

BUTRINT FOUNDATION



Field Projects 2007 Interim Report

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Foreword

It gives me great pleasure to introduce the Interim Field Report of the Butrint Foundation's 2007 summer season. The excavations continued the ongoing process of illuminating the many phases of Butrint's long history and it was, as ever, full of challenges and surprises. From the Bronze Age excavations on Cape Stillo and Kalivo through the fascinating discoveries in the Roman Forum to insights into the Dark Ages afforded by the dig in the Western Defences, new evidence emerged which has allowed us to further develop our understanding of this infinitely complex site and its region. Even the unplanned rescue excavation at the Well of Junia Rufina proved remarkably fruitful. Alongside these research excavations, Albanian students from three different universities were able to learn their craft in the Temple and Roman Townhouse



Students working on the Temple excavations.



Student Training Programme fieldwork tuition.

on the Vrina Plain. The training project was particularly satisfying because, for the first time, the digs were entirely in the hands of alumni of previous campaigns, realising the ambition held at the inception of the programme.

As ever we are greatly indebted to the project specialists, and to our support team in Ksamili, working on the analysis and illustration of the finds, photography, the electronic archive and the fabulous new website. Photogrammetric recording of the monuments continued and was complemented by the trial use of a laser scanner.

This year also saw the beginning of a major new conservation and vegetation management project in the

Park. In previous years we have concentrated on the presentation of recent excavations, but the focus has now shifted to protection and conservation of earlier monuments that are suffering from neglect. The Water Gate and the Nymphaeum behind the Wall of Inscriptions are examples of monuments that have been restored by judicious vegetation clearance and sensitive conservation. Meanwhile, an extensive de-vegetation



Conservation of the Vrina Plain Cremation Tomb.

programme, aimed at giving the monuments more light and space, has been put in place; this we hope will be adopted as a model by the Park management. With future conservation in mind we invited a mosaic specialist to Butrint in July to prepare an action plan to present the Baptistery mosaic and hope to have it on view within three years.

As proud as we are of the substance and variety of our achievement this year, we are keenly aware that we have only been able to enjoy such a successful season thanks to the continued support of the Packard Humanities Institute and the assistance and forbearance of our Albanian colleagues, to whom we offer our sincere gratitude.

Rupert Smith, Director, Butrint Foundation



Ivy leaf detail from mosaic panel in the Triconch Palace.

Acknowledgements

The Butrint Foundation summer excavation, conservation and training projects at Butrint summarised in this Interim Report took place between mid-May and the end of July 2007. This exciting portfolio of varied and over-arching projects was made possible thanks to the Packard Humanities Institute. We should also like to thank the Howard and Nancy Marks Fund for supporting imperative conservation needs in the Butrint Museum and for financing the essential monuments conservation and vegetation management projects. Thanks too to the Oak Foundation for funds to carry out urgent assessment and conservation on imperilled mosaic pavements. Finally special (and personal) thanks to Lord Rothschild, Lord Sainsbury of Preston Candover and the Butrint Foundation Trustees for their commitment to the Butrint projects.

On behalf of the Butrint Foundation the summer excavations were directed by Richard Hodges in partnership with Ilir Gjipali, Deputy Director of the Albanian Institute of Archaeology. Rupert Smith directed projects on the conservation of monuments and mosaics and the vegetation management initiative. Project Management was carried out by Andrew Crowson working with Oliver Gilkes and closely supported by Jerry O'Dwyer who provided invaluable backup to the excavation and conservation initiatives throughout the Project.

Dhimitër Çondi was the principal co-director of the excavations on the Vrina Plain, the Forum and Roman

Bridge on behalf of the Institute of Archaeology, Tirana. For the Butrint Foundation Oliver Gilkes conducted the archaeological investigations in Saranda and supervised the student training programme as well as the Temple excavation. The student training excavations and associated teaching courses were directed by Valbona Hysa (Albanian Rescue Archaeology Unit), and Gjergj Vinjahu (University of Bologna). The excavation of the Roman Townhouse on the Vrina Plain was led



Excavating an infant grave in the Forum.

by Simon Greenslade with Sarah Leppard (both Butrint Foundation). Excavations in the Forum were directed by David Hernandez (University of Cincinnati). Matthew Logue (University of Sheffield) and Solinda Kamani (Institute of Monuments, Tirana) excavated the tower in the Western Defences. Clearance and recording of the Roman Bridge was managed by Benen Hayden (University of Plymouth). Alessandro Sebastiani (University of Siena) and Butrint National Park archaeologist Erjona Qilla led the excavations at the Well of Junia Rufina. Sarah Lima (University of Cincinnati) directed the Bronze Age research assessments at Cape Stillo and Kalivo with Ilir Gjipali. Dawn Gooney (University of Glasgow) carried out specialist excavation and exhumation of human skeletons.



GPS survey of a Hellenistic building at Maliq.

David Bescoby (University of East Anglia) undertook the electronic survey and geographic positioning work for the Project in addition to topographical reconstruc-

tions at Butrint and the Dema Wall, environmental studies on the Vrina Plain and hydrological observations across the ancient city as part of an investigation into the history of seismic events in the area. Nevila Molla (University of Siena) conducted a photogrammetric survey of selected fortifications and monuments to record their current condition and provide new archaeological interpretations. A project to examine the capabilities of a high definition laser scanner in recording historic monuments and various textured surfaces was carried out, with a separate grant from Lord Rothschild, by a team headed by Robert van de Noort (University of Exeter) and Andrew Wetherelt (Camborne School of Mines). Massimo Zanfini (University of Bologna) took aerial photographs of the Vrina Plain excavations using a kite and remote camera.

The Finds Department, based in Ksamili, was managed by David Boschi (Archaeological and Historical Conservancy Inc.) and Sabina Veseli (Institute of Archaeology, Tirana) supported by Blerina Shametaj and Amy Culwick (both Butrint Foundation). Hellenistic and Roman ceramics were studied by Paul Reynolds (University of Barcelona) aided by Emanuele Vaccaro (University of Siena). Joanita Vroom (University of Sheffield) assisted by Fotini Kondyli (University of Birmingham) and Patricia Caprino (University of Lecce) studied the post-Roman pottery. Klodiana Kondo (Albanian Rescue Archaeology Unit) studied and prepared a report on the Roman ceramics from the student training excavations on the Vrina Plain. Coin studies were undertaken by Sam Moorhead, Richard

Abdy (both British Museum), Pagona Papadopoulou (Koç University), together with Shpresa Gjongecaj (Institute of Archaeology, Tirana). Small finds were studied by John Mitchell with support from Jane Chick (both University of East Anglia) and Sarah Jennings (English Heritage) catalogued and studied the vessel, mosaic and window glass. Conservation of finds from the excavations was conducted by Pippa Pearce (British Museum). The Butrint Physical Anthropology Project was led by Todd Fenton with Jared Beatrice and Angela Soler (all Michigan State University). Faunal remains were recorded by Adrienne Powell with the support of Richard Madgwick (both University of Cardiff). The Butrint Museum stores were organised by Blerina Shametaj and David Boschi.



Hellenistic *aryballos* (perfume bottle) from the Western Defences.

Object photography, illustration and archive compilation was programmed by Inge Lyse Hansen (Butrint Foundation). Martin Smith and James Barclay-Brown

undertook the photography of all small finds and other objects from the excavations and for the Butrint Museum catalogue. Objects and ceramics were illustrated by Adelheid Heil (University of Suor Orsola Benincasa, Naples), Julia Jarrett and Patricia Caprino. The electronic archive and Integrated Archaeological Database was managed for the Butrint Foundation on a day-to-day basis by Christian Biggi.

Opening and backfilling of the mosaic pavements in the Triconch Palace was managed by Elda Omari (University of Padua) and in the Baptistery by Erjona Qilla. The Triconch mosaics were documented by John Mitchell with photography by Martin Smith and James Barclay-Brown. Massimo Zanfini undertook photogrammetric



Cleaning mosaics in the Triconch Palace.

recording of the Triconch Palace mosaics. The mosaics on the Vrina Plain were conserved by Agron Islami (Institute of Monuments, Tirana). Members of the Israel

Antiquities Authority – Jacques Neguer and Ghaleb Abu Diab – carried out condition surveys and conservation assessments of all the exposed mosaics. Vegetation management, monument conservation and the practical conservation training programme in Butrint were all led by Rene Rice (University of Plymouth) in collaboration with the Butrint National Park monuments specialist Albana Hakani.

Jerry O'Dwyer and Muzafer Laze implemented all project logistics with assistance from Matteo Laze. Arberi Mustafa was in charge of security for people and stored objects at the principal hotel and the team was magnificently catered for by Anife Laze with the support of Valbona Hoxha and Nora Xaci.

In London, the smooth running of the project was cemented by the dedication and constant support of the Butrint Foundation Administrator Alison Ferrary. Thanks too, to Diana Ndrenika of the International Centre for Albanian Archaeology in Tirana for practical advice and help. Finally, sincere thanks are extended to all the participants who collectively made the 2007 Field Projects an overwhelmingly successful and enjoyable experience.

This Interim Report was compiled and edited by Andrew Crowson. Desk top publication was undertaken by Felicity Booth. Very many thanks to all who submitted text, comments and images.



Butrint Foundation Archaeology and Conservation teams at the end of July 2007.

Archaeological Projects

Introduction

The 2007 summer excavation season was one of intense activity as the team worked long hours in exceptionally hot conditions to conclude all of the present archaeological fieldwork projects. This accomplishment was no small challenge and was achieved in part through the logistical phenomenon of recruiting, scheduling, accommodating, feeding, equipping and transporting 114 participants over the 10 weeks of the projects. In addition, more than 50 people from villages in and around the Butrint National Park were recruited to work in the excavations and a further 14 women processed pottery and objects in the Finds Department.

Period-specific themes ran through this summer's projects. Research into the 'origins' of Butrint centred on small excavations at the prehistoric sites of Cape Stillo and Kalivo and attempts to construct ceramic chronologies for the region during the later Bronze Age through to the early Iron Age.

Perhaps unsurprisingly, much of the season's work was given over to continuing investigations of Roman Butrint. The fourth year of work in the area of the Forum aimed to understand its form, when it was instituted and its relationship to the other major monumental buildings in the city's civic centre. Almost as a by-product of the vegetation management campaign, a small

clearance project was initiated around the spot where the Roman Bridge from the Vrina Plain made landfall in Butrint, marking the first time the Foundation's team has examined this important structure. The nature of the city's aqueduct was also explored at this point, dovetailing neatly with the student training excavation on the Vrina Plain on the aqueduct and Temple. The work on the Vrina Plain entered its sixth year, and included further investigation of the Augustan colonial settlement and the extensive 2nd-century AD Townhouse. In Butrint another major Roman residence, the Triconch Palace, was revisited to make a comprehensive photogrammetric record of the mosaic pavements.



Discovery of a hoard of Venetian coins in the Forum.



Complete amphora from a storeroom in the Vrina Townhouse.

Finally, in Saranda, attempts were made to locate the Roman Odeon and test for the survival of classical remains amongst the modern construction taking place in the ancient town centre.

The fate of Butrint after antiquity into the early medieval period has come under closer scrutiny in recent years. In 2007, a remarkable phase of Byzantine occupation was examined in one of the towers of the city's Western Defences. Spanning this period, two superimposed cemeteries associated with the Christianisation of a Roman cult focus were discovered during a propitious excavation at the Well of Junia Rufina. Sections of the medieval period fortifications in the lower part of the city were subjected to photogrammetric recording ahead of conservation works and other monuments were digitally captured with a high definition laser scanner.

Post-excavation research continued apace in offices and laboratories specially set up in Ksamili village. A host of Albanian and international specialists and technicians forged ahead with processing, documenting and analysing the finds from the excavations. A major effort was put into re-organising the Butrint Museum stores and compiling fresh inventories. Similarly, work on the electronic archive and Integrated Archaeological Database was prioritised to maintain pace with the excavations. Finally, during July, we launched two new publications that helped to promote Butrint and Saranda and the Foundation's on-going commitment to archaeological projects in the region.



Location of Butrint Foundation archaeological and conservation field projects 2007.



Location of archaeological and conservation projects in intramural Butrint.

Bronze Age Butrint

Intermittent small projects over the past six years have successively enhanced our understanding of the character and nature of life at Butrint and, moreover, in the southern environs of the city during the later Bronze Age. Finding material evidence (principally ceramics) of Bronze Age populations has not proved difficult, but building a chronology of this material and using it to interpret various sites and their interrelations has been more challenging. Thus the aims of the 2007 research were to develop a matrix for the data gathered thus far and to attempt to clarify the ceramic sequences through identifying stratified prehistoric archaeological deposits.

The enclosure at Shën Koll (St Nicholas) on the Cape Stillo headland was selected for further small-scale excavation and survey. Already fixed within the Foundation's regional GIS map and having produced considerable assemblages of pottery in the past, it was considered that Shën Koll represented one of the best opportunities for finding stratified remains. In conjunction, a complementary project was established for an entirely different site-type at the large Bronze Age fortification on the commanding hilltop of Kalivo. Already reasonably well-studied, Kalivo also offered strong potential for illuminating ceramic chronologies if pottery could be recovered from stratified horizons.

Cape Stillo

Shën Koll comprises a large rectangular enclosure consisting of the remains of low rough-built walls interspersed with natural rock formations. One trench was dug inside the enclosure and a further six on natural terraces on the southwestern slopes below the enclosure. The stratigraphy encountered was typically limited to thin topsoil above undifferentiated rendzina soils between 0.30-0.50 m deep overlying bedrock. The majority of trenches produced ceramics, along with a few lithics, and although the deposits appeared to be secondary, eroded contexts, some stratification of both deposits and ceramics was evident. Most importantly, diagnostic sherds of both Bronze Age and Iron Age date were recovered that will be beneficial in defining the site's chronology.



Surveying trenches on the slopes below Shën Koll.

In the hilltop trench a stone-lined pit was excavated, and alongside ceramic spindle whorls, beads and flint scrapers found at Shën Koll during 2006, we could now have good evidence for manufacture at the site. A small assemblage of faunal remains revealed the presence of dogs and consumption of domesticated cattle and sheep/goats with only a single specimen of wild-caught food (boar).

Kalivo

The prehistoric fortified site at Kalivo has been surveyed and explored successively by Italian, Russian, Albanian and British archaeologists, but the walls and interior enclosures still await definitive dating and interpretation. To attempt to address these questions, five trenches were sited within the defended area: four on natural terraces along the southern flank and an-



The fortified hill of Kalivo.



Excavation at Kalivo following a fire.

other on the hill summit. The trenches were dug through topsoil and homogeneous red-brown silts to bedrock at depths varying between 0.40-1.10 m. Significant assemblages of pottery were recovered: several examples of so-called 'imitation Corfiote ware' that appears to be attempting to mimic imported fine wares were found along with other pieces that will assist dating the fortification construction. Residues of bitumen, used inside pots as a sealant, were found and, aside from identifying these pots as storage vessels, bitumen use is a signal characteristic of the southern Albanian Bronze-Iron Age transition. Hellenistic and early Roman wares, and a few possible terracotta figurine fragments, may lend weight to earlier hypotheses of a Hellenistic temple and other structures being located on the summit of Kalivo.

Ceramic chronologies

Until such time as inclusive studies of the region's ceramic assemblages can be undertaken, it will remain difficult to speak with confidence about a unified ceramic tradition for the environs of Butrint. Poor stratification is all too often an issue with collections from eroded hilltop contexts and locally made wares, where found in isolation, have proved difficult to date satisfactorily. Traditional study parameters of form, fabric and surface treatment have not been sufficient to draw together a coherent chronology, although some good typologies do exist for decorated examples. Comparative study with material from outside the immediate region is made difficult because Albanian pottery contains many forms not present in other parts of the Mediterranean. Although there are shared forms between Greek and Albanian Palaeolithic and Neolithic sites, it is less common to find formal similarities after the Copper Age.

As a result of the Butrint Foundation's forays into the prehistoric hinterlands of Butrint, however, the future of Bronze Age ceramic studies promises to be more rewarding. A working series based on five distinct wares, two imported and three locally-produced, was established in 2006. This has been tested and refined during 2007, and new finds of diagnostic late Bronze Age and early Iron Age material will provide a baseline from which to expand future chronological studies. The apparent mimicking of recognisable fineware imports also provides a chronological toe-hold. Already we can see the use of a common clay source for the local products with different forms of surface treatment corresponding to different intended uses; their composition is echoed in certain locally made Roman ceramics and the work on the prehistoric assemblages may benefit our understanding of the development of local craft industries much later in the history of the region.



Establishing chronologies: Bronze Age ceramics from Kalivo, one with bitumen residue.

Roman Butrint

The Forum

Two years ago, the Butrint Foundation team discovered the northwest side of the Roman Forum – the administrative, commercial, and religious heart of the ancient city. The task during 2007 was to determine the Forum's topographical layout and chronological development. In the event, the southwest corner of the Forum was exposed, revealing that the pavement covered an area of 20 m north–south by an estimated 45 m east–west. The size of the Forum, and indeed the revelation that it is oriented east–west rather than as had been assumed north–south, has altered our perspective of the urban plan and scale of the Roman city.



The southwest corner of the Roman Forum.

The Forum pavement consists of fine limestone slabs surrounded by a perimeter gutter leading up to two marble steps. The steps along the south side led directly into a building fronted by granite columns. The architecture suggests that the building may have functioned as a basilica, which would have housed legal and civic offices. In front of the conjectural basilica, a fine marble moulding for a statue base was found straddling the gutter, probably one of many that were originally located along the Forum's outer limits.



Statue base moulding over the Forum gutter.

The west side of the Forum was originally defined by a roadway that allowed access from the waterfront to the theatre area. By the 2nd century AD, the road was constrained by the construction of the Peristyle Building that included a long portico along the western side of the Forum. The Tripartite Building on the northwest side of the Forum can be interpreted as three shrines – one



Flight of marble steps at the north end of the Forum.

of which was dedicated to Minerva Augusta. To the east of the three rooms, a lofty flight of (perhaps originally 22) marble steps led up from the Forum pavement to an elevated terrace, and presumably to an important Roman building. The topography of the Forum indicates that this building was located opposite the proposed southern entrance and constituted a central architectural and visual focus of the Forum.

Despite the demolition of an extensive tract of the Hellenistic city wall at this point it seems likely that the Roman Forum was incorporated into an existing agora. Pre-Roman material is prevalent in the excavation assemblages and, aside from Hellenistic ceramics, over the past four years 38 coins of the 3rd-2nd centuries

BC have been found in the Butrint Foundation excavations at the Forum, including 13 each from Corfu and the Epirote Republic and an Alexander the Great forgery.

The archaeological evidence from 2007 appears to demonstrate that the institution of the Forum and other associated Roman buildings occurred in the late Republican period. Thus, the essential design of the city – the construction of the Forum, basilica, shrines as well as the aqueduct – can be seen in the light of the grant of colonial status in the triumviral period and under the Emperor Augustus. The programmed investment and accompanying changes to the urban fabric of the city suggested by the 2007 excavations are characteristic of Roman colonial re-foundations. A cast mosaic fragment found in the Forum would have been made in Italy, and attests further to the wealth and contacts of the inhabitants of Butrint in the Augustan period.



Photogrammetric image of a podium at the north end of the Forum.

Butrint had its own mint between 44 BC and AD 68. Ten examples have been found in Butrint Foundation excavations including a likely new type of Claudian date depicting a complex scene of Artemis/Diana in a chariot with a smaller male personification above. Another new coin type is a later Hadrianic issue from Nicopolis. As the Forum coin assemblage is typically of low denomination local issues, the lack of any coins from nearby Phoenice datable between the Neronian and Trajanic periods when its mint revives is perhaps surprising.



Amongst the faunal remains from the site, the most thought-provoking discovery is the identification of an ulna from an adult brown bear. This is only the second specimen of bear to be identified from the Butrint Foundation's projects and, unlike a metacarpal from Diaporit that exhibits a cut mark and was probably part of a skin, the Forum specimen suggests the live animal was present since no butchery marks were visible. Dancing bears had a long history in the Greco-Roman world, but captive bears were also used in other forms of entertainment such as beast hunts or criminal executions.



Glass bird (top of a lid) fragment from a 6th-7th-century deposit and a fragment of 2nd-3rd-century decorated glass from the Forum excavations.

Another noteworthy find from an earlier Roman deposit is a long, beautifully fashioned bronze handle of a fine iron scalpel, with a narrow lanceolate upper shaft terminating in a little sphere. The tang of the iron blade is preserved, soldered into a narrow split socket. This object may be a medical instrument and is the second such find following one from the Vrina Plain excavations, which itself has recently been paralleled with examples from Pompeii and the Roman port at Tartus on the Syrian coast.

One of the most surprising results from the excavation is that the Forum pavement is inclined by 0.50 m from south to north. It is unlikely that this is an original feature of the Forum and so must be the result of displacement through either subsidence or seismic activity; current environmental interpretations favour the latter scenario. This event took place during the late 3rd or early 4th century and resulted in a rapid inundation of the Forum, which then effectively became a pond in the centre of the ancient city. Now partially sub-

merged, it is evident from numerous architectural fragments that the buildings lining the Forum were despoiled and demolished. The tectonic event affecting central Butrint may help explain why the city's religious centre shifted to the more elevated east side of Butrint during late antiquity, around the Great Basilica and Baptistery.



2nd-century ceramic gladiator's head from the Forum excavations.

In the late 5th or 6th century, however, the Forum area was re-occupied. A structure with a large apse was erected in the southern area of the Forum and hard *cocciopesto* floors were laid to combat water intrusion during seasonal flooding episodes. This building and other late antique structures were cleared in a wide scale redevelopment of the city in the 10th or 11th century, where stepped terraces were established for ten-

ement buildings. The Forum has yielded a number of Middle Byzantine coins, two of which, dated to the 10th-11th centuries, were found in terrace walls, thereby dating this construction phase. Associated ceramic finds of the 10th-11th and 11th-12th centuries support this emerging picture. An unusual glass bird fragment was also found and all the indications suggest that it belongs to a well-known group attributed to Egyptian or Syrian manufacture during the 9th-12th centuries.



14th-16th-century stone mould from the Forum excavations.

Late medieval ceramics of the 13th-14th centuries and a few dated to the Venetian period (15th-16th centuries) indicate that the area remained more or less under continuous occupation until the attested abandonment of the city by the Venetians in 1572. The most significant find of the later period was discovered concealed within the wall of a simple domestic building: a 14th-century coin hoard, consisting of 15 Venetian *torneselli*. The *torneselli*, base silver coins of the 14th-15th centuries, were minted by Venice specifically for its

Eastern colonies. Although the Forum hoard deposited around 1400 – the last coins being of Doge Antonio Venerio (1382-1400) – cannot be associated with a particular event that would have led to its concealment, it coincides with the renewed interest of Venice in Butrint after its annexation to the Serenissima under Venerio in 1386. The Forum hoard adds testimony not only to the history of Venetian Butrint, but also to the study of the circulation of Venetian coinage in the eastern Mediterranean, a field for which Albania constitutes a *terra incognita*.

The 2007 excavations also produced a range of significant sculptural fragments, adding to our knowledge of the adornment of the area whilst revealing two distinct phases of dismantling, destruction and discarding of statuary: firstly, in the

mid-late 3rd century AD, a phase to which the life-size marble togate Roman statue unearthed in 2005 belongs; and secondly, during the period of urban revival and landscaping of the 10th-11th centuries.

A fragment of another life-sized male figure with shoulder drapery was found in the 2007 excavations. It suggests an heroic nude statue of a type used for generals

and certain deities. A female deity, such as Artemis/Diana or Athena/Minerva, may also be represented by the fragment of an arm clothed in a sleeve of fine fabric. Furthermore, two under life-sized parts of nude male legs again indicate the presence of statues of deities or heroes. Both are finely muscular and could have stood in architectural facades or public spaces in or around the Forum. The presence of a bronze figure in the vicinity of the Forum is indicated by a marble statue base with a mortise and tenon attachment to secure the statue.



Tornesello of Doge Antonio Venerio (1382-1400) (obverse and reverse) from the Venetian coin hoard found in the Forum excavations.

The Forum excavation remains the one location in Butrint capable of telling the full story of urban settlement in the city through its remarkable stratigraphic record and rich deposits of ceramics and objects. As a direct result of this season's work many of the monuments and buildings uncovered in Butrint over the past 70 years can now be re-appraised and understood within the broader context provided by the Forum. The discovery of the southern limit of the Forum has illuminated not only the urban design of the Roman city, but also the economic, political, and social transformations of this Mediterranean port.

The Bridge

The existence of a Roman bridge at Butrint, crossing the Vivari Channel to the Vrina Plain, has been known since Luigi Ugolini's archaeological mission noted it in the 1920s. In 2000, an underwater survey by a Texas A&M University team from College Station, Texas glimpsed chunks of masonry in the thick silt at the bottom: remnants of piers and perhaps collapsed sections of the Bridge. The Bridge was clearly a substantial structure, at least at its western landward terminus where a large masonry chunk survives on the north-east side of the medieval Water Gate. The Bridge would have carried the road recorded by the Student Training Programme excavations in front of the Vrina Plain Temple. On the eastern bank, however, neither the Bridge nor the road is traceable for c. 200 m, not appearing in field survey, geophysics or trial trenches.

With impetus gained from the Butrint Foundation's vegetation management programme on the city's lower defensive wall circuit, a small project was initiated to clean and record the remains of the Bridge and adjacent structures including the stumps of aqueduct piers northeast of the Water Gate. Dovetailing with the clearance and conservation of the Water Gate, new paths were created to view both the Bridge and fortifications.

A dense, almost impenetrable mass of tangled undergrowth and trees was removed from the Park footpath adjacent to the Nymphaeum (the subject of Butrint Foundation conservation in 2006) as far as the water's

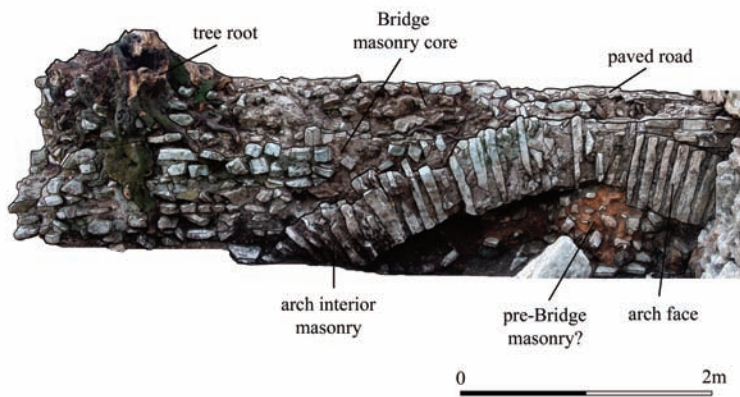
edge. The bridge itself was entirely engulfed by a thick mat of roots and tree stumps; some of these were allowed to remain to decay *in situ* for conservation reasons. The area in front of the Bridge was cleared to expose a collapsed bridge arch. A thick deposit of riverine and wind-blown silt was removed from all sides of the Bridge masonry to leave it as a 'new' upstanding monument on Butrint's visitor trails.



The first span of the Roman Bridge showing the paved surface.

The freshly exposed area was manually recorded and photographed for the first time by the Butrint Foundation. The area was also recorded electronically with a total station theodolite to place it within our evolving understanding of the organisation of Roman Butrint and the suburb on the Vrina Plain. The photogrammetry project being undertaken on the eastern fortifications

became increasingly relevant to the Bridge as our appreciation of the wall phasing in the area became more refined, and a photogrammetric record of both elevations was duly made. Finally, the Bridge was subject to a complete digital scan by a team from the University of Exeter using a high definition laser scanner to produce a three dimensional model of the Bridge and adjacent structures.



Photogrammetric interpretation of the Bridge.

The remaining structure was impressive, as what had seemed at first to be a single block of mortared masonry, perhaps the ramp leading up to the Bridge, turned out to incorporate the initial span of the Bridge with its vault largely intact. The arch was exposed down to the waterline, and this will be invaluable in reconstructing the original size and form of the Roman Bridge. Though rather crumbled, some elements of the outer face of the arch survived *in situ*. The facing stones were well crafted long, thin limestone slabs.

A section of smooth stone paving was uncovered on the top of the Bridge; this is thought to be the original road surface, although rougher, later repairs were also identified. The road disappears to the west beneath later walls and medieval rooms attached to the Water Gate, but reappears at a lower level in a more monumental form beside the Nymphaeum. From the assembled evidence it is now apparent that the Bridge measured at least 6.50 m across, sufficiently wide to permit wheeled vehicles over the Vivari. Out in the channel, a wooden section, perhaps even with a lifting bridge, seem plausible fixtures to admit larger vessels into Lake Butrint.

The work around the Bridge should also lead us to a greater appreciation of how Butrint received its water and how in turn this water was distributed within the city. Coins struck at Butrint during the times of Augustus and Nero show what appears to be an aqueduct-like structure atop a bridge, or a double-tiered bridge. As no traces of such an elaborate structure were found in 2007, it may be prudent to speculate that the coins



Coin of Augustus minted at Butrint showing possible bridge and aqueduct (after Ugolini).

are depicting something less grand than a second set of masonry piers: perhaps, instead, they show a series of suspended ceramic or lead tubes for carrying water. Although bridges carrying aqueducts were built frequently in the Roman world, these were generally viaducts with an upper arcade for the aqueduct channel. The Butrint example appears less common, although the crossing of the Guadiana river at Mérida in southwest Spain is a respectable parallel for the bridge.

In addition to clearing the Bridge itself, several old trenches dug over the brick aqueduct piers, which lead from the Bridge to the Nymphaeum, were re-opened and re-recorded to examine in conjunction with those exposed on the Vrina Plain. From the position of the great water cistern or header tank on the plain it is clear that the aqueduct traversed the channel on the northern side of the Bridge; the aqueduct piers by the Water Gate, however, lie on the southern side of the Bridge. It appears then that the aqueduct must have crossed over the road at a point close to where the Bridge entered the city. This crossing may have been facilitated by a small arch.

The aqueduct piers inside the city are smaller than those on the Vrina Plain and are constructed of brick, not alternate courses of brick and stone blocks. This may be explained if the piers built to the Nymphaeum were carrying a smaller volume of water, *i.e.* if they were an offshoot from the main aqueduct that didn't cross the road, but continued to a cistern by the bathhouse now underlying the Great Basilica.

We know from excavations on the Vrina Plain that the aqueduct was out of use by the 4th century, but at the Butrint end we can now see that the Bridge itself remained in use for considerably longer. Removal of silt on the northern side of the Bridge exposed a wall abutting it. In all likelihood this wall is part of the late antique (c. AD 475) fortification circuit and, though defensive in nature, the circuit evidently retained the Bridge in use.

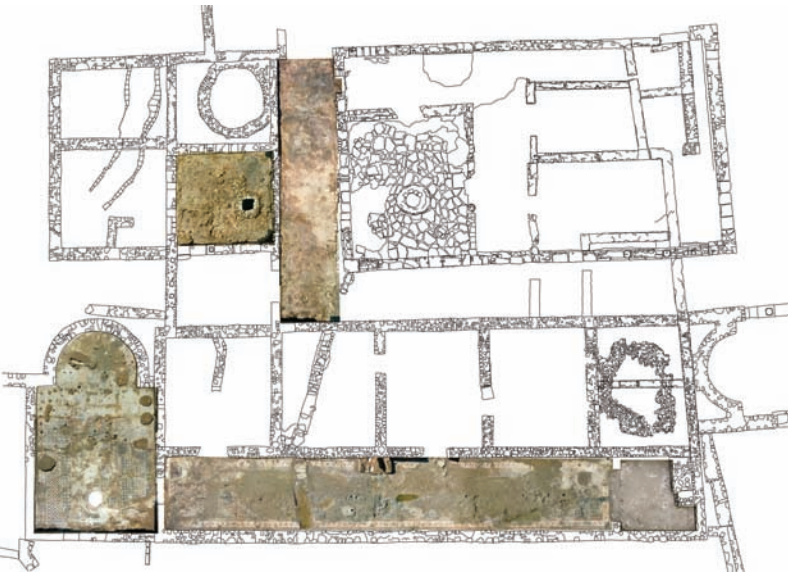


The Bridge, abutting late antique masonry and 10th-century wall.

The carriageway remained open until a wall was built across its surface, thereby closing the opening through the late antique enceinte. Though apparently poorly built, this orthostat wall is itself important to our understanding of Butrint in the Middle Byzantine period. Comprised of large reclaimed limestone blocks with smaller stones fitted in and around, it is highly characteristic of walls discovered in parts of the city during the past two seasons that can be dated to the 10th century. The 10th century is increasingly being seen as a period of considerable redevelopment within the ancient city, and it remains to be ascertained whether the wall blocking the Bridge is actually part of a new enclosure built around the Great Basilica.

The Triconch Palace mosaics

Excavated and recorded piecemeal between 1994 and 2003, the mosaics in the rooms of the Triconch Palace required a more cohesive assessment before they could be included in the monograph publication of the excavations currently in preparation. Under a new initiative in 2007, all four pavements were re-opened, cleaned and documented prior to being assessed for future conservation needs and re-covered with conservation-standard netting and sand.



Photogrammetric plan of mosaic pavements in the Triconch Palace.

The mosaics in question, namely those in the long southern gallery, the southwest apsidal *triclinium*, the old western entrance vestibule and the western range of the central peristyle court, were first subject to a definitive photogrammetric and photographic record. Using a surveyed grid of marked points and an extended camera boom to obtain vertical views, composite tessellated images of each room were built up. This record was complemented with a new sequence of human-view-point and detailed images of the pavements. Uncovering all the mosaics together also provided the first opportunity to reassess the material composition, technique and imagery of the various pavements in specific relation to each other.

A new and exciting discovery was made in the eastern vestibule of the long southern gallery. Here, part of a later mortar floor or spread was delicately removed from the pavement for the first time revealing striking images of male and female theatrical masks relating to New Comedy (a dramatic style originating in Greece from c. 320-250 BC). Two other panels probably remain concealed beneath the mortar. The mosaic here had always been known to be of exceptional quality, with tesserae averaging only 4 mm in size, the work of a master using a colour range and skill that is not found elsewhere in Butrint. This find affirms the interpretation that the small vestibule was used by distinguished guests and was the main entrance to the property during the 3rd and 4th centuries.





Mosaic panels of male and female theatrical masks relating to New Comedy, found in the Triconch Palace southern gallery.

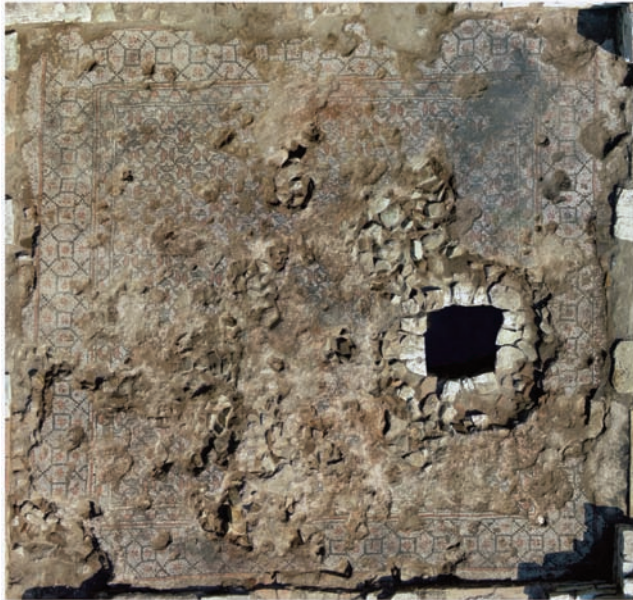
The two new masks are being viewed in conjunction with another, if later, female dramatic mask located in the focus of the apse of the *triclinium* at the west end of the gallery. Taken together, it seems that this section of the house had a distinct theme associated with it. Moreover, the masks demonstrate most effectively the way in which the owners of the house through time used the most visible public spaces in their property to display their cultural aspirations. As can sometimes be seen in Roman wall paintings, the panels would communicate ideals of Hellenic culture, literature and elite discourse to similarly educated or cultured viewers. By

contrast, in the principal entrance vestibule of a later, 4th-century addition to the building, a plainer pavement carries an inscription in Greek emphatically declaring the owner's name and social station and clearly intended to impress lower ranking visitors and lesser clients.

In addition to the documentation, a small trench through a damaged (missing) area of the mosaic of the western peristyle provided conclusive ceramic evidence for dating this pavement and the penultimate phase of the building to the years around AD 400. By



chance the trench also produced a remarkable architectural stone fragment carved with the motif of two pomegranates on a stalk, in low flat relief in a framed field. This appears to be from the display front of a table or podium, or possibly from the front of a semi-circular dining couch, a so-called *stibadium*, from an earlier 4th-century phase of the house. The object provides a striking parallel to the magnificent *stibadium* with a front set with shaped polychrome marble and figural reliefs, in a dining room equipped around 400, in a recently discovered luxurious late Roman villa at Faragola in northern Apulia.



Photogrammetric image of the mosaic pavement in the western entrance vestibule of the Triconch Palace.



Photogrammetric image of the mosaic pavements in the apsidal *triclinium* of the Triconch Palace.



The Vrina Plain Temple: Student Training Programme

Over the past three years, Albanian alumni of the Butrint Foundation's Student Training Programme have been handed increasing degrees of control over the project. This year, for the first time, the practical teaching and the direction of the training excavation, as well as practical logistics and pastoral care, were placed entirely in the hands of two experienced alumni. The manifest ability of the instructors and their efficient and thorough management of the students marked the training programme out as one of the true success stories of the season.

Fourteen Albanian students were recruited for the training school from the universities of Tirana, Gjirokastra and Elbasan. As in previous years, the programme began with instruction on basic field techniques – excavation, written recording, scale drawing and surveying – but this year elements on finds processing, standing building survey and monument conservation were included. The teaching of these aspects involved other members of the project team, and wherever possible Albanian participants, including staff from the Butrint National Park, the International Centre for Albanian Archaeology as well as the Foundation's own specialist staff. These short courses are seen as an important development in the training school programme to increase awareness of post-excavation requirements and to give a flavour of closely related archaeology-based disciplines, particularly at a time when



Student Training Programme: Roman ceramics identification and recording course.

institutional and structural changes are affecting Albanian archaeology.

All of the students received a comprehensive field training manual to accompany the practical course, and were presented with certificates of attendance upon completion of the programme. The Butrint Foundation's field training school remains as the foremost course in the country for Albanian archaeology students to gain experience of contemporary techniques and practices. Two graduates now working for the International Centre of Albanian Archaeology will plan and structure the field training course at Butrint for the summer of 2008.

This season's programme was based at the Temple on the Vrina Plain, which has been excavated by experienced Albanian students since 2005. Two years ago it was readily identified as a small Italic-style temple, possibly a *heroon*, and we have recently been able to parallel the building with strikingly similar examples from in



Aerial view of the Student Training Programme excavations on the Vrina Plain Temple and aqueduct.

and around Nicopolis as a mausoleum temple. Its position adjacent to the principal road to Butrint from the south marks it as a high-status structure.

The student team was divided into two groups and pursued excavations to the west of the Temple on the Roman road (which to the north was carried by the Bridge to Butrint) and the structures opposite the Temple entrance, and to the east (rear) of the Temple around the aqueduct. The road surface was completely exposed and examination clarified three principal phases of use. In the later 1st or 2nd century AD a finely constructed surface of large stone blocks was laid. A new surface including debris from the partly-demolished Temple was built, probably in the 3rd century, and continued to be used into late antiquity. Finally, the

collapse of buildings flanking either side of the road brought about a build-up of banks, thereby forming a small lane or hollow-way that perpetuated the line of the road into the Middle Ages. Paralleling the evidence recorded at the Roman Bridge assessment in Butrint, it is interesting to note that the principal road into the city continued in use long after the aqueduct was ruined.

The complex of buildings west of the road was partly excavated in 2006. Further work this year revealed that the road was fronted by a stone flagged pavement, a portico consisting of a series of stone piers and a probable entrance to an area (as yet to be defined) to the west; interpretations of geophysical data for the vicinity west of the portico reveal a large open, apparently undeveloped area.

The excavation to the east of the Temple was designed to record the relationship between the building and two piers of the aqueduct a few metres further east. Much of the archaeological sequence here consisted of vast quantities of masonry rubble from the fallen rear wall of the Temple. The wall, it appears, had been deliberately undermined and demolished for its fine stonework in the 6th century, a time when other buildings on the Vrina Plain were also robbed. The falling wall had struck an adjacent arch of the still standing (though redundant) aqueduct and brought this down with it.

One of the most important results of the student excavations was the confirmation – for the first time through excavation – of a colonial-era date for the construction of the aqueduct. The foundations of the aqueduct piers were cut through a levelling deposit containing crushed

Tripolitanian amphorae of Augustan date. Furthermore, previously recorded deposits with similar characteristics were cut by the monumental tomb in the necropolis to the east and by the so-called monuments a short distance to the north. With this in mind, it can now be proposed that the Roman organisation of the Vrina Plain landscape, its centuriation, required an enormous levelling operation over an extensive area to prepare the ground.

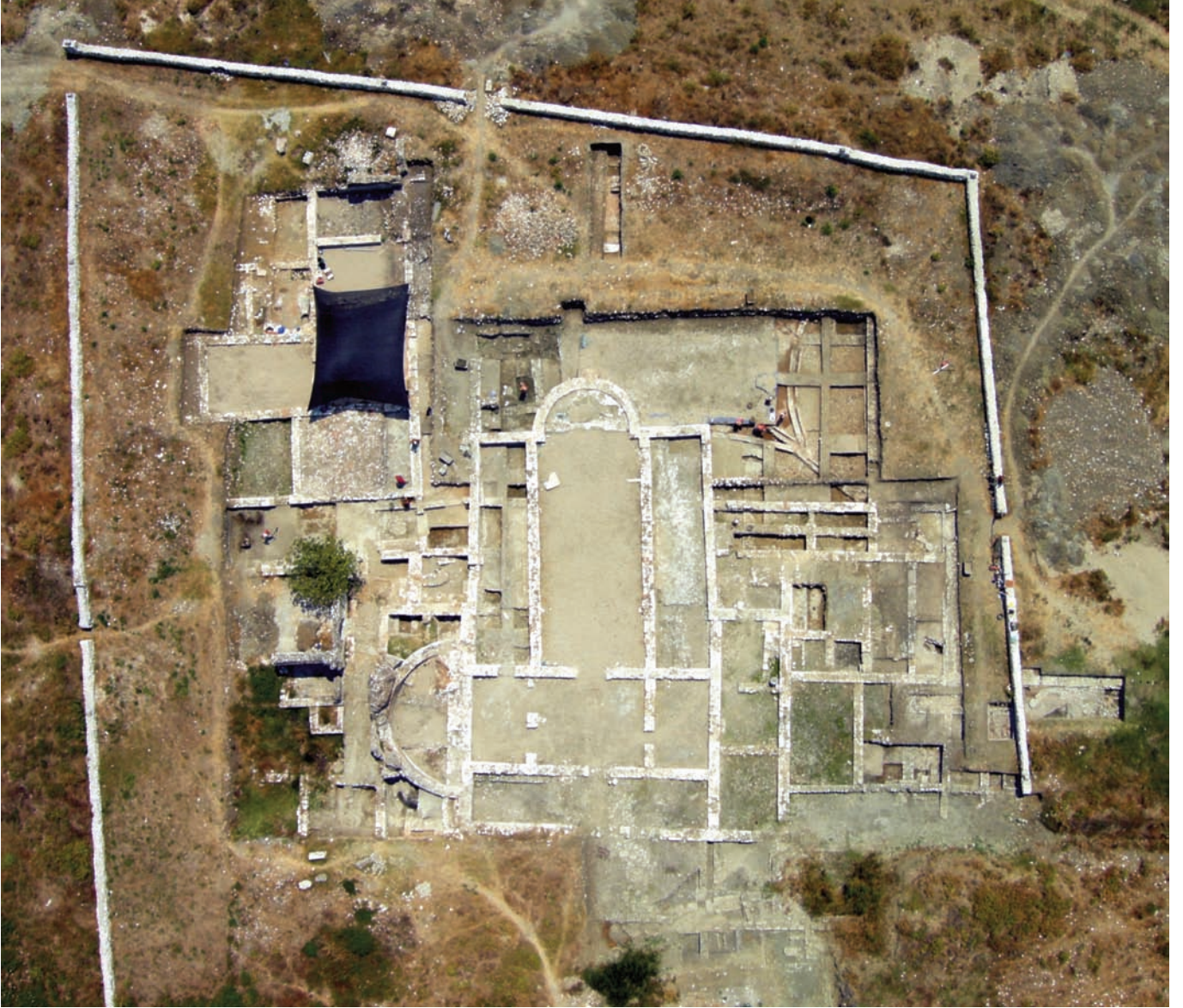
The most interesting finds from the Temple excavations all dated broadly to the Roman period. These included: an elegantly profiled bronze base, possibly from the bronze statuette of one of the Lares, the protective spirits of a household; a bone gaming piece; and two fragments of a commemorative inscription in Greek capital letters.



Student Training Programme excavation on the Roman road.



Student Training Programme excavation on the aqueduct.



Aerial view of the excavations of the Vrina Plain Roman Townhouse and later Basilica.
The black area is shade netting for the mosaic pavement conservation programme.

The Vrina Plain Townhouse

Excavations at the Vrina Plain Townhouse and later 5th-century Basilica were limited in scale in 2007, but great strides were made in the post-excavation analysis of materials, notably the studies of the human skeletons, the glass, the medieval ceramics and the coin assemblages. With excavation of the later Basilica largely complete, fieldwork focused on the Roman residential complex, attempting to determine and interpret the ground plan of the many buildings and to further define its complicated evolution and phasing.

Throughout the long-running excavations on the Townhouse precious little has been found that could reliably date the earliest occupation of the site due largely to high groundwater curtailing trench depths. A combined total of 15 pre-Augustan coins from all of the Vrina Plain excavations indicates the likelihood of pre-colonial period settlement here. However, under more favourable conditions in 2007, a nucleus of buildings found beneath the Townhouse may finally provide evidence of the first signs of development of a small urban centre at this point during the early Roman period. Parts of stratigraphically early structures were found in three locations in the southern part of the open area, including one rough-built building dated with some confidence to the mid 1st century AD. Other, well-built structures were found including a series of rooms and mortar floors in association with a cobbled yard. Another building looked out on to the contemporary waterfront on the west side of the settlement. Additional

environmental assessment in 2007 has also refined our vision of this waterfront: instead of a river channel defining the settlement edge, it is now apparent that more open water conditions prevailed.

By the late 1st century AD the character of the urban core seems to have changed dramatically: it appears that the disparate buildings were brought under single, consolidated ownership. The early buildings were



Early-mid 1st-century AD cobbled yard and 3rd-century AD ornamental pool and drains.

either knocked down, some being cleared to make way for a new courtyard, or else incorporated within the ground plan of a large luxury townhouse complex, such as those preserved on the west side of the new courtyard.

Beyond the principal open area excavation a series of satellite trenches were targeted to locate buried features identified from geophysics results. Each opened a new window on the layout and morphology of the Roman residence. The southern portico of the Townhouse peristyle was located along with the remains of a building paved with a fine mosaic, which appears to have fronted a second courtyard that can be detected in the geophysics results. In addition, parts of a bathhouse first recorded in a trial trench in 2001 were reopened and seen to be built close to the ancient waterfront. The bathhouse and courtyard also gave a glimpse into the later use of the area; a series of regularly spaced trenches cut through the floor surfaces relate to the growing of grape vines associated with either late antique or medieval re-use of the complex.

Within the peristyle, the residence's large ornamental double fountain, or pool, was fully uncovered. The feature comprises a rectangular pool set within another, larger pool with concave sides. The arrangement of drains indicates that the central pool outlived the outer one to become the sole focus of the courtyard. In the northwest corner of the complex a remarkable octagonal building, possibly a tower, was located, which would have afforded striking views to Butrint and Corfu.

East of the courtyard, just to the south of the main entrance to the Townhouse, a storeroom with its own broad entrance was investigated. A stratigraphically late floor was partly removed revealing numerous large intact 2nd-3rd-century amphorae. This was an extraordinary find, the collection of ceramic vessels representing a well-stocked store that was apparently abandoned, the vessels having been simply sealed over. Ten amphorae were recovered, with many more visible protruding through the floor surface. The assemblage included wine amphorae from southern Italy and an example from Portugal that had contained *garum* (a popular fish sauce).



Intact 2nd-3rd-century AD amphorae excavated from a storeroom in the Vrina Plain Townhouse.



Fragments of marble inscriptions from the Vrina Plain Townhouse excavations.

The amphorae are strong indicators of the economic links and purchasing power of the owners of the Townhouse, and were brought into the residence during what appears to be a period of some prosperity. Although coins from the 2nd-3rd centuries have not been found in great numbers, with only 42 examples of this date from Vrina Plain as a whole, it appears that glass was in abundant use here. This contrasts with assemblages from Butrint where glass of this period is poorly represented. The significance of the ingots and chunks of raw glass for making mosaic tesserae found here in previous years are now beginning to attract international attention. It remains to be established, however, whether these materials date to the affluent period of the 2nd and 3rd centuries.

Coin finds are becoming increasingly important to our interpretations of the Townhouse. Patterns of coin loss

may be able to tell us much about the later use of the site and its transformation through late antique basilica to Byzantine administrative centre. For example, there is an abundance of coins from the Vrina Plain dated to the mid 4th to the end of the 5th centuries, almost none from 500 until 820, and thereafter a most extraordinary sequence of early medieval coinage. There is an early reappearance of coins after the Dark Age *vacuum*, with three Syracusan copper *folles* of Michael II (820-829), Theophilus (829-842) and Michael III (842-867); an abundance of coins of Leo VI (886-912); continuation of the sequence with great quantities of 10th and 11th-century *folles* accompanied by lead seals of the late 9th-10th centuries. This sigillographic and numismatic evidence offers a case study for the organization of a small administrative centre of the periphery and the measures, such as the provisioning in circulating medium, taken for it by the imperial administration.

The medieval pottery assemblages provide good corroboration for the numismatic evidence. The majority of the post-Roman ceramics from the Vrina Plain comprise early medieval coarsewares (8th-9th centuries and 9th-10th centuries) and amphorae and coarsewares of the middle Byzantine period (among them many amphora fragments from Apulia in southern Italy of the 10th-11th and 11th-12th centuries). Only a handful of ceramic pieces can be dated to later than this, such as a collection of sherds of painted tableware from southern Italy of the mid-13th to mid-14th centuries, as well as a few *sgraffito* fragments of the early Venetian period (15th-16th centuries).

Twenty-two individual human skeletons have now been documented from the Vrina Plain excavations, predominantly originating from the two (late antique and early medieval) Townhouse/Basilica site cemeteries. Contextual analysis of the human remains in conjunction with the coins, ceramics and glass is still to be completed in order to define the burial phases more thoroughly and a programme of radiocarbon dating on selected skeletal material is being considered to assist this process. Bone samples have also been taken for DNA analysis to complement the familial relatedness research project developed for the human skeletons from the Triconch Palace.

Ageing and sexing of the skeletons formed part of the metrical and palaeopathological analyses to generate complete skeletal and dental inventories and establish a demographic profile of the interred Vrina Plain popu-

lation. Eighteen of the skeletons are of adults, with only four sub-adults present, and ages at death most frequently recorded between 20-30 years. There is a predominance of males (14) over females (four). Palaeopathological analysis of the Vrina Plain skeletons revealed vertebral lesions consistent with brucellosis in a few individuals. A significant number of individuals also exhibit porotic hyperostosis and/or cribra orbitalia, conditions that reflect the presence of anaemia.



Adult inhumation from the Vrina Plain Townhouse excavations.

Animal bone from the Vrina Plain excavations belongs largely, as with the other Butrint assemblages, to the main domestic mammals although sheep and goat are more prevalent here than elsewhere. Dog, cat and equid (both ass and horse) also occur and some of the equid bones exhibit possible butchery marks. Wild animals present include red, fallow and roe deer along with wild boar, some possible badger specimens and a hedgehog. Exploitation of marine and lacustrine resources is evidenced by mollusc shells and a few specimens of fish bone; molluscs are predominantly mussel, but include the thorny oyster, cockle and murex and numerous specimens of the Roman snail.

The Saranda Odeon

Saranda plays a vital role in any attempt to develop and preserve Butrint as it is the principal gateway to the site both from the Albanian interior and from the Greek island of Corfu. The town has undergone intensive and highly destructive development since 1992 with large new apartment blocks and commercial premises being erected with little structured planning enforcement or thought to the impact on the remains of the ancient city of *Onchesmos*. Excavations of the 1980s exposed a synagogue and Christian basilica complex which are now displayed in the town centre, but the remains of the odeon of the ancient town were reported as being destroyed by a high-rise development in the late 1990s.

An opportunity arose this year to undertake a small excavation in the vicinity of the supposed site of the odeon. The occasion was thus taken to investigate the possibility of survival of archaeological deposits in the centre of the town.



Rubbish and vegetation at the Saranda Odeon excavation site.

A single small trench was dug to the rear of Saranda town hall where there is an open car park close to the site of the odeon. Extensive deposits of modern rubbish were removed including domestic refuse and a number of (empty) AK47 magazines from the disturbances of 1997. Below this earlier levels of the town were exposed, including the substantial foundations of a large house of the early 20th century. The foundations cut yet earlier deposits and a number of *in situ* archaeological layers were identified which contained late antique and Roman period ceramics.



Excavating recent deposits at the Saranda Odeon site.

The excavation was stopped when it became clear that the archaeological levels here were relatively intact and that there was probably a high degree of survival over the whole of the area of the car park. The fieldwork was concluded by recording a section of Saranda's late antique city wall that had been exposed by the building of another new structure to the south.

At first it seemed clear that the archaeological sequence here paralleled that found at the synagogue with occupation apparently ceasing in the later 6th century. However, detailed examination of the ceramics identified a substantial element in the assemblage as being of early medieval date, 9th or 10th century, thus re-opening the question of the nature of *Onchesmos* after the end of antiquity. These ceramics were matched by the pottery of 'Slavic' type found at the synagogue site in the 1980s (in reality a far more diffuse collection of early medieval pottery) and material recovered from Butrint.



Survival of *in situ* antique archaeological deposits at Saranda.

The most important aspect of this limited investigation has been to demonstrate the potential remaining in the archaeological horizons buried beneath modern Saranda. Not only do evidently useful antique deposits survive *in situ*, but the data they hold may shed fresh light on the transformation of the classical world into the Middle Ages if appropriate new rescue excavations were undertaken.

One final element of the Saranda project was the surprise rediscovery of a large Roman cistern overlooking the town's seafront. Although this enormous and impressive structure had been studied in the 1980s, it was believed to have been lost during the building of a new hotel complex. The cistern had in fact been well preserved by the development, and was found intact and standing up to 3 m high in the basement of the hotel bar where it served as a feature of the complex. While the destruction of its context is to be lamented, the fact of its survival in an imaginative development shows potential for the preservation of Saranda's classical heritage in co-existence with the demands of modern urban renewal.



Roman cistern incorporated into a modern bar in Saranda.

Dark Age and medieval Butrint

The Western Defences

The so-called 'Western Defences', built over and incorporating earlier Roman structures, formed part of the late antique fortification network of Butrint and fore-guarded the ancient city core and acropolis from the landward approach. The fortification originally consisted of three towers joined by sections of wall that extended to the shore of the Vivari Channel to the south and linked to the Hellenistic walls in the north. A second, parallel wall to the north combined to form a narrow *proteichisma* (outer fortification). Excavation of the northernmost tower, begun in 2004 as part of an aborted plan to create a new entrance to the archaeological site, was concluded this summer and has allowed an unparalleled insight into the archaeology and history of the 8th and 9th centuries, the most elusive of all periods in modern Mediterranean research.

Aside from a few stray pottery sherds and a single Roman coin, the earliest finds from the lower deposits within the tower date from around the period of its construction and first use. The general absence of earlier material indicates that existing Roman buildings affected by the line of the new fortifications were thoroughly dismantled and the ground well cleared. Thus, the bulk of the Roman coins from the site date to the late 5th century, with a couple from the later 6th century, and the Roman ceramic assemblage is dominated by material dated from the late 5th century through to

the mid-6th century. The coins include a cast example of c. 450-75 that has parallels in Egypt, Palestine and Beirut; other examples of these coins have been found in the Triconch Palace and on the Vrina Plain. Only two post-Roman coins were found in the tower, the latest one from the reign of Phocas (602-610). The dearth of later coinage is unsurprising since Butrint belongs to the numerous Byzantine sites that share a total absence of coins from the 7th to the 9th centuries, known as the "*grande brèche*". Neither is there much other material evidence for the occupation of the tower during the greater part of this period.



Excavation of a tower in the Western Defences.

However, it is clear from this year's work that the tower remained in good order and was presumably used and maintained in some form until around the turn of the 9th century. The excavation focused on an earthen floor – the ground floor storeroom of residents living on an upper storey with access gained from a staircase outside the tower. Remains of animal bones from the floor inform us that the residents' diet included plenty of sheep, goat and wild-caught deer and boar. The floor and the contents of the store were sealed beneath a collapsed upper floor of shattered 5th-century paving and roof tiles and carbonised joist timbers. The collapse of the floor above was clearly the result of a catastrophic fire, an event dated by radiocarbon analysis of the remains to c. AD 800.

In the centre of the beaten earth floor was a simple hearth, next to which a portable oven, or 'chafing dish',

had been found in 2004. Just inside the door, in front of the hearth, were two groups of stores, both truly remarkable and unparalleled in the southern Adriatic. To the right lay a collection of glass, probably stored in a wooden crate indicated by fittings of shaped fine iron sheet straps. The assemblage included at least 60 thin-stemmed late-style wine goblets, window glass, fragments of late Roman vessels and a lump of opaque green glass. This large deposit of mixed glass fragments bears many of the hallmarks of a collection intended for recycling as cullet – an extraordinarily precious consignment destined for a glass maker to melt down for new vessels. As a group it is tremendously important since collections of glass from well dated and securely stratified contexts of this date are rare, and it provides exceptional evidence for the end date of a common drinking vessel form in the Mediterranean and the transition to later styles of wine glass.



Wine goblet stems from the stores in the Western Defences excavation.



Store of ceramic vessels found *in situ* in the Western Defences.

Alongside the glass was an improbable assemblage of ceramic vessels. This included: two tall decorated locally produced pots of the regional Slavic tradition; a brightly painted amphora and bowl from Apulia; and thin, white-walled tableware from Constantinople. A tiny black-painted 3rd-century BC *aryballos* (perfume bottle) was found amongst the other pots, presumably taken from a tomb as a token of antiquity. More vessels were gathered untidily in a corner to the left of the door, crushed by the collapsed first floor. Seven globular wine amphorae from Otranto were accompanied by another probably from Ephesus on the west coast of modern Turkey. Twenty-four complete and half complete vessels from the tower have now been reconstructed. This assemblage is distinct in character from anything known from northwest Greece, Albania or southeast Italy to date. Finds of mid 13th to mid 14th-century pottery date from when the tower was next refurbished as a defence under the Despots of Epirus.

Until now, it has been assumed the Byzantine world lost much of Epirus, including its strategically vital coastline, to the Slavs during the 7th century. Yet, the storeroom contents shows that the proprietor of the tower was someone with connections to Byzantium as well as to the tenaciously retained province of Byzantine Italy. This individual had locally made Slavic wares, yet was engaged in the commerce of one of the great luxuries of this materially impoverished age – glass. This can only mean that the tower was home for the commander of Butrint – the *archon* – who ruled over the few fishermen occupying the ruins of the once great city, at a time when the Balkans were in political limbo.



Reconstructed ceramic vessels from the Western Defences excavation.

The Well of Junia Rufina

A project was devised at the Well of Junia Rufina situated behind the Lion Gate to conclude an aborted excavation begun in autumn 2006 and to facilitate urgent conservation of cracked masonry and loose vaulting around the well. The ensuing work revealed a fascinating archaeological sequence with accompanying artefacts related to the Christianisation of the well and subsequent use of the area as a cemetery. Though conditions were difficult, an important dated sequence of inhumation burials was recovered in tandem with phasing and understanding the structural sequence.

The aggrandisement and dedication to the nymphs of the Well of Junia Rufina probably occurred during the 2nd century AD as a private act of civic munificence. A wall painting of two peacocks flanking a *kantharos* was added to the arched wall over the well, probably around the 5th or 6th centuries, symbolic of Christian themes and identity. It seems likely that a vaulted chapel was constructed around the same time with the well as its focus. More certainly, a medieval period wall (subsequently demolished by the Italian archaeological mission of the 1920s-30s) closed off the well from access through the Lion Gate, replacing the arrangement of the earlier chapel and situating the cult focus into the later Middle Ages inside a new chapel or church crypt.

The excavations were carried out above the well-head and along the southern side of the chapel to a depth sufficient for consolidation of the unstable masonry.

The earliest evidence encountered was part of a large building comprised of squared and faced stones. Within this structure a series of rubble layers produced coins dated to the late 4th-early 5th centuries that are typical examples of the smallest grade of late antique base-metal *nummus*. The latest of the rubble deposits had been levelled and was cut by three stone-lined graves of adults. One of these graves was capped with flat stones and contained an inhumation accompanied by a particularly striking pair of perfectly preserved composite silver earrings. The form of the earrings, the ceramic evidence associated with the burial and a coin attributed to Justin II (565-578) point to an interment date in the 6th century.



Late antique inhumation cemetery at the Well of Junia Rufina.



Silver earrings from a late antique grave in the Well of Junia Rufina excavations.

Use of the cemetery was discontinued, probably before the 7th century, but after a gap of some 400 years, the area was revived once more as a graveyard. Some time between the late 10th century and early 11th century a new cemetery was laid out. Most of the pottery finds (mainly amphorae) from this episode can be dated to the middle Byzantine period (10th-11th and 11th-12th centuries) and originate from Apulia. Seven unaccompanied graves were found: four of children or infants and three of adults. One of the infant graves was covered with reused tiles and is the earliest example of a *cappuccina* burial from Butrint. Another infant grave was marked with a headstone, only the second example of a burial with headstone at Butrint, the first being found at the Triconch Palace.

At a point during the 11th century the church began to

collapse, demonstrated by a thick deposit of building rubble. Two significant finds were recovered from this level. Firstly, at the bottom of the deposit, an anonymous *foliis* dated 1042-1050 from Constantinople. Secondly, and more remarkable, a so-called Benno-jeton, a small circular *fibula* brooch in the form of a coin. It bears the effigy of the Salian king and Holy Roman Emperor Henry III (1046-1056), ringed by the inscription: +O:ENNO PVCI:T (BENNO ME FECIT – Benno made me). The Butrint specimen is a new variety to be added to the five already known. Its greatest significance, however, lies in the geographic distribution of this particular type of brooch; until now this type has only been found in Denmark, Germany, Austria and Hungary. Its presence in Butrint shows the exceptional international contacts that the city's community maintained with the West.



Benno-jeton brooch from the Well of Junia Rufina excavations.

Use of the site following the destruction of the chapel is difficult to ascertain from the current excavation. Several pottery fragments dating from the 13th-14th centuries and the early Venetian period (15th-16th centuries) were collected, but these may equally reflect down-slope erosion of deposits on the Acropolis hillside directly above the site as much as continued activity here.

Digital Recording

Fortifications photogrammetry

Photogrammetry – a technique of capturing numerous images including known 3-D coordinates and subsequently rectifying each photograph to produce a single scaled image – has long been used in cultural heritage initiatives to make a record of historic remains. It is a technique that the Butrint Foundation has used over the past three years specifically to record mosaic pavements. Whilst also providing composite pictures of large decorative surfaces, the definition photogrammetry brings to the recording process has enabled the reproduction of millimetre-accurate drawings and significantly enhanced post-excavation study.

In 2007, photogrammetry was again used to document mosaic pavements in Butrint (described elsewhere in this report), but being equally suited to recording up-standing remains photogrammetry was also employed to record sections of the city's fortification walls. The photogrammetric records provide the closest possible representation of a structure's true form, and besides serving archaeological or architectural study, site assessment or conservation requirements, the records can be used to produce 3-D reconstruction models for academic analysis or public presentation.

This year's conservation programme of vegetation clearance and masonry consolidation on the city walls and selected monuments brought about the need to make modern archaeological records in advance of the masons' restorations. A programme of photogrammetry



Establishing a survey grid of 3-D reference points for photogrammetric recording of the Water Gate.

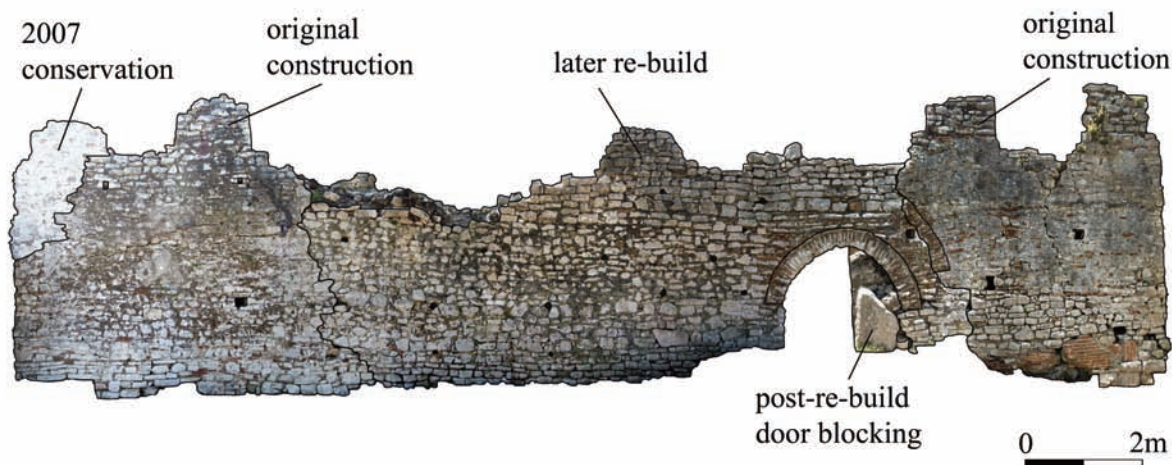


Surveying points for photogrammetry at the Water Gate.

was thus devised as a rapid way of creating an accurate and detailed record of the present condition of the monuments. Allied to this, digital elevations were drawn up from the photogrammetric records and the structural sequences re-analysed and interpreted as required. The primary focus of the fortifications photogrammetry

project was the medieval Water Gate, one of the principal entrances to the city on the east side of the peninsula, which was scheduled for extensive consolidation. Accordingly, prior to the conservation initiative, the structure was documented completely and photogrammetric records were produced for each elevation of the gate. The record was supported by new interpretations of the initial construction and the later repair events that occurred throughout the monument's existence.

To the south of the Water Gate, sections of the city wall circuit and two of the towers were also recorded. Finally, photogrammetry was used to support the recording process at the excavation sites where large, complicated or difficult to access areas of masonry were present. This included the area inside the Lion Gate/Well of Junia Rufina, the Roman Bridge and the Tripartite Building and statue podium at the Forum.



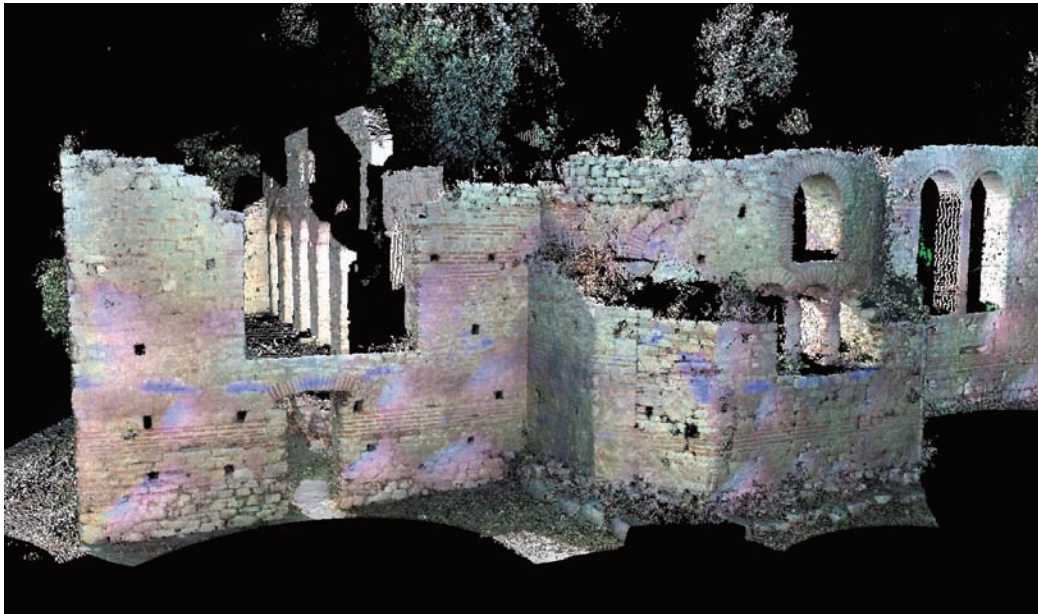
Photogrammetric image and interpretation of the exterior face of the Water Gate.

Laser scanning of monuments

A second technique of digitally recording historic remains and objects, and one that far exceeds even photogrammetry for speed and accuracy was piloted in Butrint during the excavation project. The capabilities of a high definition laser scanner, known as a 'cloud scanner' from the 'clouds' of data it captures at the rate of 1,800 three-dimensional points per second, were tested for use in archaeological applications through surveying a number of the principal monuments in the city. This equipment is primarily used in geological and complex construction environments where high precision is imperative, but it has recently become more widely recognised as an ideal tool for archaeological

research and heritage management, especially for the recording of standing buildings and statues.

The Great Basilica, already the subject of detailed architectural and historical appraisal and documented in depth by photogrammetry, provided the ideal set piece upon which to field test the apparatus. Traditional and progressive recording methods would provide a benchmark against which to measure the suitability of this cutting edge technique. Whilst the aisles of the Basilica – that is to say, its interrupted surfaces – would always be a challenge for the scanner requiring repeated repositioning of the equipment, both the interior and exterior of the monument were nevertheless surveyed within just two days, the scanner collecting 400 million points.



Laser scanner image of the Great Basilica.



Laser scanner in use surveying the Roman Bridge.

The scanner was subsequently used to rapidly capture images of the Theatre and the Roman Bridge to test it with different types of structure, materials and surface textures. Finally, the ability of the scanner to ‘recognise’ single tesserae in mosaics was trialled on a section of the Baptistery pavement with surprisingly positive re-



Laser scanner image of the Baptistery mosaic pavement.

sults. As far as is known, this is the first time laser scanning has been successfully employed to characterise individual tesserae.

Use of high definition laser scanners in archaeology and heritage management is in its infancy and its full potential remains to be explored. Whilst the brief trial project has already yielded 3-D records of a handful of monuments at Butrint, which can be used for research and management, possible future use of the technology lies with the integration of all buildings, structures, statues and even the trees within a single model. Thus, a true virtual Butrint could be produced to be explored and interrogated by archaeologists and heritage managers or be toured by prospective visitors to the archaeological park through an interactive website.

Butrint: an archaeo-seismic history

Introduction

The central Mediterranean is an area of intense neotectonic activity resulting in a large number of related geomorphic and seismic events. At Butrint there is clear evidence for several such episodes. A study was made in 2007 to assess the locally active tectonic mechanisms and to compare excavated archaeological surfaces in order to understand subsidence trends and concomitant changes in water levels over time.

Neotectonic history

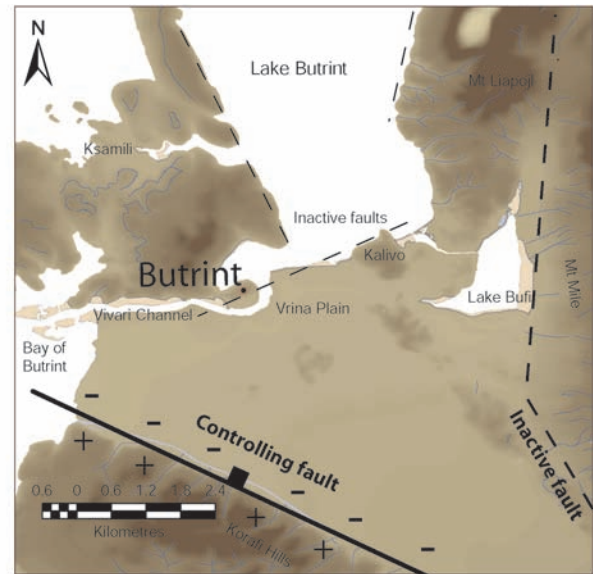
The valley to the south of Butrint is formed within a tectonically controlled basin, bounded on both sides by fault lines running along the edge of the Mount Mile range and along the northeast edge of the Korafi Hills. The high standing area forming the Korafi Hills is moving southwards, leading to the gradual downlift and subsidence of the unconsolidated valley sediments. Large, denuded scree fans along the base of the Mount Mile range suggest that the fault here is stable, possibly acting as a hinge point for the subsiding basin. The fault lines bounding Lake Butrint also appear to be largely inactive, the last activity being during the Quaternary (past 2 million years).

Subsidence and rising water levels

The tectonic regime at Butrint, resulting in the subsidence of valley sediments, has led to a continued rise in *relative* water levels. There is also some evidence for minor eustatic fluctuations in absolute sea levels

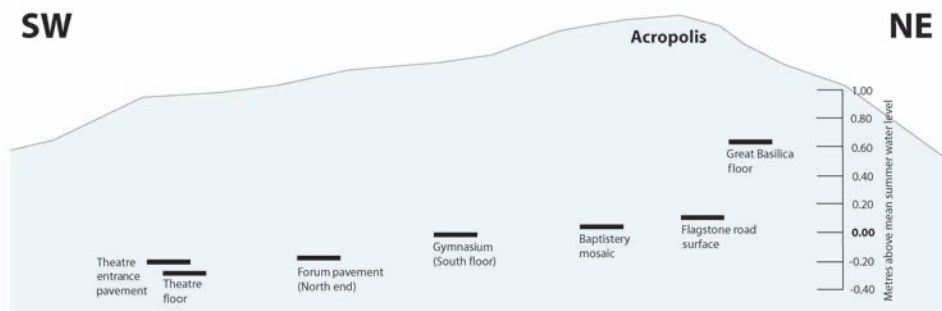
within the Mediterranean Sea, including a post-Classical eustatic rise that is documented in many parts of the Mediterranean.

Absolute heights were recorded in 2007 for each station in Butrint's water levelling network. This was established across the ancient city during the previous summer to allow intra-site monitoring and comparison



The controlling fault and smaller, inactive fault structures at Butrint.

of water level data. A comprehensive survey of archaeological levels was then undertaken along an approximate east-west transect to allow accurate evaluation of excavated surfaces across the site relative to water levels in the Vivari Channel during July 2007 (summer water levels are significantly lower than those experienced during the winter months).



Heights relative to Vivari Channel water level for key structures in Butrint.

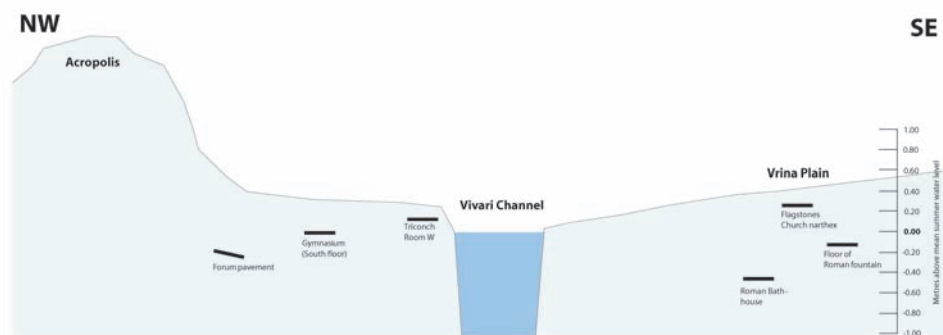
Overall levels are lower within the western portion of the city (Theatre and Forum), compared with broadly corresponding horizons to the east. The elevated levels further east may well have influenced post-Roman land use patterns, which appear concentrated within this area (i.e. Baptistery, Great Basilica, etc). This would be particularly likely if Butrint were dramatically affected by seismic episodes in the late 3rd century leading to subsidence and localised flooding (see below). Meanwhile, Roman levels in the main area of settlement on the Vrina Plain are significantly lower than corresponding levels on the other side of the channel. This reflects the subsiding trend outlined above, and confirms active movement during or subsequent to the Roman period.

Seismic activity

Active fault zones are the causal locations of most earthquakes. At Butrint, the local controlling fault forms the western valley bound-

ary to the south of the city, following the edge of the Korafi Hills. Stresses building along this fault are likely to reactivate smaller, interconnected faults within the locality. One such fault line appears to exist along the south-facing scarp of the Acropolis, running behind the Theatre and Forum and forming a characteristic spring line.

Surface ruptures recorded in the Theatre and at the Tower Gate have been taken as evidence for significant earthquake damage at Butrint. Furthermore, the uncovering of a new section of the Forum in 2007 revealed additional evidence of seismic activity in this area of the city. The southern portion of the Forum pavement had undergone considerable subsidence, dipping at an angle of c. 20 degrees. The pavement was also overlain by a deposit of alluvial silt 0.20 m deep. Taking this evidence together, it seems likely that



Heights relative to Vivari Channel water level for key structures in Butrint and on the Vrina Plain.

the Forum pavement subsided during an earthquake event as a result of liquefaction; a common phenomenon on silts and sands with high water content during earthquake shaking. The drop in ground level would have led to immediate inundation by water from the Vi-vari Channel.

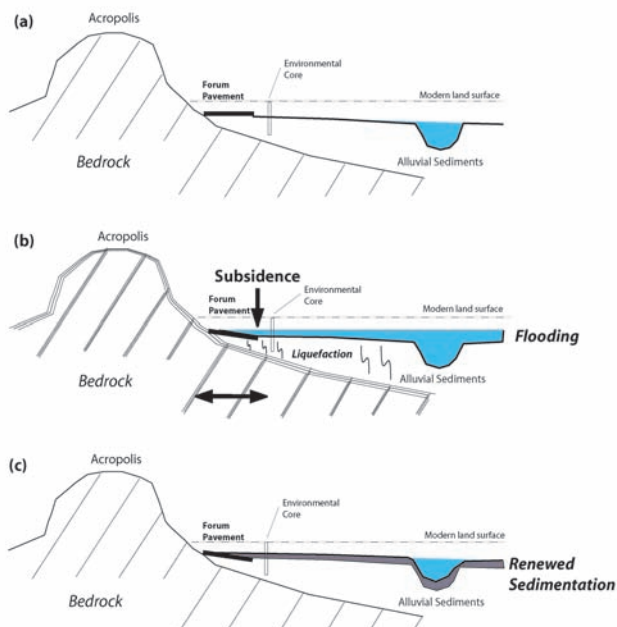


Diagram illustrating: (a) geomorphology relating to the Forum pavement; (b) subsidence and inundation of the pavement during earthquake shaking; (c) subsequent deposition.

A hand-augured core immediately outside the Forum complex revealed alluvial sedimentary sequences extending over 3.50 m below the current ground level, confirming that the southern end of the Forum was constructed over unconsolidated sediments. By contrast, the northern sections are likely to be constructed over

the dipping apron of limestone bedrock that forms the Acropolis. During the earthquake event, the pavement effectively hinged along the bedrock edge, the southern end experiencing sudden subsidence. A period of alluvial deposition then followed, the sedimentary loading of the channel possibly enhanced through the seismic event.

The precise timing of this event is not known, although a number of samples were taken from the overlying silt deposits for archaeo-magnetic dating which should yield useful chronological constraints. However, it seems likely that a period of intense regional activity during the so-called Early Byzantine Tectonic Paroxysm period, from the middle 4th century AD to the middle 6th century AD, led to the activation of local faults through regional movement. Butrint is considered as the macroseismic epicentre of a strong earthquake in AD 358 as well as the probable epicentre for a lesser known seismic event in AD 1153.

Future study to determine additional evidence of seismic events at Butrint could usefully focus on systematic analysis of existing excavation records of wall collapse and destruction deposits to assess the chronology, properties and impact of palaeo-seismic activity and to correlate these with historical records. This research should be supported by active analysis of water level data after one annual cycle of recording to allow a determination of flashiness, etc, and a greater understanding of the current hydrological regime at Butrint.

Post-excavation research

Finds analysis and illustration

A team of specialists was again assembled in Ksamili to conduct the recording, documentation, analysis and interpretation of the materials produced from the Butrint Foundation's excavations. Some 29 international experts and consultants brought their experience to this year's post-excavation and research programme. The specialist team and programme were focused on the Foundation's current publication schedule. Thus, objects and materials from the Triconch Palace and Diaporit excavations, the subjects of forthcoming monographs, were prioritised alongside small sites designated for rapid publication. Substantial progress was made in all areas of the finds analysis, photography and illustration, reinforcing the Foundation's commitment to archaeological publications and the integration between finds study and archaeological data.



Illustration and photography of an object from the Triconch Palace excavations.

Butrint Museum storage

Although great strides have been made in the past few years, much work remains to be carried out to ensure an archaeologically responsible system of recording, study, storage and preservation of materials excavated by the Butrint Foundation exists at the Butrint Museum.

Conservation and preservation of the finds are of great concern on a number of counts. Whilst the excavation project benefits from the expertise of some of the most highly accomplished object conservators in the UK, the rate at which they are able to work can not keep pace with the rate at which friable (mainly metal) finds are unearthed. Some finds may have to wait for a full year before they can be attended to. Those materials that are conserved often require annual re-treatment as the present storage areas do not provide a suitable atmosphere for their long-term curation. This is true of both objects in the Museum stores and objects on display in the Museum itself. As a minimum, all conserved materials require new plastic storage units (bags and boxes) in which to control micro-climate with silica gel. The next, and patently necessary step, is to create climatically controlled storage and display areas for metalwork, glass, small finds and reconstructed ceramic vessels to manage heat, humidity and insect damage and to prevent loss of materials to natural decay.

Physical storage of archived materials and finds still under study remains an ever-present issue at Butrint. The installation of purpose-designed and built shelving

units in some of the store rooms was necessary to create an acceptable means of organizing and storing materials by site and type and has improved access and ease of use immeasurably. In the storage areas where the shelving system was not installed, the problems of identification, access and, most significantly, pest control remain serious concerns. Under these conditions materials become stacked randomly and their storage containers disintegrate due to vermin infestation. Moreover, there is simply not enough space at present to properly store the many hundreds of crates of materials. A break in large-scale excavation, however, should now allow breathing space to fit out existing stores with shelving and identify new storage areas for the longer term.



Loomweights from the Triconch Palace excavations displayed and stored in the Butrint Museum.

Electronic Archive and Integrated Archaeological Database

Work on the Butrint Electronic Archive and Integrated Archaeological Database continued through the exca-

vation season based in the IT and archive office in Ksamili. Situating the archive team in close proximity to the excavation and finds teams has proved beneficial and convenient for everyone in terms of access to the archive and quality control of data submitted. Daily direct contact enabled the archive initiative to gain considerable momentum. A variety of backlog material was processed and uploaded, including digital and paper documents, illustrations and photographs. Above all post-excavation data from the Triconch Palace and Diaporit were prioritised to support the Butrint Foundation's publication schedule. Data from the ongoing field projects was entered on to the database as it was checked and completed.

The Butrint website

A Butrint website created by the Butrint Foundation is now accessible (www.butrint.org), though as yet only English language is available. Three virtual tours reflect the long history and diverse nature of Butrint: the site and its museum, the environs and the environment, and the later settlement of Butrint and its famous visitors. The tours comprise an elegant series of narratives, images and interactive reconstructions displayed over 125 text pages and 40 visual pages accompanied by nearly 500 images. The detail is supported by a glossary and a bibliography. Drawing on the work undertaken by the Butrint Foundation, the website provides information for schools, academics, tourists and travellers, and includes details on the National Park, the region and on how to reach the site.



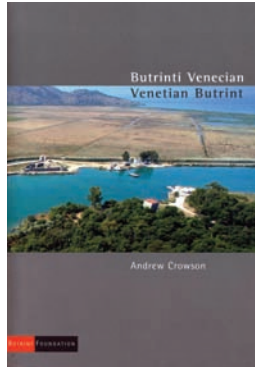
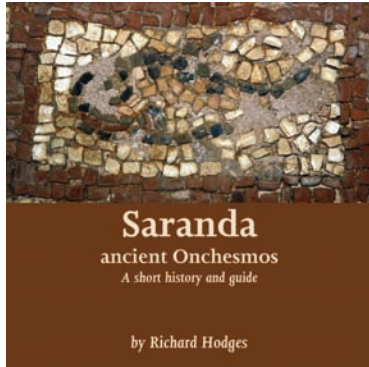
Screenshot from the Butrint website: the Lake Bufi walking trail.

Publication programme

Thus far in 2007, the Butrint Foundation team has published three books – including the monograph *Roman Butrint* edited by Inge Lyse Hansen and Richard Hodges – six contributions to academic journals, magazine articles in Albania, Italy and the UK and several pieces in the Albanian press. This blend of work fortifies the Foundation's strong and rigorous publication programme and aims to heighten awareness of Butrint and Albania to a broad audience including archaeological, historical, cultural heritage management and tourism sectors as well as keeping the site alive in the public eye.

The summer excavation season was an apposite moment to unveil two new books. *Saranda, Ancient Onchesmos*, a short history and guide to the town and monuments of the surrounding area by Richard Hodges, was published during early July and formally presented at a launch in the town introduced by the mayor of Saranda. Towards the end of July, *Venetian Butrint* by Andy Crowson was published with the aid of a grant from Venetian Heritage Inc. This book, in both Albanian and English language, describes the turbulent years from the late 14th century when Butrint acted as the right eye and protector of Venetian Corfu.

Both publications draw on archaeological detail to create attractive books for a broad audience and each represents a new venture. *Saranda, Ancient Onchesmos* is an appreciation of the regional context of Butrint and



Book covers: *Saranda, Ancient Onchesmos* and *Venetian Butrint*.

central to heritage management initiatives in the town. *Venetian Butrint* is the first in a new series of individual subject guides to the city published by the Butrint Foundation aiming to highlight the breadth of the city's history, its character and regional importance. A regional archaeological guide to southern Albania written by Oliver Gilkes and funded by the British Council is

presently at the proofing stage; a book on the Baptistry and its celebrated mosaic pavement by John Mitchell is scheduled to follow early in 2008 with a catalogue to the Butrint Museum planned for later in the year.

Amongst the journal publications, a "Preliminary Report on the Early Christian Basilica on the Vrina Plain, Albania" was published in the Italian journal *Archeologia Medievale* by Simon Greenslade, Richard Hodges, Sarah Leppard and John Mitchell. Two conference papers considering the regional position of later Roman Butrint were published in *Nicopolis B: Proceedings of the Second International Nicopolis Symposium (11-15 September 2002)*: "Nicopolis and Butrint: the Triconch Palace and a possible model for late-antique housing in Epirot cities", by Oliver Gilkes, Andrew Crowson, Karen Francis, Ylli Cerova and Kosta Lako; and "Nicopolis – the ideology of the late-antique city", by William Bowden.

Preparation of two further volumes of archaeological monographs – on the excavations of the Triconch Palace and Diaporit – received particular attention during the summer season. Academic monographs and detailed journal articles are the backbone of research on Butrint. Maintaining the pace and quality of publications is a fundamental aim for the next two years that will consolidate the work and objectives of the Butrint Foundation.



Launch of *Saranda, Ancient Onchesmos* in Saranda.

Conservation Projects

Introduction

Following the comprehensive and highly-resourced field conservation projects undertaken by the Butrint Foundation in 2006, steps were taken to cement this fundamental work with a series of new initiatives. Renewed efforts were therefore directed to the cleaning, conservation and presentation of portions of the defensive walls, selected monuments and mosaic pavements revealed in current and past excavations. Equally important in this ambitious programme was enhanced training of Albanian conservation specialists and local individuals to reinforce a resident skills base capable of mounting future projects independently. With this aim the Butrint Foundation recruited a number of international conservation consultants to work alongside Albanian specialists from the Butrint National Park and the Albanian Institute of Monuments.

During April 2007, a new condition survey of many of the monuments of Butrint was undertaken to update the Carden and Godfrey Architects' survey of 2001. This was conducted with an eye to selecting some of the most imperilled monuments for inclusion in a conservation and consolidation programme during the summer months. Proposals for vegetation management and for a conservation training initiative were also produced. The success of the subsequent summer programmes can, in no small part, be measured in the immediate need to revise the 2007 condition survey



Masonry conservation training initiative at the Water Gate.

report to include many areas of masonry that are now exposed and have been freshly assessed.

Work on the mosaic pavements was channelled in two directions. Firstly, in Butrint, the pavements of the Baptistery and the adjoining Trapezoidal Hall were further assessed, damage documented and their potential for future display considered. Secondly, on the Vrina Plain, a mosaic that had been first exposed late in 2006 was consolidated along with various small areas of other pavements. The large mosaic pavements in the Triconch Palace were also inspected, but will be the subject of a future conservation campaign.

Vegetation management

A local work team was established in cooperation with the Butrint National Park Officers for the Environment, Monuments and Archaeology during April to tackle some of the most pressing needs for vegetation clearance in parts of the lower city. Here, the team were tasked with a number of objectives. Masonry surfaces were to be cleared of all vegetation except for mature trees which would be assessed individually. All vegetation was to be removed within a 3 m strip surrounding each monument. Underbrush and saplings in woodland areas between monuments were to be thinned, with particular emphasis on *Laurus nobilis* (Bay laurel), which has an exponential growth habit and threatens woodland diversity and health. Finally, to improve presentation, gravelled areas within monuments were to be weeded and green carpet areas mowed regularly.



Vegetation clearance from walls and paths on the lower city fortifications.

The first phase of vegetation management proceeded rapidly and included clearing the late antique and medieval city defensive wall circuit from the Venetian Tower to the Lion Gate. In conjunction with this task, channel wall circuit paths were cut and selected areas of dense vegetation close to the walls around the Water Gate, Roman Bridge and Great Basilica were thinned out. The woodland area between the Gymnasium and the Baptistery taking in the Wall of Inscriptions and late Roman Nymphaeum was opened up through extensive thinning of immature tree growth. All conserved or gravelled areas throughout the lower city were hand weeded.

The results of the vegetation management programme were immediate and visibly dramatic. Visitor experience throughout the most frequented part of the city has been greatly enhanced through removing dominant plant growth from the monuments and opening new paths. Thinning the woodland understorey between monuments has increased the amount of light and inter-visibility between structures, improving the sense of a coherent city layout rather than one of isolated buildings in woodland clearances. These measures require continued attention to maintain the present condition and the programme needs to be expanded to open up fresh areas for inspection. The lakeside and Acropolis wall circuits are perhaps most in need of clearance. At present they are largely inaccessible for condition assessment, but are known to be in poor order and require urgent conservation to prevent further deterioration and significant collapse.

Monuments conservation

Introduction

An integral part of the 2007 monuments conservation programme was to provide additional training for Albanian masonry conservators. Three young specialists, one an alumnus of the Butrint Foundation archaeology training programme, were recruited to take part in the project for a period of two weeks each. A pool of proficient local workmen was assembled, allowing much-needed investment and additional skills building in the resident labour force. Six professionals from the UK volunteered for the project, including three conservators and three stonemasons. These staff worked in an integrated way with the Albanian specialists and local labourers, assuming some of the tuition duties and enabling several projects to be undertaken concurrently. The conservation projects themselves were drawn from the results of the condition survey on the basis that those monuments at greatest risk of collapse or in need of swift intervention were treated first.

The Water Gate

Situated close to the Great Basilica, the Water Gate was one of the most prominent entrances into Butrint from the 13th century onwards. Some 800 years after its initial construction, the Butrint Foundation's condition survey showed that the gate was in a dreadful state of repair: thick tree roots had penetrated the core of the stonework causing splits and disintegration whilst



Conservation team consolidating the interior face of the Water Gate.

a large portion of the west end of the structure was propped with sandbags in 2006 to stave off impending collapse. Consequently, the Water Gate was identified as the major project of the summer conservation programme.

The objective of the conservation was to stabilise the structure in its current condition and prevent further deterioration. No attempt was made at reconstruction where there was no surviving evidence of the structure's original form. New supporting buttresses to collapsing stonework were added where necessary, but in a manner that distinguishes the new works from the medieval masonry.

Tree roots were removed and unstable stonework was recorded, dismantled and sympathetically rebuilt.

Loose pointing mortar and vegetation within joints was removed and voids and joints re-pointed using lime mortar. Vegetation surrounding the Water Gate was substantially cleared to permit clear views of the structure from both the city and channel and to open a view of the channel through the arched entrance. The adjacent Roman Bridge was incorporated into the vegetation clearance work.

The late Roman Nymphaeum

Located to the rear of the Wall of Inscriptions and almost entirely engulfed by vegetation, a small monumental Roman fountain was hidden to visitors and had deteriorated alarmingly through years of concealed neglect. Dated to the 4th or 5th century, the Nymphaeum had been the subject of excavations by both the Albanian Institute of Archaeology and later the Butrint Foundation in 1994. It was converted to use as a small church or chapel, probably in the 13th century.



Cleared of vegetation: conservation of the late Roman Nymphaeum.

An extensive programme of vegetation clearance was first undertaken on both of the areas surrounding the Nymphaeum and the Wall of Inscriptions. This exposed numerous problems in the structure of the fountain that were previously obscured. As in most cases in Butrint, the conservation issues were the consequence of uncontrolled root growth within the fabric of the structure. Vegetation was removed from the masonry and a programme of consolidation and conservation completed to allow the monument to be presented to the public.

The Stoa Church fresco

Built against the vertical rock face of the acropolis and situated above the Hellenistic stoa and ancient city centre, remains of wall paintings are virtually all that survives of a small medieval church demolished by Luigi Ugolini during the course of his excavations on the Theatre. The paintings are of five or six over life-size figures of saints in rectangular panels, three of which remain legible. Open to the elements for nearly 80 years the painted surfaces – the last remaining major wall painting in Butrint – have decayed considerably and suffered extensive loss of plaster. This year's work was deemed extremely urgent and also provided valuable experience for Butrint National Park staff in wall painting conservation techniques.

Work focused on consolidating plaster edges, filling lacunae and pitting in the plaster surface and re-attachment of loose plaster fragments. Mortar used in consolidating the wall paintings was made from sieved



Conservation of the Stoa Church wall paintings.

local sand and lime putty. No attempt was made to clean or conserve the paint surface of the fresco, which is made in true fresco with an *a secco* (painting on to dry plaster) detailed secondary layer. Paint surface conservation is planned for later in 2007.

The Well of Junia Rufina

Dedicated to the nymphs in the Roman period, the Well of Junia Rufina water source was some centuries later given a Christian identity. Remedial work in this area (behind the Lion Gate) was necessitated by ill-advised tree removal during late 2006 that resulted in the collapse of a wall adjacent to the well and destabilised the soil bank above it. Potentially active cracks were filled and a wooden raking shore was built as a temporary revetment for the remaining wall.

The excavations above the well-head, and around the damaged wall, revealed that further masonry survived



Building a dry stone wall to replace collapsed ancient walls.

behind the collapsed section and that the remaining section was stable. Shoring was removed and gravel instated to the rear of the remaining wall to aid drainage. The collapsed section was replaced by a new dry stone wall to maintain the visual integrity of the site. Crumbling remains of Roman vaulting over the approach to the well were secured with fresh lime mortar.



Backfilling and landscaping the excavations behind the consolidated walls at the Well of Junia Rufina.

Soils in the excavations to the rear were backfilled in terraces to reduce pressure on the walls, stave off future collapse and make the area around the well safer for visitors and Butrint National Park workers.

The Vrina Plain Cremation Tomb

The remains of a masonry tomb on the Vrina Plain were first recorded by Ugolini in the late 1920s. Somehow, the remains survived agricultural clearance of the area in the 1960s. Since the 1990s the tomb has been used a sheep pen and shelter for shepherds with consequent and rapid deterioration. This prompted the Butrint Foundation to comprehensively record and photograph the tomb as part of a student-led heritage management exercise, and with full documentation in place, the tomb was included in the 2007 conservation works.



Consolidating plaster on the interior of the Vrina Plain Cremation Tomb.

The tomb consists of a vaulted chamber containing *loculi* for cinerary urns, with a solid tower-like superstructure above. A large section of masonry from the top of the vault – which at one time supported the superstructure – had weathered out and threatened the collapse of both upper and lower sections. First, all surviving internal plasterwork was recorded and consolidated. Secondly, two walls were built to support the arch and block the tomb entrance, one a reconstruction of the core of the original northern wall, and the other a cement block supporting-wall on the south side where evidence of original masonry was lost. Finally, breaches in the *loculi* were made good and the missing sections of masonry core on the exterior were reconstructed to support the superstructure.

Conclusion

All elements of the vegetation management and monuments conservation programme were highly productive and the projects identified from the condition survey were successfully completed. Introducing foreign expertise to provide specialist training to the Butrint National Park and other archaeological park staff was effective in skills building and in the setting up and provision of management systems that can be readily followed in the future. Additionally, investment in basic training and techniques has produced a capable corps of resident workmen to support conservation programmes at Butrint.

The clearing of vegetation has highlighted a set of im-



Examples of different grades of mortar used to instruct conservation trainees in mixing period replica mortars.

perative conservation issues; in particular, large sections of the fortification walls throughout the city are in urgent need of consolidation. The process of identifying the areas in greatest need of attention and necessary consolidation should be undertaken as a matter of some urgency. The Acropolis wall circuits are particularly overgrown with several sections badly damaged by tree growth and with others crumbling and collapsing. It is recommended that the next major conservation initiative at Butrint be the recording and assessment of these walls, followed by appropriate levels of consolidation.

Conservation work is continuing at Butrint through the autumn months funded by the Butrint Foundation in an important partnership with the Albanian government. Securing this joint investment is tremendously impor-

tant for the future of the Butrint National Park and is the first time this type of partnership has been formed in Albania. The work is addressing a wide range of issues including masonry consolidation, vegetation clearance and monument maintenance and presentation. For three weeks in October 2007, the Butrint Foundation and the Butrint National Park co-hosted an ICCROM conservation training course in the ancient city. The event was managed by young Albanians trained by the Butrint Foundation with course participants drawn from across the Balkans. The course included practical instruction in various conservation techniques coupled with a series of lectures from staff and specialists from the Butrint National Park, the Butrint Foundation and the Institute of Monuments.



Woodland thinning and access improvement at the Wall of Inscriptions.

Mosaics conservation

Introduction

In intramural Butrint, the Baptistery mosaic pavement took centre stage in a project to monitor the effectiveness of current protective coverings, record different factors and degrees of deterioration, to fill small lacunae and to produce a condition report. This process led to an action plan for the long-term conservation of one of the most exceptional and celebrated elements of the ancient city.

The mosaic floor of the adjacent Trapezoidal Hall was swiftly assessed to determine any change in its condition since its last inspection in 2006. The mosaics in the Triconch Palace were subjected to assessment, condition survey and recommendations (to be detailed in a future report). On the Vrina Plain, the fragmentary mosaics revealed during the course of excavations in 2006-07 were assessed and in places patched; special emphasis was given to a fully exposed mosaic on the east side of the Roman Townhouse.

The Baptistery mosaic

The protective sand and plastic mesh (separation barrier) covering the Baptistery mosaic was carefully removed in stages to allow the sand to dry and be safely brushed off. The mosaic surface was seen to be free from the telltale black stains caused by the growth of micro-organisms that blighted it in 2006, but a network

of fine roots had developed in the intervening period, penetrating the pavement and lacunae. A number of fresh lacunae and detached tesserae were secured with lime mortar. Overall, it is considered that the existing covering is effective only when monitoring and attendant vegetation controls are carried out.



Condition assessment of the Baptistery mosaic pavement.

A condition report recording past interventions and causes of deterioration was prepared, accompanied by maps showing the position of subsidence, cracks, voids, detachment, root intrusion and deterioration of tesserae. Numerous attempts have been made to address damage to the pavement since that first performed by the Italian archaeological mission of the 1920s and 30s. As much as 40% of the mosaic surface has now been affected, resulting in a loss of the original properties of the mosaic materials. Half of this figure is due to cosmetic restorations, the remaining half infilling lacunae. In general, many different interven-

tions of various quality and success can be discerned. Cement-based mortars composed of different proportions of raw materials are evident; whilst strong these are impermeable and inflexible. Repairs using lime mortar have in the main been more appropriate, but again this judgement is dependent on the quality of the materials.



Active cracks and new lacunae in the Baptistery mosaic pavement.

The main causes of deterioration are related to prevailing environmental conditions and past interventions including excavation, conservation, restoration, covering, uncovering and cleaning of the mosaic. High humidity within the mosaic results in salt crystallisation and consequent tesserae damage as the mosaic dries rapidly when opened. A cycle of expansion and shrinkage within the mosaic fabric, brought about by the influence of mutable saline water table levels, produces subsidence, cracking and detachment. The patches of rigid hard cement cause further stress upon the moving pavement and instigate further detachment.

A number of fundamental recommendations can be made to stabilise the Baptistery mosaic in its present situation. The mosaic should be monitored seasonally, maintained covered and presented only periodically to the public. Uncovering should be carried out slowly in order to prevent rapid drying and salt crystallization. Groundwater levels should be monitored in relation to the wet/dry state of the mosaic and decisions to open the mosaic taken accordingly. Channels and drains should be dug to combat the influence of rain.

The action plan arising from the 2007 work comprises a comprehensive strategy to slow down and ultimately minimize the agents of deterioration affecting the Baptistery pavement and to address the creeping loss of authenticity caused through successive aesthetic restorations. The first objective is to research and tackle the conservation and environmental issues with a step-by-step procedure of consolidation and treatment. The second objective would be achieved through detailed reference to archive photographs and reports, to achieve a more sympathetic and scientific re-laying with faithful replica and appropriate modern materials. Public awareness of the conservation campaigns would be aided by information panels and viewing bridges. Practical and theoretical training along with effective equipping of a corps of young Albanian mosaic conservators would underpin the action plan to carry out future monitoring and management of the mosaic.

The Trapezoidal Hall mosaic

Due to the delicate nature of the Trapezoidal Hall mosaic, only a test area measuring 2 m² in the northwest corner was uncovered and cleaned during 2007 to monitor its condition and make recommendations for future treatment.

Beneath the protective covering of clean sand and plastic mesh a network of roots (established since 2006) was observed. The high incidence of plant growth was a cause of considerable concern, but no new growth of micro-organisms was recorded. The recommendation here is for precision herbicide application and continued seasonal monitoring to effectively control vegetation re-growth.

The Vrina Plain mosaics

A fine mosaic in the Roman Townhouse on the Vrina Plain was uncovered of its protective sand and conserved. Located in the eastern range of the house, it probably belongs to a phase of building expansion in the 2nd century AD. Described in detail in the Butrint Foundation Interim Report 2006, the mosaic essentially comprises two outer borders, one pink, the other white, containing a central field of running black *peltae* on a white ground. It fills a room measuring c. 7 x 6 m. Areas of the borders had suffered most damage from contemporary wear and later intrusive events, whilst the central field was sporadically pock-marked with various post-holes and other destructive cuts resulting from



Shade netting covering a mosaic on the Vrina Plain to protect conservation mortar from rapid drying.

secondary use. The mosaic bedding was stable, with little subsidence or cracking observed, however, winter flooding had displaced many tesserae and further damaged friable wall plaster since 2006.

The mosaic room was first covered with shadow netting to protect fresh mortars from drying too quickly. A flexible intervention to consolidate the various lacunae was devised around a combination of materials and mortars. Although the depth of the pavement and its bedding was no more than c. 0.10 m, post-holes and other severe intrusions in the mosaic surface were progressively built up with layers of stone, sand and tiles to provide stability and good water permeability to the repairs. These were capped with layers of lime mortar whilst less deep intrusions were covered with mortar skims. The edges of the mosaic were consolidated and loose tesserae replaced. Remnants of wall plaster preserved in one corner of the room were consolidated with lime mortar.

Two other, fragmentary, mosaics were also conserved, though all that could be done in these instances was to replace detached tesserae and stabilise the exposed edges of the remnant pavements. The mosaics contained in the nave and bema of the basilica were assessed for deterioration since the conservation campaign of 2006. Recommendations were made for deeper deposits of protective sand and gravel to prevent vegetation incursion and to cap the surrounding walls to add stability.



Building up permeable layers of stones and tiles in lacunae in the Vrina Plain mosaic prior to capping with lime mortar.

Local workers trained during the 2006 conservation campaign at Vrina were recruited again to assemble and prepare raw materials. Fragmentary tiles discarded from the excavations were collected and reduced to small lumps and powder to include in the composition and mixing of various period-replica lime mortars. Three young Albanians participating in the student training school also assisted the specialists and were



Conserving lacunae in the Vrina Plain mosaic pavement under shade netting.

trained to administer first aid to mosaics and wall plaster. At the conclusion of the conservation work the mosaics were covered with plastic netting and sealed beneath deep deposits of sand.



Finishing the conservation of the Vrina Plain mosaic pavement.

Conclusion

The final year of large-scale excavation at Butrint delivered more remarkable results that will resonate around the region and underpin the Butrint project's significance for central Mediterranean archaeology. The thrust of this summer's work was to bring to a close the principal excavations and to advance the post-excavation, research and archive compilation that will enable the publication of monographs on the excavations of the Triconch Palace and the Diaporit villa and church. Alongside these initiatives another concerted effort was made to tackle the manifold issues of conservation in the ancient city and reclaim more monuments from undergrowth and decay.

Perhaps the greatest satisfaction is in, year on year, fostering the increasing involvement, training and responsibility of young Albanian archaeologists and conservators. The Butrint project remains at the forefront of providing practical opportunities for the up-coming generation and encouraging their career development. These initiatives are reinforced through other aspects of the Butrint Foundation's work in providing training for archaeological park management, tourism guides and community improvement projects.

Fieldwork on Bronze Age Butrint has concluded that, whilst Butrint saw modest occupation in the later part of this period, the main centre must have existed elsewhere. It remains feasible that a hierarchy of sites may be determined, with satellites related to a dominant



Butrint and the Vrina Plain from the Korafi Hills.

centre – possibly on the saddle-backed hill at Kalivo, but more likely further south at Çuka e Aitoit. Meanwhile, important steps have been made towards establishing a regional chronology for the elusive ceramics of later prehistory.

The appearance and nature of Roman Butrint has become clearer than ever before. Locating the southwest corner of the Forum pavement has established that it was created in the Augustan period following the layout of the Hellenistic agora and it therefore does not, as has long been thought, represent a reconfiguration of the urban space facing from the Acropolis towards the Vivari Channel. The Forum was affected by an earthquake in the 3rd or 4th century, and was inundated. An extraordinary sequence of deposits following this event chart the transformation of the city centre through to the Venetian period. The picture of Augustan Butrint was amplified by work associated with the aqueduct and Bridge both on the city and Vrina Plain sides of the Vivari Channel. The long-standing supposition that the aqueduct formed part of the colonial development of Butrint has now been confirmed archaeologically and, for the first time, we can reconstruct the splendid stone arches of the accompanying Bridge. The useful life of the aqueduct was over by the 4th century, but the Bridge continued to serve the city for perhaps another 600 years.

In parallel to the development of the city and its services, Roman colonial era growth has now been documented beneath the 2nd-century house on the Vrina

Plain. Various robust buildings and attendant yards were subsumed into a sprawling townhouse arranged around a peristyle and augmented with fine mosaic pavements and an octagonal waterfront tower. A store of intact 2nd-3rd-century amphorae bear witness to the economic links and prosperity enjoyed by the occupants at this time.



Section of the medieval fortifications fronting the Vivari Channel.

Study of human skeletons is adding much to our knowledge of burial practice and health profiles in the city through time, and two important new groups from superimposed cemeteries associated with a chapel at the Well of Junia Rufina have great potential for illuminating life and death in the 6th and 10th-11th centuries. Certain finds from the cemeteries – notably a pair of exquisite 6th-century silver filigree earrings and an 11th-century Benno-jeton coin brooch – hold tremendous promise for studies of Butrint's Byzantine cultural

and material contacts. Butrint may well have been governed from a tower in the Western Defences in the years leading up to the turn of the 9th century as the contents of a late 8th-century storeroom were sealed by a burned and collapsed upper floor, an event ascribed a radiocarbon date of around AD 800. A unique collection of glass fragments from a wooden crate and a row of exceptional amphorae inform us of commerce in luxury goods with the Eastern and Western Mediterranean world at a politically fragile time.

Post-excavation research and analysis of the ceramics, coins and other objects is continuing apace, rigorously targeted to match our publication schedule. The appearance so far this year of three new and varied books reflects our dedication in meeting publication obligations. The much-anticipated website is now on-line and together with maintenance of the electronic archives is realising the vision of a more publicly accessible resource.

Photogrammetric recording is now becoming a standard practice in Butrint and, allied to testing the application of high definition laser scanning, is proving an important auxiliary to the monument conservation programmes. The extent of invasive vegetation at Butrint is such that the clearance and conservation projects have effectively rediscovered 'lost' monuments and returned them to the cityscape, enhancing visitor experience. A recently begun unique partnership project with Albanian government funds points the way forward for conservation in the city.



Laser scanner image of the Theatre at Butrint.

It has been a compelling season, giving shape to a rather different history of the city. As we conclude our archaeological fieldwork at Butrint and strive to archive and publish our discoveries, it is apparent there is still much to conserve and display. Upwards of 80,000 people will visit Butrint this year, with increasing numbers arriving on Adriatic cruise ships. Provision must be made to meet the demands of these visitors and a downloadable guide for MP3 players is being prepared by the Butrint Foundation in Albanian and English language. This year's summer project was conducted against a background of comprehensive change to the structure and management of Albanian archaeology, and we are now actively collaborating with the government, working on a new cultural heritage law with reforms in all sectors of archaeology and heritage management. The time is now for the Albanians to pursue a new direction in their archaeology.

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