCTORAL THESIS SUMMARY

Glass, bone and antler artefacts discovered in the ancient theatre of Apollonia

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Content of then summary

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Table of contents of the thesis

Introduction (Chapter 1)

Our understanding of ancient glass is largely shaped by complete, visually striking vessels, typically recovered from funerary contexts and now housed in museums or private collections. While such examples clearly convey vessel shapes, functions, and manufacturing techniques, they reflect a selective sample influenced by burial rituals rather than the full spectrum of glassware used in antiquity. In contrast, fragmented finds from settlement sites, resulting from everyday use and recycling, provide a more accurate view of the diversity of glass vessels used in daily life.

Bone artefacts represent a significant yet often overlooked aspect of ancient material culture. Crafted from animal bones, antler, horn, tusk, or ivory, they served utilitarian, aesthetic, and symbolic purposes. Studying these objects offers insights into technological innovation, resource management, and cultural practices. In the Roman world, bone and antler were abundant and versatile, requiring processes such as cleaning, boiling, carving, and finishing. These techniques reflect both sophisticated material knowledge and high craftsmanship, enabling bone to serve functions ranging from everyday household items to objects of special significance. The refinement of these methods also mirrors broader trends in ancient craft and resource utilization.

This thesis examines the glass, bone, and antler artefacts from the excavations of the ancient theatre at Apollonia, on the Adriatic coast in southern Illyricum. It pursues two primary objectives:

a) to determine whether the finds inform the dating and nature of their archaeological context;

b) to assess what they reveal about the use of glass and bone artefacts in the daily life of this ancient *polis*.

The summary of the individual chapters (Chapters 2-7)

The dissertation is composed of 8 main chapters and subsequent subchapters.

Chapter 2 introduces Apollonia of Illyricum, located in present-day Albania, a key Mediterranean hub that reflected both Greek colonial expansion and subsequent Roman urban development. Founded in the late 7th century BC by settlers from Corinth and Corcyra, its strategic position along the Aous River near the Adriatic coast enabled it to flourish as a commercial and cultural crossroads between the Greek world and the Illyrian hinterland. Excavations and surveys have revealed a complex stratigraphy documenting multiple phases of growth: from Archaic and Hellenistic traditions through Roman interventions, followed by medieval and modern transformations. These discoveries illuminate both Apollonia's evolving urban fabric and its role as a centre of regional power, offering valuable insights into the socio-political dynamics of Illyria and the Balkans. Today, its heritage endures through museum collections and its designation as an Archaeological Park, where ongoing research continues to underscore its importance as a locus of cultural interaction and economic prosperity.

Chapter 3 focuses on the archaeological research at the theatre of Apollonia. Like other Greek and Hellenistic theatres, it was a monumental open-air construction integrated into the landscape, comprising the *koilon*, *orchestra*, *skené*, and *parodoi*, which facilitated both religious and cultural performances. In the Roman provinces of Illyricum and Epirus, such theatres were often adapted for gladiatorial spectacles, serving as key indicators of Romanization. The theatre of Apollonia was first suggested through *metope* fragments with mask depictions recorded by Praschniker and Schober in 1916 and conclusively identified in the 20th century by Hasan Ceka. Systematic excavations (1971–1981), led by Alexandra Mano and later Burhan Dautaj, examined the orchestra, stage building, and lower *koilon* using a quadrant-based methodology. The excavations revealed architectural collapse, displaced seating, Roman structural modifications such as brick walls and arena installations, as well as reuse in Late Antiquity and the Middle Ages, including a chamber tract and possible Christian chapel. Based on stratigraphy and remains, three main phases were identified: the initial Hellenistic construction in the 3rd century BC; Roman modifications in the 1st–2nd centuries AD, including Flavian decorative elements; and abandonment/spoliation from the 3rd–4th centuries onwards. However,

reconstruction of the building remained problematic due to complex construction phases and extensive stone robbing, which also hindered comprehensive publication.

Between 2006 and 2014, the theatre was re-investigated under an Albanian–German collaboration led by Henner von Hesberg and Bashkim Lahi. The project pursued three aims: to complete a detailed architectural survey, clarify chronological development through targeted excavation, and document small finds for contextual interpretation. Initially employing the earlier quadrant system, from 2007 onwards the team adopted stratigraphic excavation and three-dimensional documentation. Successive campaigns focused on the northern *parodos*, stage building, *orchestra*, and *koilon*, as well as surrounding terraces, to understand urban integration. Key discoveries included the northern *proskenion* foundation, Roman arena installations, *orchestra* drainage systems, and evidence of pre-theatre habitation from the Classical and early Hellenistic periods. Excavations clarified the adjoining *stoa*, *insulae* above the *koilon*, and extensive reuse in the Roman and post-antique periods. By 2014, the main construction phases and overall architectural dimensions of the theatre were established, while selected areas were prepared for public presentation. Following completion, most trenches were backfilled, and in 2015 responsibility for the monument was returned to the Albanian authorities.

The excavations identified eight construction phases: six from antiquity and two post-antique.

- Phase 0: demolition of Archaic and Classical housing, terracing, and drainage.
- Phase 1 (mid-3rd c. BC): construction of *koilon*, *orchestra*, stage building with Ionic *proskenion* and Doric *skené*, plus a possible *stoa post scaenam*.
- Phase 2: transformation of the annex into a monumental Doric *stoa* aligned with the urban grid.
- Phase 3 (1st–2nd c. AD): conversion of *orchestra* into an *arena*, removal of lower seating, blocking of the *parodoi*.
- Phase 4 (late 2nd c. AD): demolition of *skené* to enlarge the *arena*, with reused decorative blocks.
- Phase 5 (early 3rd c. AD): addition of western arena chambers.
- Phase 6 (later 3rd c. AD): remodelling of chambers into a colonnaded façade, followed by arena abandonment.

- Phase 7: addition of a chapel.
- Phase 8: medieval/early modern spoliation, quarrying much of the *koilon* for lime and construction, notably for the Monastery of Pojani. Coin hoards and lime production debris (10th–14th c.) attest to prolonged stone robbing, severely destabilising stratigraphy and preservation.

Chapter 4 outlines methodological considerations for small finds, especially bone, antler, and glass artefacts. Interpretation is constrained by early excavation strategies (1971–1981 and 2006), which lacked stratigraphic frameworks, allowing only area-based, not contextual, associations. Excavations from 2007 onwards improved standards, employing stratigraphic excavation, 3D documentation, and systematic collection. Nonetheless, erosion, stone robbing, and post-antique disturbance complicate many contexts. Dating relies on architectural phasing, epigraphy, and comparative finds (pottery, lamps, small finds). Bone and antler artefacts pose additional challenges due to fragmentation, multi-functionality, and limited typologies. To ensure accuracy, each object was verified to avoid duplication and documented via drawings, photography, and a custom database recording morphology, metrics, and context, enabling both quantitative and qualitative analysis. Reintegration of post-2008 material now permits revised interpretations beyond earlier publications.

For classification, bone and antler artefacts follow established typologies (notably Augusta Raurica for functional groups; Aquincum for hairpins, needles, and gaming counters). Illustrations rely mainly on scaled drawings, supplemented by photographs. Glass artefact study faces challenges of form diversity, fragmentation, and recycling. Assemblage quantification and functional interpretation require a holistic approach; a dedicated database facilitated this process. Typological references draw on Augusta Raurica, with comparisons to Thessaloniki, Slovenia, and other Roman sites. Following van Lith and Randsborg, refined by Rütti, vessels were divided into three main functional categories (tableware, storage, toilet vessels) plus a varia group. Identification rested on features, colour, size, decoration, and context, supplemented by artistic depictions and literary sources. Colour was systematically recorded using the Pantone chart, enabling precise differentiation. Natural bluish-green glass dominated the 1st–3rd c. AD; colourless glass gained popularity in the late 1st c. AD; new green shades emerged in the 3rd–4th c. AD. Bubble concentration and rim preservation were also recorded. Illustrations primarily consist of drawings, with group photos for clarity.

Chapter 5 reviews the state of research. Despite Apollonia's importance, research on small finds remains limited. Excavations since the 19th century have been sporadic, often unpublished, or restricted to preliminary reports, with documentation from early foreign missions scattered or lost. Albanian and recent international excavations are archived at the Archaeological Institute, Tirana. Artefacts are primarily housed in the Tirana Archaeological Museum and the Museum of the Archaeological Park, though some remain in smaller or foreign collections. Scholarship has traditionally prioritised architecture, epigraphy, and public monuments, with household archaeology and small finds receiving less attention.

Published bone and antler finds are scarce, absent from the Archaeological Atlas, and largely restricted to 13 objects from the Roman necropolis, dominated by hairpins alongside a distaff, spoon, Hercules-cub amulet, astragal, and possible flute fragment. The low number is not due to soil conditions, as preservation of human and animal bones is good. Preliminary reports up to 2008 add 11 more theatre artefacts. Glass finds, though rarely published, held social and economic importance. Appearing as early as the 6th c. BC, glass became widespread from the 1st c. BC, gradually replacing ceramics. In the Roman *necropolis*, glass accounts for ca. 50% of grave inventories, including globular flasks, beakers, cups, bowls, and cosmetic bottles, remarkable concentrations suggesting local workshops. Major studies of Roman glass in Albania focus on Dyrrachium, but reference Apollonia. Theatre reports up to 2008 recorded 491 fragments, representing 317 MNI.

Thus, research on bone, antler, and glass artefacts at Apollonia remains in an early stage, but these materials provide essential evidence of daily life, personal adornment, and local craftsmanship.

Chapter 6 analyses the worked bone and antler artefacts. Many forms (e.g. spoons, hairpins, gaming counters, needles) also occur in other materials, so bone must be studied within the broader material culture. A total of 60 fragments were recovered: 11 from 1971–1981 and 49 from 2006–2014, reconstructed into 54 artefacts. These include:

- Utilitarian objects: tool handle, textile tools (spindle whorls, spindles, needles, pin beater), and a *stylus*.
- Gaming accessories: four astragals, one die, three counters.
- Cosmetic/personal items: ear probe, 17 hairpins with a mostly simple designs.
- Furniture/miscellaneous: rivet, plaque, hinges, furniture leg.

- Workshop debris: 9 items.

Although numerically modest, the assemblage shows evidence of local bone working from cattle, horse, and red deer, reflecting skilled craftsmanship active 1st–4th c. AD. Chronologically, most artefacts are Roman, with only a spindle and two hairpins associated with the Hellenistic phase. Distribution indicates broad presence across the theatre, linking many items directly to theatre-related activities.

Chapter 7 presents the glass assemblage: 1,447 fragments (1,081 MNI), including 57 fragments (46 MNI) from 1971–1981, none from 2006, and 1,390 fragments (1,035 MNI) from 2007–2014. While dominated by vessel glass, special artefacts and window glass provide further insights.

- Special artefacts are represented by (34 fragments, 29 MNI): counters, beads, ring inlay, bracelets, furniture mount, and raw glass debris. Concentrated in the *stoa* and *koilon*, these suggest gaming, adornment, and furniture use, possibly linked to theatre activities. Raw glass chunks and furnace fragments imply nearby secondary glass workshops.
- Window glass is represented by four fragments (1st–3rd c. AD) made of translucent aqua or colourless glass. Was discovered mostly in the *koilon* and *stoa*, their scarcity reflects climatic and functional factors.
- Vessel glass is represented by 639 body fragments (513 MNI) made mainly of high-quality colourless or aqua glass with few bubbles. Tableware dominates, especially bowls (63) and dishes/plates (14), concentrated in the *koilon*. Beakers (78) and cups (56) are particularly abundant, suggesting beverage consumption during performances. Jugs (10) and flasks (3) served drink distribution. Storage vessels include 17 bottles and 2 jars, mainly square bottles (AR 156). Toilet vessels (22 MNI) consist of *unguentaria* and *aryballoi*, concentrated in the *parodos* and *stoa*, reflecting cosmetic/medicinal use.

Chronologically, ribbed bowls and hemispherical cups dominate 1st–2nd c. AD contexts, while ovoid and bulbous beakers typify the later 2nd–3rd c. AD. Distribution patterns reveal structured use: *koilon* for consumption, *parodoi* for supply, and *stoa* for preparation and sale.

Conclusions (Chapter 8)

The study of glass, bone, and antler artefacts from the ancient theatre of Apollonia provides significant insights into both the chronology and everyday use of the site. Overall, the artefacts largely corroborate the chronological framework established through architectural and ceramic evidence, although some glass finds suggest that contexts previously assigned to the Hellenistic period (Phase 2) may instead date to the first half of the 1st century AD. This interpretation aligns with the divergent development of Apollonia and its sister city Dyrrachium during the Roman civil war: Apollonia retained its status as a *polis* within the Roman Empire, enhancing its Hellenistic theatre for gladiatorial games, while Dyrrachium underwent Romanisation with the construction of a large amphitheatre under Trajan.

Evidence from workshops indicates local production of bone and antler artefacts, supported by workshop debris and semi-finished products. Certain glass vessels, including beakers, cups, and square bottles, were likely produced locally, as inferred from raw glass chunks and characteristic base marks. Chronologically, Hellenistic glass is present but scarce, with a notable increase in the first century AD and the highest concentration between the late first and third centuries AD. Late Roman finds are minimal and likely reflect site abandonment.

Functional analysis reveals that vessel glass was dominated by tableware, particularly drinking vessels, supplemented by items for eating and serving food. Jugs and flasks indicate beverage consumption during performances, while glass bottles suggest the use of other liquids beyond wine. Toilet vessels point to cosmetic and medicinal practices, potentially associated with injured performers or gladiators. Spatial distribution patterns demonstrate clear organization, linking the *stoa*, *parodos*, and *koilon*, and illustrating the preparation, sale, and movement of foods and drinks within the theatre.

This study underscores that careful analysis of fragmentary artefacts, considering both typology and spatial distribution, which can provide valuable insights into daily life, social behavior, and performative practices in theatre spaces, particularly where written sources remain silent.