The Australian Archaeological Institute at Athens







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Letter from the Director

Dear Members and Friends,

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2012 has been a year of significant events and developments of the Institute.

The most important event of the year was the international conference, "Zagora in Context" organised by the Institute and the Archaeological Society, in Athens on May 20-22 which, in addition to making an important scholarly and scientific contribution to the archaeology of the Aegean, raised considerably our profile in Greece and among the other sixteen Foreign Schools. Considerable help was received from the Governor of NSW and Chancellor of the University of Sydney, H.E. Professor Marie Bashir, who launched the Conference and from the Australian Ambassador to Greece, H.E. Mrs Jenny P. Bloomfield. Especially appreciated was the presence of the Secretary General of the Athens Archaeological Society, Dr B. Petrakos, and of the Provost and Deputy Vice Chancellor of the University of Sydney, Professor Stephen Garton. The staff of the Institute worked hard to make the event a success and both the Deputy Director, Dr Stavros Paspalas, and the Research Officer, Ms Beatrice McLoughlin, contributed interesting papers. The papers read at the conference will be published in English as a separate volume of Mediterranean Archaeology. Most importantly Professor Margaret Miller gave an interesting paper on behalf of herself and Dr Lesley Beaumont, which served as an introduction to the revival of the Zagora excavations that followed in the months of October and November with a first field-work period at the site in a three year programme financed by an ARC grant reported on pp. 13–17 of this Bulletin.

The reader will go with considerable interest through Dr Paspalas' reports, especially his report on museum exhibitions in Athens and more particularly that of the "Antikythera Shipwreck" in the National Archaeological Museum.

In addition to the Zagora report, the Bulletin includes an interesting article on the University of Sydney excavations at Nea Paphos in Cyprus contributed by their Director Dr Craig Barker.

The most interesting article however in this issue is perhaps that contributed by Professor Hermann J. Kienast on the "Tower of the Winds" in Athens, a very significant and well preserved building which he identifies as a planetarium. Professor Kienast is one of the great authorities of the German Archaeological Institute excavations at Samos and the current authority on the "Tower of the Winds" which he studied recently and on which he is writing a book. Professor Kienast was the Visiting Professor of the Institute in 1997 and recently spent two months in Sydney as the Visiting Professorial Fellow of 2012.

With all best wishes

Wexander Combilighou

Alexander Cambitoglou

Editorial credits

A Message from the Australian Ambassador to Greece

Jenny Polyxeni Bloomfield

The Australian Embassy in Athens was proud to support the conference of the Australian Archaeological Institute at Athens and the Athens Archaeological Society on the findings at the archaeological site of Zagora, Andros, held in Athens on 20-22 May 2012.

The conference was officially opened by H.E. Professor Marie Bashir, Governor of New South Wales, Chancellor of the University of Sydney and President of the AAIA. Provost and Deputy Vice-Chancellor of the University of Sydney, Professor Stephen Garton, also attended and addressed participants. The conference was addressed by a number of international scholars and was well-attended by Greek, Australian and international experts, students and members of the public.

Bashir and Professor Alexander Cambitoglou at the opening of the "Zagora in Context" conference.

As a self-funded organisation which conducts and facilitates fieldwork and research projects by Australians in Greece, the AAIA continues

to be an important link between the two countries in the field of archaeology. The different aspects of work at Zagora underline Australia's commitment to Greek studies and the promotion of Greece's cultural contributions.

As the best preserved settlement of the period, Zagora has been fundamental for understanding life in the Aegean during the eighth century BC, the period to which many scholars date Homer and the beginning of the Greek city-state. AAIA Director, Professor Alexander Cambitoglou, then Professor at the University of Sydney, conducted excavations at Zagora from 1967-77 under the auspices of the Archaeological Society at Athens.

Professor Cambitoglou's personal contribution to the bilateral relationship in the field of archaeology has been immeasurable. His substantial achievements have been recognised by Australians and Greeks alike, including personally by the President of the Hellenic Republic, Karolos Papoulias, during a call at the Presidential Mansion in Athens in June 2012.

The AAIA's broader contribution to scholarly endeavour through the support of visits, research projects and study programs by Australians in Greece has been widely acknowledged. The Australian Embassy in Athens was pleased to receive recently 40 students of Classics and Ancient Greek History and Language from the Australian National University, and 25 students from the University of Queensland, on study programs facilitated by the AAIA. These visits enhanced young Australians' appreciation of Greece's historical and cultural contributions and showcased the work of Australians in Greece.

Australia and Greece have a close relationship based on shared values, history and enduring community links. Australians recognise, value and respect the significant contribution that Greece has made to world civilization and to all humanity. The Australian Government remains committed to further strengthening our bilateral engagement with Greece and to support Greece's efforts to secure a prosperous future, for the benefit of both our countries.

I would like to congratulate Professor Cambitoglou, Dr Stavros Paspalas, Dr Wayne Mullen and all AAIA colleagues for their important work in showcasing Greek civilization and further strengthening the existing close bonds between our two countries.



NEWS IN BRIEF

2012 Hostel Report by Anthoulla Vassiliades

In 2012 we had over 55 residents stay in the Athens hostel, including Kristen Mann who took up her position as the current AAIA Fellow (see report pp. 6-9). The majority of residents were of course from Australia, but a number were also students and academics associated with other foreign institutes and universities. Assoc. Professor Tom Hillard (Macquarie University), Dr Lea Beness (Macquarie University), Professor Margaret Miller (University of Sydney), Dr Lesley Beaumont (University of Sydney), Dr Matthew McCallum (formerly University of Sydney, now University of Oslo) were all residents for short periods at the Hostel in 2012. The hostel was also used as the base for various staff and associates of the AAIA during the very successful "Zagora in Context" Conference held in May this year. It has recently seen the comings and goings of various team members of the "Zagora Archaeological Project" on Andros.

In a wonderful gesture, AAIA Council Member Professor Diana Wood Conroy from the University of Wollongong has donated one of her artworks to the Institute. The watercolour and pencil illustration, entitled "Corinthian Capital no 24, Basilica Chryssopolitissa Paphos",



Artwork by Diana Wood Conroy.

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Deputy Director's Report from Athens

by Stavros A. Paspalas

As outlined in the report on the "Zagora in Context" conference, a great deal of the energies of the Athens office's staff during 2012, especially its first half, were dedicated to the organisation of that major event an event which highlighted Australia's role in current archaeological research in the Aegean. Nonetheless, the Athens office was also busy throughout the year conducting a wide range of tasks which ensure that visiting Australians, as well as those back in Australia who make "long distance" use of its services, were facilitated as efficiently as possible in their endeavours.

A particularly pleasurable undertaking during 2012 was directly linked to the "Zagora in Context" conference, for the Governor of New South Wales and the (then) Chancellor of the University of Sydney, H.E. Professor Marie Bashir, travelled to Athens to launch it. As part of her programme I had the opportunity of taking Her Excellency through the "Antikythera Wreck" exhibition at the National Archaeological Museum (see the Museums and Exhibitions Report), a memorable experience as her interest and engagement with the displays brought the exhibition all the more to life.

A significant amount of time was dedicated to facilitating the research projects of Australian academics and students, mainly through liaising with the relevant departments of the Greek Ministry of Culture and Tourism so as to ensure study permits, photographic material, and the like. This is one of the fundamental services the Institute offers, and it is always a pleasure to receive requests for such help from Australia—an indication that archaeological and wider Classical and Greek studies are prospering. Similarly, the field work season at Zagora (see the Zagora Archaeological Project 2012 Report) demanded a great deal of paperwork, a task achieved with the aid of the Director of the Institute, my co-directors of the Project, Professor Margaret Miller and Dr Lesley Beaumont of the University of Sydney, and the staff of the Sydney office as well.

At the very beginning of the year Professor Elizabeth Minchin and Dr Peter Londey from the Australian National University, Canberra, conducted a "Summer School" for ANU students. Here, once again, the Institute happily helped in procuring the relevant paperwork, permit guides, etc., and I fondly remember the tour I conducted for the group along the Philopappos-Pnyx ridge which provides such a good vantage point from which to appreciate the nature and character of modern central Athens, but also one that provides important insights into the organisation of the ancient city and its relationship with the port of Peiraieus which was such an important component in the Athenian "Golden Age".

July saw another two student groups arrive from Australia. The first was from the Queensland University of Technology led by Dr Lee Duffield (School of Media, Entertainment, Creative Arts and Journalism); the Institute was happy to provide what assistance it could to these students who very much had modern Athens as their focus. Newington School, Sydney, has proved a loyal friend of the Institute over the years, and I am pleased to report that Mr. Alexander Pyne once again brought a group of high school students with an interest in the ancient world to Athens, and I happily explained aspects of the ancient city to them *in situ*.

The healthy state of Australian research in the Classics was showcased in September when Professor Eric Csapo (University of Sydney) delivered the paper "The Dionysian Pompe and its Chorus in Archaic and Classical Athens" under the Institute's auspices. This was a wellattended event from which the audience benefited greatly. Finally, in February, I participated in a research workshop, to which I had been invited by the American School of Classical Studies, held at Corinth on the topic "Corinthian Colonies". I had been asked to speak on Corinth's only colony in the northern Aegean, Potidaia, which was located in the western sector of the Chalkidike peninsula, southeast of the later founded city of Thessalonike. This was a good opportunity both to learn about the most recent discoveries made at Corinth, an important ancient city far too often shadowed in modern minds by Athens and Sparta, as well as to demonstrate to our peers the expertise that Australian archaeologists who have worked at the excavations of Torone, under the directorship of Professor Alexander Cambitoglou, have attained in matters relating to the northern Aegean.

2012 proved to be a busy and productive year on a number of different fronts. Under the supervision of Anthoulla Vassiliades, our Administrative Officer in Athens, the Hostel's facilities continued to be available to those who travelled to Athens, and it was pleasing to see that we had a number of returning guests in 2012. As always the Athens office was able to execute its various tasks thanks to the various departments of the Ministry of Culture, the other foreign institutes in Athens, members of the Greek university community, along with the Australian Embassy, the Athens Friends of the Institute and the Sydney staff, as well as the encouragement of our Australia-based supporters. To all we are most grateful.

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Hostel common area, with new couch and artwork by Diana Wood Conroy.



New double bed in the third bedroom.

is a significant product of her time at the AAIA sponsored excavations at Nea Paphos, where she has collaborated for a number of years. The artwork now hangs in the common area of the Hostel.

The Hostel now has a brand new and very comfortable couch in the living area, which will replace the old couch setting that had been in the Hostel for many years. A small number of minor repairs and some maintenance work were also carried out during the year.

The public areas of the Hostel continue to provide the venue for the programme of seminars and lectures, as well as the meeting place for the Committee of the Athens Friends. The Hostel was also host to the University of Sydney Athens Summer School in January 2013.

Report from the 2012 AAIA Fellow

by Kristen Mann



The AAIA's research fellowship in Athens is unique nationally, and rare globally, in granting PhD students the chance to become members of the academic community in Athens. Last year I was fortunate to take up this opportunity as the 2012 Fellow, in order to work on my PhD thesis "Social Living: The archaeology of households and settlement organisation at Zagora on Andros." My time there was invaluable, and for this I am indebted to the AAIA.

During my Fellowship, I was able to undertake vital research and to become fully immersed in the vibrant Athenian academic community, including attendance at five conferences relevant to my research. At two of these I was able to present papers on my research at Zagora, both of which are to be published this year: one was at a conference for young scholars in Athens, and the other was a major international conference on Spatial Archaeology in Spain. These occasions were both intimidating and exciting, being my first presentations in an international setting. I was fortunate to gain excellent feedback and advice from some of the best academics in their field!

Museums and Exhibitions in Greece

by Stavros A. Paspalas

Undoubtedly the major exhibition that was inaugurated in Greece in 2012 was **"The Antikythera Shipwreck. The Ship, the Treasures, the Mechanism"** at the **National Archaeological Museum, Athens.** This was a huge undertaking that aimed to exhibit all the artefacts retrieved from the wreck found off the island of Antikythera, between Kythera and Crete, by two separate missions. The first can only be termed a "heroic" campaign, dependent on sponge-divers from the island of Syme in the opening years of the twentieth century; Jacques Cousteau returned in 1976 for a supplementary campaign.

The **Antikythera Shipwreck** exhibition is a real eye-opener, on a range of different levels. The visitor effortlessly learns about the construction of the boat that fatally hit a shoal—some time in the first quarter of the first century BC—and then is taken on a fascinating tour of what can be reconstructed of the crew's life on board ship: how they cooked,

what they ate, how they spent the leisure time, the small change they held in their money pouches at the time disaster hit. The exhibition then presents the boat's cargo—an unexpected array of marble and bronze statuary, luxury glassware from Egypt and the Levantine coast, up-market furniture, small bronze statuettes (miraculously still standing on their original bases), and lastly the famous "Antikythera Mechanism" itself.

The exhibition actually relates a myriad of stories that come together in the shipwreck: the growing Roman taste for objects that would advertise the elite's appreciation of Greek culture; the way the Mediterranean was traversed in the first century BC; the trade links between the various ports of the eastern Mediterranean and Italy; the examination of a number of important manufacturing centres in the eastern Roman empire; the circulation of various categories



A. Falco, J.-Y. Cousteau and L. Kolonas with bronze statuettes retrieved in 1976. After Kaltsas, Vlachogianni and Bouyia (eds.), The Antikythera Shipwreck, National Archaeological Museum, Athens, 2012, p. 33.



The Antikythera Mechinism, fragment A. After Kaltsas et al., p. 233.

of coinage and how such studies can throw light on the movement of

individuals; the very early days of underwater archaeology; and how the

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Selected objects from the Antikythera Shipwreck Exhibition (late 2nd and early 1st centuries BC). After Kaltsas et al. Clockwise from left: statue of a boy in Parian marble, cat. no 50; gold inlaid earrings with Eros pendants, cat. no. 119; striped mosaic glass bowl, cat. no. 114; lagynoi (jugs), cat. nos. 134–138.

marine environment can make us look anew at Greek sculptures. Special attention, of course, was placed upon the enigmatic "Mechanism." The history of research on this instrument was presented along with the theories which aim to explain what its actual purpose was (or, rather, purposes were). Thanks to recent examinations, which have employed a range of up-to-date techniques ,we have a far better idea as to what this device actually was, to such a degree that some have little hesitation in calling it the world's "first computer". The **Antikythera Shipwreck** exhibition is extraordinary, and everybody who will travel to Athens up to 28 April 2013 is highly encouraged to pay it a visit.

The Museum-visiting public of Athens, towards the very end of 2012, was fortunate to witness the opening of another major temporary exhibition, this time at the Museum of Cycladic Art, with the title of "Princesses' of the Mediterranean in the Dawn of History". The exhibition presents a stunning array of elite female burials from c. 1000 BC through to c. 500 BC, from various regions of Greece, Cyprus and Italy. However, this is not a simple display of treasures. The exhibition carefully examines what the burials of these elite women can tell us about the societies in which they lived, what their various roles may have been in maintaining family, clan and community structures, how they related to the male



Statue-stela from Vetulonia, Italy. Florence 8514, 8553.

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The conferences that I attended in Athens, one on Homer, and the other on tradition and innovation in the 7th century Aegean, were fantastic academic experiences, and I was very lucky that they occurred during my time in Greece. They opened my eyes not only to the current state of scholarship around the world, but just how engaging and stimulating such events can be.

However, it was the AAIA's Zagora conference in May that was critical, where the biggest names in Early Iron Age research gathered together to present, debate and discuss their work. This provided a fundamentally significant backdrop of 8th century research outside of Zagora, and was an opportunity to discover current research trends and material, much of which has yet to be fully published. I am fortunate indeed to have had this opportunity to meet and converse with leading scholars in Early Iron Age settlement archaeology.

My time in Greece also allowed me to travel to settlement sites contemporary with Zagora, giving substance and corporeality to the material I have been reading about for years. In particular, I was able to spend significant time in Crete and the Cyclades, both of which enhanced my understanding of Aegean settlements in general—both modern and ancient.

In October and November, after much anticipation, I was finally able to return to Zagora, only this time as a participant in the new University of Sydney's Zagora Archaeological Project (ZAP). I cannot describe how thrilling this was. The systematic survey of the site and surrounding landscape gave me a deep appreciation of the setting for the ancient settlement—as well as just how variable and powerful the weather can be! Most

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importantly, I was finally able to excavate one of the famous Zagora houses! It was great to get actual dirt experience of the processes and deposits the original excavators had been grappling with, and which I have been trying to understand from the publications and notebooks for years. While it was only test-excavations in 2012, being able to engage with the puzzles of stratigraphy and collapse processes in this preliminary setting has served to whet my appetite for what is to come. I keenly anticipate the next seasons, when the excavations continue!

I also participated in two short but crucial study seasons of the Zagora material at the Archaeological Museum of Andros. The first was in May, as part of the *Zagora* 3 project, and the second was in December as part of the ZAP study season. On both occasions I benefitted greatly from the deep knowledge of the material held by AAIA researchers Ms Beatrice McLoughlin and Dr Stavros Paspalas. Significantly, both sessions changed the trajectory of my research in some fundamental way.

Discovering that my original research plan was more complicated than I had anticipated, and that I needed to change my thesis half-way through my enrolment was daunting to say the least! However, I feel that my thesis is now stronger for my time directly handling the Zagora material, and that the subsequent new insights I gained over the course of both study seasons were invaluable.

My time in Greece allowed me to formally study and practice Modern Greek, a crucial skill for any researcher in Greek archaeology. In addition, I cannot overemphasise the value of being able to visit museums and events outside my research interests, and witness first-hand



Bow of a bronze, bone and amber composite fibula from Verucchio, Italy.

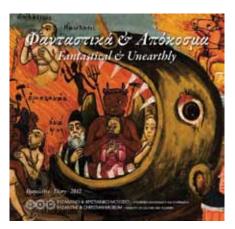
members of their community, and what role they may have played in religious affairs. Furthermore, the visitor is taken on a tour of elite female dress of the periods and places examined, and—possibly most memorably—is reminded of the role amber, which was for the most part procured from the distant Baltic, played in these societies.

Alpha Bank also presented an important exhibition to the public in 2012. This bank holds an exceptionally important numismatic collection that consists of over 10,000 ancient Greek coins. The temporary exhibition organised by Alpha Bank was entitled "Athenian Owls". It examined ancient Athenian coinage with special reference to the tetradrachm which became such an important medium of exchange, by no means confined to Attica alone, and by so doing presented important information about aspects of the ancient economy during the periods examined.



Silver decadrachm with Athena and an owl. c. 465 BC. Athens NM.

In early 2012 one could profitably visit the **Byzantine and Christian Museum** in Athens and, of course, visit its very important permanent display, but also greatly benefit from a viewing of the temporary exhibition **"Fantastical and Unearthly"**. Here the focus fell on a little-examined aspect of Byzantine art, that which involved the depiction of imaginary, hybrid creatures and beings. This was definitely an exhibition which broadened one's horizons.



Cover of the 2012 diary produced for the 'Fantastical and Unearthly' exhibition.

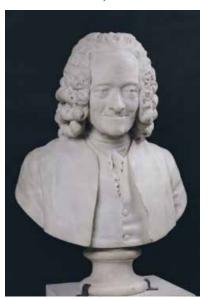
The Archaeological Museum of Thessalonike inaugurated in late 2011 the exhibition "Greeks and Phoenicians at the Mediterranean Crossroads". The exhibition focussed on a topic that is vital to our understanding of the eastern Mediterranean in a number of periods, but particularly the Early Iron Age, and fundamental to all those interested, among other matters, in the development of the alphabet. Through the

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display of carefully-chosen artefacts from various Greek and Lebanese sites the creators of this exhibition presented the history of contact between these two peoples firstly in the sphere of commercial exchange but also in that of cultural endeavours. The Archaeological Museum of Thessalonike held a number of other temporary exhibitions in 2012, including **"Archaeology Behind the Battlelines, Thessalonike**

1912-1922" which examined how archaeology was conducted, and by whom, in the region of this great city in the ten-year period starting with the First Balkan War. A second exhibition of importance was "From Plato to Voltaire and Koraïs: **Philosophers** Ancient Greek and the Enlightenment". The exhibition, which included a number of artefacts from the Louvre, brought to life the role that the ancient Greek philosophers played in the thought of their 17th- and 18thcentury successors and how the latter influenced the Greek Enlightenment which followed shortly thereafter.



Voltaire. Marble bust by Jean-Antoine Houdon. 1778. Louvre R.F.1426.

Finally, though, to return to Athens. As is well known the museum at the **Ancient Agora** is housed in the restored **Stoa of Attalos** (pictured below), and the public have for many years had access to its ground floor. As of 2012 the colonnade on the upper storey is also accessible. Here the visitor can not only admire a rich collection of ancient sculptures, but also gain an unsurpassed view over the Agora, up to the "Theseion" and across to the north slope of the Acropolis. This, too, is a great gain. And just as a reminder as to how much of an "archaeological" city modern Athens is, it may be noted that 2012 also saw the opening at the **Aigaleo Metro station** of a small permanent display of ancient finds made there during its construction. Most of the items were found in graves that lined the road towards Eleusis, but a number also come from a small road-side sanctuary. Greece, as has long been known, has much to offer its visitors interested in the past and wider cultural matters, and 2012 definitely saw this truism confirmed.



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the generosity of the Greek people and the unfolding of contemporary Greek history.

This would not have been possible without the AAIA's Research Fellowship.

I must sincerely thank Prof Cambitoglou and the AAIA for my time in Athens as the Research Fellow in 2012, and the subsequent progress I have been able to make on my doctoral research as well. I must also thank the AAIA staff, both in Athens and in Sydney, for their constant support and assistance throughout the last year. My doctoral research would not have been possible without my time in Athens and the ongoing support of the Institute staff, in particular Ms A. Vassiliades, Ms B. McLoughlin and Dr A. Paspalas.

Athens very much captured my heart and mind: nowhere else in the world can compare in terms of either the vibrancy of the academic community, or the dynamic energy and, yes, the chaos of the city itself. It was a fantastic setting within which to make new friends, meet young and wellestablished scholars of all backgrounds, expand my research, develop my thesis, and to feel my future as an archaeologist beginning to unfurl.



A Report on the "Zagora in Context" Conference

by Stavros A. Paspalas



Top row: Ms Anthoulla Vassiliades, Ms Beatrice McLoughlin, Ms Camilla Norman and Dr Wayne Mullen; Dr Vasileios Petrakos and Prof. Alexander Cambitoglou. Bottom row: Dr Stavros Paspalas; Prof. Stephen Garton; Prof. Margaret Miller and Dr Lesley Beaumont.

One of the two major landmarks on the 2012 Greece-based calendar of the Institute was the international conference held in Athens on 20-22 May (the other landmark being the Zagora Archaeological Project, see the report pp. 13–17). The conference, the complete title of which was "Zagora in Context: Settlements and Intercommunal Links in the Geometric Period (900-700 BC)" was organised as a collaborative project by the Institute and the Archaeological Society at Athens. It is indeed a pleasure to report that the conference was a great success. Its proceedings were held in the lecture theatre of the Athens Archaeological Society right in the centre of Athens, and all its sessions were very well attended. It must be said that numerous archaeological conferences are held every year in Athens, and the fact that the Zagora conference attracted such good numbers is a very sure barometer of its success. This success both underlines the importance of the excavations undertaken by Professor Alexander Cambitoglou in the late 1960s and early 1970s at Zagora, on the Cycladic island of Andros, and the promise of the new project.

The Institute was very fortunate that the Governor of New South Wales and the Chancellor of the University of Sydney, H.E. Professor Marie Bashir, agreed to travel to Athens to launch the conference. We were also very pleased that Professor Stephen Garton, the Provost and Pro-Vice-Chancellor of the University of Sydney, was able to attend this important

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occasion. Thanks too must be extended to the Australian Ambassador to Greece, H.E. Mrs Jenny P. Bloomfield, who, along with her staff, willingly and graciously extended every assistance with the organisation leading to the conference and during the event itself.

The earlier Australian excavations undertaken at Zagora established the site as fundamental to our understanding of the eighth century BC (the latter part of the Early Iron Age). This was a period of utmost importance in the process that led to the development of the later Greek city-state, and it also witnessed the broadening horizons of the Greek world (e.g. the foundation of the early Greek settlements on Sicily and in Italy) as well as the crystalization of the stories which we know as the Homeric epics. While a number of cemeteries and sanctuaries of the period had been excavated by the late 1960s, settlements of the period were relatively poorly known. And herein lies Zagora's importance, for it appears that its inhabitants left (for reasons unknown) around 700 BC and the town was never re-occupied, though a small temple was built there in the sixth century BC. Consequently, the site allows us an unprecedented view into the way one community organised itself during this formative period.

The conference was designed to focus on this point, to evaluate the role the findings of the earlier excavations have played in subsequent scholarship, and to point ways forward in formulating new research questions. The organisers were also very much aware that other contemporary (or nearly so) settlements, though none that can be examined as extensively as Zagora since they have been built over, have been discovered and excavated to some degree since the mid 1970s. How Zagora fits into this new, ever-developing picture was also a question that the conference aimed to answer.

Top row: Prof. Irene Lemos and Dr Jean Paul Crielaard; Prof Catherine Morgan; Dr Maria Pipili and Dr Michael Kerschner. Bottom row: Mrs Gail Comino and Mr Peter Comino; Mrs Lea Stracey, Prof. Alexander Cambitoglou and Mr Bruce Stracey.





Thirty researchers of the Greek Early Iron Age from Greece, Australia, the United Kingdom, the United States, Switzerland, the Netherlands, Canada, Germany, France, Norway and Italy contributed papers. As a result of this truly international coverage the conference's audience was exposed to the latest research on a range of important issues and themes.

Geographically the papers covered the Cyclades (where Zagora is located), the neighbouring island of Euboia and the important settlement of Oropos on the mainland opposite it, the northern Aegean, Crete, Ionia, Cyprus, as well as central Italy, Sicily and the Adriatic. Clearly, total coverage of such extensive areas is well beyond the capabilities of any one conference; nonetheless, the speakers presented new finds as well as new thoughts on a range of topics thus deepening our knowledge. An important component of the conference's purview was the examination of the settlement dynamics at Zagora and of contemporary sites. It is clear that there was no one way of living during the eighth century BC in the Aegean, as there was a range of settlement organisations, and settlements could differ, often as a result of the natural resources to which they had access, as regards their architecture. Even so, this was a time of everintensifying contacts between various regions, and the evidence for this in the archaeological record was brought to the fore in some of the papers delivered. Papers which dealt with funerary practices and the religious sphere allowed the conference to present a fuller picture of life as it would have been led during the eighth century in the Greek world. The papers delivered at the conference are now being prepared for publication in the Institute's research journal Mediterranean Archaeology.

A particularly enjoyable aspect of the conference was the excursion to Andros that followed. A good number of the speakers were able to make the trip to Zagora (pictured left) and the Archaeological Museum at Chora where the finds of the 1960s and 1970s excavations are displayed. It was a great boon that a number of long-term supporters from Australia who had travelled to Athens for the conference were also able to participate on this excursion.

A successful conference of this scale can only be the result of many people working together towards a common goal. Our thanks must, of course, go to the speakers themselves, most of whom travelled to Greece for this specific purpose, as they must to the archaeologists who kindly accepted the invitation to chair a session. We are also grateful to the Athens Friends of the Australian Archaeological Institute for all their help, and to the Faculty of Arts and Social Sciences of the University of Sydney as well as to the Governors and Members of the Institute who generously donated to the Conference. The Sydney and Athens staff of the Institute contributed enormously, as did that of the Archaeological Society at Athens, and we are indebted to the Society's General Secretary, Dr Vasileios Petrakos, for his support and assistance. Finally, gratitude must also be expressed to the Greek Ministry of Culture and its staff without whose help the Institute's activities, including the work at Zagora, would not be possible.

The "Return" to Zagora: the 2012 Field Season

by Margaret C. Miller, Lesley A. Beaumont and Stavros A. Paspalas



The view looking south from Zagora (photo: Bob Miller).

A difficult scramble over challenging terrain, blistering heat, blustery winds and driving rains; or the most interesting settlement site in the world of Aegean archaeology, enriched by its distinctive historical profile and blessed with spectacular vistas in all weather conditions? It is difficult to characterise fieldwork at the 10th–8th century BC town of Zagora on the Greek island of Andros, rich both in archaeology and in challenges to the ingenuity of the archaeologist.

Between 17 October and 27 November 2012 the Australian Research Council-funded **Zagora Archaeological Project** successfully commenced the Australian "return" to Zagora with its first field season. ZAP, as it is fondly known, is a collaborative venture between the AAIA, the Dept. of Archaeology at the University of Sydney, and the Archaeological Society at Athens. The Project also draws on the innovative expertise of our Sydney colleagues in Arts e-Research, and further works closely with the Powerhouse Museum in reaching out to school age students and the general public more broadly. (See blue side-bar by Irma Havlicek.)

How did Zagora work as a town? Were there discrete districts for specific activities or for different social classes? Was it in any way planned or did it just grow organically, following the terrain? Did it expand from an initial point or was it at first sparsely occupied and then filled in until homes were tightly packed along narrow streets? Was there an open space for a market and public gatherings? We know of one place of worship—the altar at the highest point—but were there others, as one might expect in a polytheistic society? What was the relationship



The Powerhouse Perspective

by Irma Havlicek

Why does archaeology matter? Or history? What can we learn about our lives and our civilization by better understanding how life was lived at Zagora c. 3000 years ago?

These are the questions we had in mind as we were developing the Zagora Archaeological Project website, in preparation for a return to archaeological work at Zagora in 2012.

The task for the Powerhouse Museum is to communicate the work and findings of Zagora to a wider audience, principally through the website. A key purpose of the website is educational; we have provided archaeological and historical context, but have kept the tone of the content friendly and accessible with the aim of reaching the widest audience.

We are particularly hoping to reach secondary school students, and are preparing free curriculum-linked lesson plans for teachers to use in their classrooms. For younger children are already available are two free, downloadable Zagora-themed activities—a design-matching dominoes game and a colouring-in and storytelling activity, created by Powerhouse online producer, Kate Lamerton.



Zagora-themed children's activities (photo: Kate Lamerton).

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There are two blog components of the website. The 'Around Andros blog' is a general magazine-style introduction to the lifestyle, food and culture of Andros and beyond. It is intended to attract people whose main reason for visiting may not be archaeological, but who may then explore and enjoy the archaeological content. It also gives us an opportunity to promote the magic of the Greek islands and to express our gratitude to the Greek people who have been so very warm and generous to us while we were working there.



The team lunching in Chora, Andros.

The 2012 Zagora Archaeological Project provided the opportunity to reveal through our blog how an archaeological project is undertaken in the early 21st century with all the geophysical and surveying technologies, geological expertise and computer capabilities available to us now. It has been gratifying that even some seasoned archaeologists have found the information we were able to provide there enlightening.

My Powerhouse colleague, curator and archaeologist, Dr Paul Donnelly, and I experienced the 2012 archaeological season at Zagora—and climbed, cleared land for geophysical analysis, dug and brushed soil, lugged away wheelbarrow loads of soil, roots and rocks, and documented, photographed and blogged about the project—along with the other Zagora team members there. of the town to its terrain? Were the terraced fields along the slopes or maritime access from the bays below most important to its economy? Why around 700 BC was this previously flourishing town abandoned? These are some of the questions that we seek to address over the current threeyear period of funded research.

It has been some forty years since



A terracotta horse statuette found on the surface in the southern area of the settlement may attest to cult activity away from the altar and temple area. ZAP 12-04, 2:3 (photo: Bob Miller).

fieldwork at Zagora, under the direction of AAIA Director and founder Alexander Cambitoglou, stopped. Those excavations had exposed a good number of Geometric period houses fitted with massive storage for agricultural produce, within a precocious fortification wall. After such a length of time, site assessment, cleaning and documentation were a necessary first step in 2012, a step that had the added benefit of helping the new team become closely familiar with Zagora. We quickly came to appreciate the utility of the 20x20 m site grid established in the 1960s, as well as the confusing modern agricultural field walls that arbitrarily divide the site into zones: the settlement is surprisingly large and, with no conspicuous landmarks, the vegetation is sufficiently intrusive that one can easily lose one's sense of precise location. The creation of a digital map of the site, under the expert eye of architect/ surveyor Richard Anderson, will be a valuable foundation for all our fieldwork. What also became apparent as our work progressed was how densely settled this large site had become by the Late Geometric period and, further, how plentiful is the evidence of slag for ancient metalworking activities at a number of locations across the settlement.

In 2012 a major goal was to ascertain whether information regarding the town plan and density of population could be gained through geophysical survey of sub-surface remains. The geophysicist Dr Apostolos Sarris, with a hardy team of specialists from the Institute of Mediterranean Studies in Rethymnon, Crete, undertook the survey. Though vegetation and rock piles made much of the site inaccessible to geophysical survey, important information is now being extracted from the results gained.



Delicate geophysical survey equipment is carried along the steep tracks to Zagora by mule (photo: Irma Havlicek).



Apostolos Sarris pushing the Ground Penetrating Radar cart (photo: Irma Havlicek).

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Activities in Greece and Cyprus

А few days surveying and scrambling down the slopes from the settlement to the bays to the north and the south yielded very little information about the ancient access to and use of what seemed to be local safe harbour. The investigation of the terrain by our geologist, Dr Ioannis Bassiakos of the Greek National Centre for Scientific Research "Demokritos," offered an explanation: the geology is highly unstable, with rock slips from the marble cap on the



Geological analysis reveals the dynamic nature of the landscape. What is now visible down the slopes and at the shoreline post-dates the geometric town (photo: Lesley Beaumont).

headland a frequent occurrence. A little experimental archaeology in the form of a trip to the site by fishing boat on the part of participant Steve Vasilakis, a Sydney University postgraduate student researching maritime landscapes, and local captain Thanassis Skoinas, verified that the shore is less hospitable now than it probably was 3000 years ago, owing to such rock falls.

A final goal this season was to prepare for a full excavation season in 2013 by setting a couple of trial trenches in the last two weeks. One was located on a probable line of town access, some thirty meters inside the ancient gate through the fortification wall; no road was uncovered, but steeply sloping bedrock led to the discovery of a thick occupation deposit, preserved intact for next season's excavation. The other trench was set on a slope in the south of the site within an area where we had noted a good deal of metalworking debris and also at which point an ancient schist house wall was visible. Clearance of the area revealed a room with a well-preserved bench complete with settings for the insertion of storage vessels. Excavation was deliberately halted at a wall fall sealing the house deposit to save it for exploration in 2013. Both trenches offer invaluable aid for planning our field strategy for next season.



Stavros Paspalas excavating, Trench 1 (photo: Bob Miller).

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Beatrice McLoughlin, topographical survey (photo: Bob Miller).

I have developed a huge admiration for archaeologists through my work on this project. Every archaeologist and archaeology student/volunteer I had the pleasure to work with was a keen team player, positive and adaptable, with the project objectives firmly in mind. I found their enthusiasm for learning and understanding impressive and their enormous capacity for strenuous physical and mental work awesome.

And may I say, they apply themselves to having fun with the same dedication as they apply to their work! It was certainly a rich experience, for which I am grateful.

We hope that through the website we will encourage an increased appreciation of the research coming out of Zagora and the value of archaeology, and to convey the principle that without understanding our past, we are ill-prepared to fully understand our present or wisely navigate our future.

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Paul Donnelly of the Powerhouse entering data into a tablet on site.



Andrew Wilson of Arts e-Research indicating a "point of interest" on the first day of team survey training.

The content described above, including the downloadable activities for children, is at:

www.powerhousemuseum.com/zagora

Feel free to comment on the blogs of the website or send us an email with your comments or suggestions:

zagora@phm.gov.au

Photos by Irma Havlicek © PHM, unless otherwise specified.



Ever ingenious, Bob Miller creates an elevation tripod for bird's eye views over house wall collapse and pithos bench in Trench 1 (photo: Hannah Morris).

Throughout our six weeks of fieldwork, the contribution of Arts e-Research at the University of Sydney—represented in the field by Andrew Wilson—was central to developing an innovative digital recording system, both for our field survey and excavation activities. Underpinned by the "Heurist" database devised by Arts e-Research and customised for the Zagora Archaeological Project, our team ventured daily into the field armed with Samsung and Lenovo tablets with which to record their data. This 21st century approach, which lies at the cutting edge of the digital humanities, will enable us to process and manipulate our data in such a way as to extract the maximum possible information about its spatial and chronological distribution and its significance for reconstructing life in an Early Iron Age settlement.

There are challenges on the horizon: the Australian Research Council has invested in the fieldwork for six-week seasons in 2013 and 2014, but an increasingly urgent consideration is the need to engage in major architectural conservation, an item not provided for by our ARC grant. The dwellings and the sixth-century BC temple excavated in the 1960s and 1970s have survived well the ravages of time, but are not indestructible. They require careful consolidation to make their form intelligible for the site visitor and protection to ensure their continuing undamaged existence for generations of visitors to come. The preparation of an architectural conservation plan by Dr Stephie Chlouveraki is now therefore underway.

Project co-directors, Meg Miller, Stavros Paspalas and Lesley Beaumont, invaluable *apotheke* manager and ceramics specialist, Beatrice McLoughlin, and stalwart team of volunteers^{*}, now await receipt of the 2013 field permit from the Greek archaeological authorities to excavate selected sectors of the site. This work will help answer major questions about the development of ancient Greece during the formative period of the Early Iron Age. Current understanding of evolving society and economy in the centuries before the predominance of Sparta and Athens in the Archaic and Classical periods is largely based on extrapolation and conjecture. Hard data about how people lived (whether in egalitarian or ranked settlements) and how the economy worked (whether agricultural and industrial activities were integrated within the domestic unit or were conducted on a larger scale and in more specialized contexts) will assuredly put any such discussion on a much firmer footing.

In closing, our thanks go to all those who helped facilitate our highly successful 2012 field season at Zagora. To Dr Vasileios Petrakos of the Athens Archaeological Society and to our colleagues in the 21st Ephorate of the Greek Archaeological Service, Panagiotis Hatzidakis, Anastasia Angelopoulou and Panagiotis Koulouris, our gratitude for your generous collaboration. To Professor Alexander Cambitoglou for his perseverance, support and encouragement. To Beatrice McLoughlin, our *apotheke* manager, archivist and so much more, what would we do

without you? To Paul Donnelly and Irma Havlicek of the Powerhouse Museum, and to our Greek colleagues-Apostolos Sarris and his team, Ioannis Bassiakos, Ioannis Lyritzis and Stefie Chlouverakiheartfelt thanks for all your invaluable input. To Andrew Wilson and Arts e-Research and to Richard Anderson, Bob Miller and Annie Hooton, our gifted surveyor-architect, photographer and draftswoman respectively, you have talent beyond compare! To the people of Batsi on Andros, particularly to our friends at the Café Kantouni and the Cava d'Oro and to Angeliki Marinaki and Thanassis Skoinas, your kind welcome and hospitality was more than we could have hoped for. To Wayne Mullen and the AAIA staff for their all-important behindthe-scenes support, the Project could not operate without you. To Virgin Australia our thanks for the generous provision of free and discounted airline tickets to team members. And last, but very far from least, to all our enthusiastic, dedicated, good-natured and utterly hardworking field volunteers,* we couldn't have done it without you!

* Eleven undergraduates and postgraduates in 2012; soon we will be sending out a call for volunteers for a larger team for September-October 2013.



Beatrice McLoughlin and Kristen Mann, the 2012 AAIA Fellow, studying finds.



Archaeology students break ground in Test Trench 2 (photo: Irma Havlicek).



Part of the Zagora 2012 team (photo: Hugh Thomas).

Nea Paphos Theatre Excavations 2011



Figure 1: Students recording excavations to the south of the theatre.



Figure 2: The nymphaeum after excavation.



Figure 3: The nymphaeum after excavation.

by Craig Barker

The University of Sydney completed its fourteenth season of archaeological investigations of the precinct of the Hellenistic-Roman theatre of Nea Paphos, between the October 1–28 2011. The work was conducted under the auspices of the Department of Antiquities of the Republic of Cyprus, and was directed by Dr Craig Barker, Dr Smadar Gabrieli and Emeritus Professor Richard Green for the University of Sydney. Financial support for the work came from the Australian Archaeological Institute at Athens for a third year, and in 2011 the Nicholson Museum also became a major logistical supporter of the excavations.

The history of the theatre and the project has been well documented in previous volumes of the AAIA *Bulletin*. In summary, the project has, since 1995, been investigating the architectural and archaeological remains of a theatre used between c. 300 BC and the late 4th century AD. In recent years the focus has shifted to examining the urban context of the theatre within the surrounding precinct.

2011 saw 20 Australian archaeologists, specialists and students conduct a study season designed to complete the recording and interpretation of finds from previous seasons of excavations. The final academic publication of the first decade of the project is expected in the very near future.

Despite concentrating on finds analysis, the mission was still able to make time to open two trenches. The first was located in the centre of the nymphaeum to the south of the theatre, which has been the main focus of excavation in recent seasons. The Paphos nymphaeum was positioned between the theatre and the northern most main road of the ancient city; located close to the ancient north-eastern city gates and near the main entrances of the theatre (figs. 1–3). The building was over 20 m long and 5 m wide and was probably constructed in the 1st century AD. A niche was built into its thick masonry walls for sculpture, of which some fragments of marble have been found. The floor of

Activities in Greece and Cyprus

the nymphaeum was covered with a simplydesigned mosaic with star patterns (fig. 4), while the walls were waterproofed with chamfered plaster. An outlet for water leading into the main drainage channel underneath the Roman road has now been discovered. Once the water supply system was blocked, as a result of a late 4th century AD earthquake that destroyed the theatre, the ruins of the nymphaeum became a convenient dumping and storage facility for architectural elements from nearby buildings, including the theatre, as they were being stripped for reuse in a new



Figure 4: Excavation of the mosaic in the nymphaeum.

basilica. Marble Corinthian capitals, column fragments, and architrave blocks were recovered from the debris dumped inside this building, while pottery finds dating from the 5th to 7th centuries AD seem to confirm this use of the building in the period of the stone-quarrying of the theatre.

A second small trench was located to the west of the nymphaeum, further along the ancient road. A series of bedrock cuts north of the road suggest that there was an attempt to landscape the area between the back of the theatre's stage building and the Roman road. A wall built alongside the road indicates a deliberate attempt by Roman civic planners to create a built urban environment in spaces of empty land between major public buildings. It will be investigated more thoroughly in coming seasons.

The theatre, the nymphaeum and the road are providing invaluable insight into the urban layout of the ancient capital city of the island. The role played by Australian archaeologists, and by the Australian Archaeological Institute at Athens, in this work was recognized by the House of Representatives of the Republic of Cyprus. House President, His Excellency Mr Yiannakis Omirou, presented the mission with a plaque honouring their contribution to the understanding of ancient Cyprus (fig. 5).

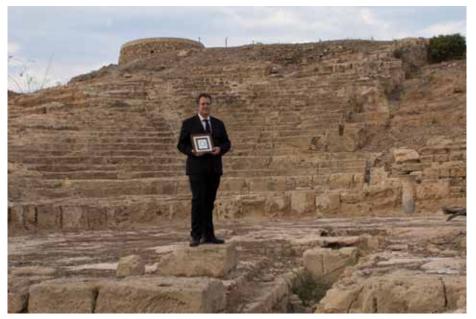


Figure 5: Dr Craig Barker with the plaque bestowed upon the Sydney University Mission to Nea Paphos by the House of Representatives of the Republic of Cyprus.

The Tower of the Winds in Athens*

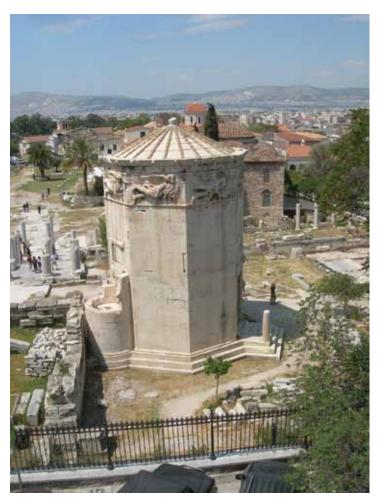


Figure 1: The tower seen from the southeast. (Photo H.J.K.)

*This is an abbreviated version of a seminar paper delivered at the AAIA Annual Meeting in Athens, April 2011. I am grateful to Professor Alexander Cambitoglou for the invitation to address the Friends and to those who attended, especially to the Athens Epicurean Society (and in particular, Dr Christos Yapijakis) from whom I learned much. I would like to take this opportunity to thank in particular for their warm hospitality in Athens Ms Anne Hooten (Agora), Dr Bjørn Lovén (Danish Institute), Dr Stavros Paspalas and Ms Anthoulla Vassiliades; and Dr Wayne Mullen for his solicitous attention to administrative details at the Australian end. I thank also Janice Gemmel for bringing the Macmillan item to my attention.

by Hermann J. Kienast

The Tower of the Winds, the Temple of Aiolos, the Horologium of Andronikos or just "Aerides" (the blowing winds), as the building is called by today's Athenians, is surely one of the most remarkable buildings of Greek architecture. The tower is situated on the northern slopes of the Acropolis, close to the Roman market, in the centre of what was medieval Athens. It constitutes a real eyecatcher in an idyllic part of Athens (fig. 1).

The Tower is mentioned twice in the ancient sources. Vitruvius describes it as an octagonal tower of marble and praises the architect Andronikos, because he was the first one to understand that there are eight main winds and not only four of them,¹ and Varro compares the building with a Pavilion somewhere in Latium (Italy), calling it a "Horologium". Both references are of great value. First of all they provide the name of the architect and a certain specification of the building, and secondly allow us to conclude that the Tower was

erected before Varro wrote his book.² According to the results of recent research, the tower has to be dated to around 100 BC.

The monument is one of, if not the best preserved ancient building in all of Greece and has attracted attention through all periods, but serious research on it was never carried out. In the 18th century the tower was brilliantly documented by the famous J. Stuart and N. Revett: the two British artists published a series of perfect drawings and also a rough description,³ so that the Tower seemed to offer hardly any challenges for further research.⁴

The ground plan of the Tower consists of a regular octagon, each side measuring about 3.25 m. It is the first time in the history of architecture that such a design was used for a whole building. This austere ground plan is enriched by three extensions. The numbers eight and three do not seem compatible and combining an octagon with three annexes is certainly a bold concept. The way in which these annexes—two of rectilinear form and a circular one—were attached to the main building

reveals the capability of the architect, but the main effect is to give the octagonal plan a clear orientation on a north-south axis (fig. 2).

Designing an octagonal building otherwise presents no problems: an elementary knowledge of geometry together with a compass and a ruler suffices. The fact that the main axis of the building is defined by the middle of the sides shows that its construction was based upon two squares turned 45°, one upon the other. Combining this figure with the ground plan, one observes several phenomena: the square along the inner wall automatically gives the central point for the round annex in the south and at the same time defines the extent of the surrounding stairs outside. Finally one realizes that the layout of the whole building is a substratum of three squares, one inscribed inside the other—a simple but most convincing scheme (fig. 3).

The elevation of the building is characterized by a three-stepped base on which a remarkably high, windowless octagonal tower stands. The walls have a half circle moulding at the base and an equally plain Lesbian moulding at the top; otherwise they are not articulated in any way, in spite of their height of almost 9m. The courses, however, have strikingly different heights, except for three narrow courses which serve a clear purpose: they function as binders to stabilize the walls and were used also to subdivide the elevation into three zones.

Although the elevation has a plain surface, it can clearly be seen that the upper zone is reserved for sundials, the lines of which are marked on all

¹ Vitruv. I.6,4.

² Varro, *De re rustica* III.5,9–17. Varro published his book in 37 BC.

³ J. Stuart and N. Revett, *The Antiquities* of Athens Vol. 1 (London 1762). Other than a few articles dealing with minor problems regarding the Tower, worth mentioning is J. v. Freeden, OIKIA KYRRHSTOY, Studien zum sogenannten Turm der Winde in Athen (Rom 1983), although this study presents only a little of the architecure of the Tower.

⁴ This article is a summary of a complete study of the building, which is in press with the German Archaeological Institute. I owe sincere thanks to the heads of the 1st Ephoria, who generously granted a permit for the investigation of the monument, namely P. Kalligas, I. Trianti, A. Choremi and A. Mantis.

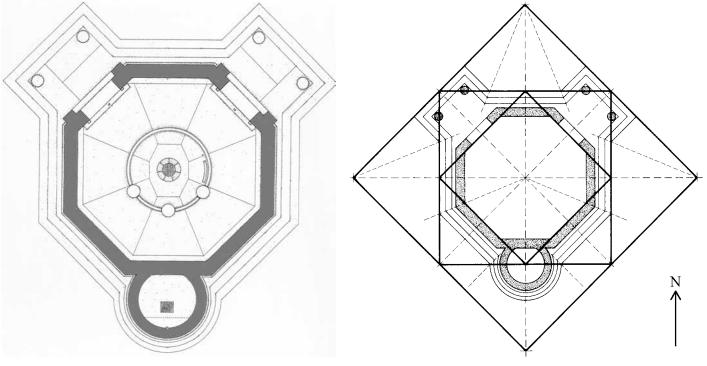


Figure 2: Ground plan. (Drawing H.J.K.)

Figure 3: The scheme with three inscribed squares. (Drawing H.J.K.)

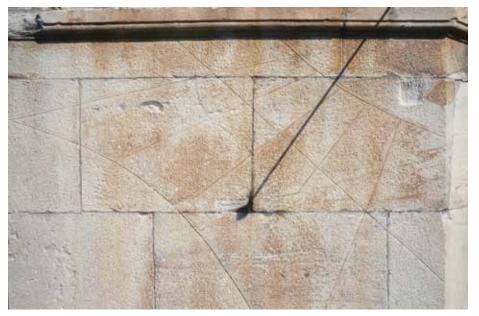


Figure 4: Lines of the southeast sundial. (Photo H.J.K.)



Figure 5: Close up of the North Wind, Boreas. (Photo H.J.K.)



Figure 6: Close up of the Northwest Wind, Skiron. (Photo H.J.K.)

eight sides. These sundials show a deep knowledge of astronomy; they are not only the largest known in antiquity but constitute a unique assemblage till our days. That their lay-out is impossible without specific knowledge is self-evident (fig. 4).⁵

Above this zone. above the moulding at the top of the wall, there follows a frieze with the reliefs of the eight wind gods from which the Tower derives its modern name. The gods are shown as personifications, represented as eight men of varying ages. All eight have wings and are shown flying uniformly to the right. Each wind wears characteristic clothes and is also provided with a characteristic attribute, most of them easily recognized. With these attributes the behaviour and peculiarity of every wind is indicated, so Notos, the South Wind, which brings rainy weather in Athens, is shown with a hydria, Boreas as the cold northern wind blows into a shell, whilst Kaikias brings snow from the northwest and Apeliotes, the

West Wind, fruits. A close look at the details gives an idea of the high quality of the reliefs (figs. 5, 6).⁶

⁵ The investigation and analysis of the sundials were carried out by Kh. Schaldach, who published a preliminary presentation of them in his book: *Die antiken Sonnenuhren Griechenlands* (Frankfurt 2006), pp. 60–83.

⁶ P. Karanastasi is responsible for the archaeological and art historical study of the reliefs.

The truly unique roofing consists of large tapering marble slabs abutting a round central block that functions as a kind of keystone. There are three slabs to each side; their vertical joints were closed with covertiles of marble, today replaced by tiles of clay. Thus on the exterior, the roof has the form of an eight-sided pyramid, certainly the ideal way of finishing an octagonal structure (fig. 1). Since this type of construction creates considerable outward pressure, it can work only when a ring armature keeps the slabs in place, a function apparently performed by

Feature Article

the sima-blocks. These blocks were put into the edge of the roof slabs in a way which helps to keep them in position. Two clamps of remarkable size on each joint are evidence that the architect was obviously aware of this static problem and show how he solved it.⁷

Today only a fragment of the capital crowning the roof remains, but it preserves important details. Its shape is octagonal and it clearly has a Corinthian calathus decorated with acanthus leafs (fig.7).⁸ Vitruvius reports that above, a weathervane in the shape of a Triton was attached, which showed with its pointer the direction from which the wind was blowing.

Among the three projecting units one must distinguish between the two *propyla* and the round annex. Each of the two poorly preserved *propyla* had a pediment roof bonded into the wall and resting on two columns. Three stumps of the four original columns are preserved—two of them still *in situ* according to J. Stuart. They have 20 flutes with an Ionic fillet and—amazingly—no bases; they stand directly on the stepped platform. Considerable fragments of the entablature of the northwest *propylon* are preserved, enough to show that it was designed in the Corinthian order. Taken

together with the tool marks on the door walls, they provide evidence for a reliable reconstruction: an *aediculum* with a canonical decoration and crowned with a pediment (fig. 8).

Like the *propyla*, the third annex at the south is badly damaged, preserved only up to the seventh course. The rest can be deduced only from tool marks on the south wall, which give clear evidence for its original height. Worth mentioning is a small projecting ledge under the cornice of the roof, which is an alien element for the architectural canon. In connection with incised lines on the cylindrical walls this ledge provides evidence for another sundial (the ninth and a rather complicated one) which was constructed at this annex. Except for two ventilation slits the annex is otherwise completely closed; no means of access was provided. The interior clearly shows that it housed a water tank, which gave pressure to a mechanism that was installed in the chamber of the tower (fig. 8).



Figure 7: The crowning capital as preserved. (Photo H.J.K.)



Figure 8: New Model of the Tower. (Concept H.J.K., realization P. Hönigschmid.)

⁷ The solution with vertical dowels, proposed by A. Stamelman, "Reflections on the roof of the Tower of the Winds at Athens", *AEphem* 1974, pp. 221–23, is to be revised.

⁸ The reconstruction of a Pergameniantype capital by J. Stuart and N. Revett needs to be corrected.



Figure 9: Miniature column of the upper zone of the interior. (Photo H.J.K.)

To complete the description of the outer appearance of the tower, there remains one very important detail. The entire tower is created in fine Pentelic marble. The surface of the wall was perfectly polished, but for the finishing the architect went a step further. All the mouldings were painted, as were the figures of the winds. In contrast, all the other parts of the surface were treated with a fine pointed chisel, giving the whole tower a special brilliance that emphasized the crystal-like form of the entire building.

In keeping with the unique appearance of the exterior, the interior of the Tower is also extraordinary. In contrast to the exterior, its walls are clearly divided into several zones. A simple cornice tops the lower one, and a cornice with consoles and dentils crowns the second one. The third zone finally ends in a plain band without a moulding. The peculiarity of this ledge is that instead of following the octagon it forms a perfect circle, thus creating eight small spandrel-like platforms which in turn support miniature Doric columns that carry an epistyle on which the 24 roof slabs rest (fig. 9). It is worth noting that these columns correspond to the exterior frieze. Inside we have a solution with columns and outside with the relief-decorated wall. In both cases the architectural order is covered with an epistyle, which is decorated homogeneously with two fasciae and a crowning moulding.

It is important to note that the interior epistyle was originally covered with colour, of which very scarce remains still exist, depicting a fine frieze with flowers and palmettes at the upper fasciae (fig. 10). According to the canon, one can hypothesize a meander and a pattern of eggs and darts above of it. But also the roof itself was obviously painted. Although only



Figure:10: Remains of the Anthemion on the inner epistyle. (Photo H.J.K.)

very small dots of the former colour have survived, a careful analysis gave clear evidence that the whole surface was once covered with the pigment Egyptian Blue.⁹ The single explanation for this dark blue colour is that the ceiling was meant to convey the night sky—and I have no doubt that the stars were also shown, probably in beaten gold.

A further observation gives insight regarding the difficulties of the construction of the roof. On the upper surface of the round ledge there are letters following the alphabet cut into the stone, obviously in order to make sure that the several blocks were positioned in the planned sequence. Such a counting system always indicates a complicated arrangement, needing careful preparation prior to the construction of the building. In other words, these letters are evidence for the preparation at ground level of the whole upper part of the building, before it was put in place on top of the wall.

The problems connected with the construction of the upper part of the tower obviously started with the shaping of the blocks for the relief frieze. All the figures of the winds are divided into two: a lower part with the body and an upper part with the head and the wings. The lower part is then divided into two blocks vertically, half of them exactly in the middle, and the other half into two different lengths. This was required in order to set the blocks into position. The blocks including the edges of the building were easily brought into place, but the blocks in between needed a special shape and a special handling.

As a result of these difficulties, the vertical joints framing the figures are not closed, as everybody would expect, but a narrow opening between the two blocks is left, a slit of 3 cm, which can clearly be seen.¹⁰ This detail is quite strange on an official building and looks makeshift, but it provided ventilation and also gave admittance to light: a mysterious glow which lit the small columns from behind and allowed for an appreciation of their plasticity, which otherwise could hardly have been understood by someone standing on the ground in the chamber of the tower.

Similar problems beset also the construction of the roof. The middle slab of each side is symmetrical in shape, but not the two side-blocks. The cutting would have been quite complicated and even more difficult to create would have been their bearing surface, a combination of straight lines outside and curved inside. But not only that, the treatment of the slabs clearly shows that their preparation on the ground was carried out with the slabs upside-down. Slight irregularities of their arrangement give insight to the process of how they were brought into position,

⁹ I would like to express my sincere thanks to the Kentron Lithos and namely to K. Kouzeli for carrying out this analysis.

¹⁰ In our days closed with mortar and therefore never previously noticed.



Figure 11: The several cuttings in the floor with two fragments of the parapet in position, viewed from the east. (Photo H.J.K.)

¹¹ The famous reconstruction by J. V. Noble and D. J. de Solla Price, "The Water Clock in the Tower of the Winds", *AJA* 72, 1968, pp. 345–55, not only could never have functioned but ignores all these conditions.

¹² In an inscription on a sundial, found at the sanctuary of Poseidon at Tinos, Andronikos is named as the "Second Eudoxos". IG XII 5, 2, Nr. 891.

¹³ I.e. the Antikythera Mechanism, dated around 100 BC, and the first depiction of an Armillary Sphere, on a mosaic in the House of Leda in Solunto of the same period. indicating the slab with which work began and the one with which the ceiling was closed. This final slab to be put into place is otherwise easily recognized because of the cutting at its edge, necessary for its positioning in the last gap.

Obviously the architectural structure of the tower is quite exceptional, but the central issue is certainly its function. Except for the round annex to the south and some cuttings in the floor, there is nothing to be observed

which can give a plain answer. The annex, as mentioned, housed a reservoir for water which obviously provided pressure for an installation in the main chamber. The cuttings on the ground clearly fall into three categories: a) curving grooves for the setting of a parapet, of which some fragments are preserved; b) straight channels to hide water pipes of lead; and c) three round-shaped beddings indicating columns or pedestals (fig. 11).

Up until now it was commonly accepted that all these remains were evidence for a water clock. The new research, in contrast, makes this interpretation quite implausible: as far as is known water clocks were never hidden inside a building. And the fact that the Tower is not only characterized by a special design, but also covered with a unique ceiling showing the sky and the stars clearly proves that the mechanism installed in this tower could by no means have been just a common clock. For a water clock, one needs only one pipe, a minor quantity of water and of course no pressure. But the piping in the floor is obviously divided into three parts and the water in all three was under high pressure. It is clear that the pipes were intended for a much more ambitious and challenging instrument.¹¹

Keeping in mind that the creator of the Tower, Andronikos from Kyrrhos, was famed and celebrated as one of the most ingenious astronomers of his period,¹² and being aware that during this period quite a number of important discoveries and inventions regarding the firmament and the rotation of the planets was achieved, and looking further at the several depictions of Planetaria we have,¹³ then it becomes clear that the only instrument fitting to the Tower of Andronikos is a so-called Armillary sphere—an open sphere built around one fixed vertical circle and fixed

horizontal circle surrounding further moving circles which demonstrate the planets and their movements. The whole mechanism functioned by means of water pressure, which activated several gears. The sphere was meant to be a model of the firmament showing the earth in the centre and the planets orbiting it.

To reconstruct the mechanism in every detail is probably not possible, but looking at the architectural frame, at the dimensions of the parapet and at all relevant components, we have to imagine a sphere of some three meters in diameter. The sphere was set up in the centre of the chamber at a height probably defined by the two projecting cornices. In such a position the sphere would have been at an ideal height to be viewed and admired by the visitors to the Tower.

There is clear evidence that the water pipes for the mechanism were originally placed underground, i.e. in a channel running underneath the Tower. In this first period the feeding pipe as well as the container were installed in the round annex without any means of access. The responsible architect was obviously fully convinced about the smooth functioning of his system, and indeed it seems that it lasted for a long time. But after a while, somewhere a pipe was blocked with sinter or a soldered seam started leaking and the system broke down. An underground repair was not feasible and therefore the water had to be conveyed above ground to the container in the round annex by means of an aqueduct. This aqueduct still exists-at least a remarkable portion of it-although it has been misunderstood and misinterpreted as the Agoranomion. The impressive arches gave access to a huge courtyard, but functioned at the same time as an aqueduct to feed the Tower with water.¹⁴ There is a clue that this structure was erected in the middle of the 1st century AD. It changed the area around the Tower for good. The southern facade of the Tower with its round annex was hidden behind the wall and the outstanding importance of this building was lost forever. So it is no accident that Pausanias did not consider the Tower worthy of mention.

Doubtless, the Tower of the Winds is a masterpiece of late Hellenistic architecture. Its crystal-like shape is unique and there is in fact nothing comparable in all of Greek architecture. The planetarium, the sundials and not least the reliefs of the winds make the Tower an artistic synthesis of the achievements of the sciences of its period. To all appearance it was supposed to be nothing else but a showpiece, i.e. a monument whose only purpose was to give insight into the mysteries of the Cosmos. The Tower is a rather ambitious and expensive piece of architecture. Considering the historical background, it is highly improbable that this building was

¹⁴ M. Hoff, "The so-called Agoranomion and the Imperial Cult in Julio-Claudian Athens", *AA* 1994, 93–117; M. Korres, in: *The Parthenon and its Impact in Modern Times* (Athens 1996), p. 143 ff., fig. 8. erected at state expense; a private donor is more likely, and I myself am deeply convinced that Andronikos himself was not only the creator of it but also the donor.

It remains for us to take a short glance at the site and the later history of the Tower. The Tower was erected east of the area later occupied by the Roman Market. It seems that originally it was the only official and representative building in this area. It looks as if its site was chosen because of the two roads passing by it, one of which was in fact a main axis in ancient Athens, but maybe also because it is on high ground, and probably on account of the availability of water.

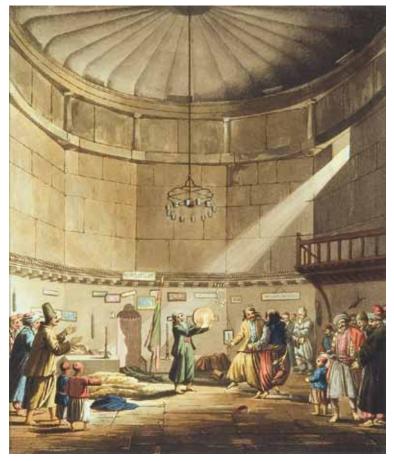


Figure 12: The chamber of the Tower, with dancing dervishes. (Dodwell 1803.)

After the first serious transformation of the area. with the erection of the aqueduct, the further history of the Tower is difficult to establish. One can read that during the early Christian period the building was used as a baptistery or as a church, but there is no evidence for it. A small, carelessly scratched cross on the inner east wall cannot prove such a function, and the tiny Maltese cross on the outside of the western doorway simply indicates the presence of these knights in Athens rather than anything more. We have, in other words, no information about what really happened to the Tower during the period after antiquity. The first reliable evidence for a new role dates from the Ottoman period, when a mosque was erected next to the Tower and its chamber was used as a Teké for the Turkish dervishes who had there their cultural dances—a function which is not only illustrated very vividly and graphically by E. Dodwell

(Fig. 12), but is also confirmed by the mihrab (the prayer-niche) cut into the southeast corner, i.e. in the assumed direction to Mecca.

During this period the Tower became embedded in a nice Turkish neighbourhood, impressively illustrated by J. Stuart and N. Revett (Fig. 13). A niche on its outer west wall shows that another building was erected against it, demonstrating that the Tower was at that time used as a solid structure, ideal for attaching new buildings to it. The niche was obviously part of the upper floor of a house. Cuttings for the roof of the niche and the timbered ceiling of the lower level of the house can also be detected (Fig. 14).



Figure 13: The Tower from the northwest as seen by J. Stuart (1751).

The Tower was thereafter rendered prominently in every town plan of Athens—in many cases literally named, in other cases clearly depicted. No doubt throughout all periods the Tower played a special role for visitors because of its excellent state of preservation but also because of its curious shape. And when Athens became the capital of modern Greece in the 1830's, and the plan for modern Athens was laid out, the Tower once more played an important role: the town planner took this building as an end-point for one of the new axes through the old medieval town. Besides the famous Athena Street, Aiolos Street is the second to cross the densely populated old town from north to south, and it heads exactly to our building. The Tower of the Winds gained by this a glimmer of its former importance and glory, attracting again the eyes of every visitor.



Figure14: The Tower seen from the west with traces of a medieval house. (Photo H.J.K.)

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The Visiting Professorship 2012*

Professor Catherine Morgan, OBE Director of the British School at Athens and Professor of Classical Archaeology at Kings College London



Left: An early photograph of Thessalonike in the Byzantine Research Fund Archive © BSA. Right: Professor Morgan at the Zagora conference, Athens.

The Institute's 2012 annual Visiting Professor was Professor Catherine Morgan, OBE. Professor Morgan is Director of the British School at Athens and Professor of Classical Archaeology at Kings College London. Her research focuses on the history and archaeology of Early Iron Age and Archaic Greece-notably the Corinthian Gulf and the Ionian Islands. She has a particular interest in Greek religion and ritual, especially the spatial development of early Greek sanctuaries, and has written widely on ethnicity, landscape studies, and pottery production, technology and use. As Director of the BSA, Professor Morgan codirects the School's excavations in the ancient theatre of Sparta.

Professor Morgan gave a series of lectures and seminars (listed below) on her tour for the AAIA, enthralling audiences across Australia. She impressed all with her extraordinary scholarship, warmth, and broad range of interests.

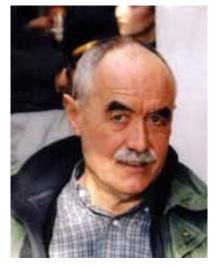
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*The 2012 Visiting Professorship was sponsored by various Governors of the AAIA and the Thyne Reid Foundation

Visiting Fellow 2012: Prof Hermann J. Kienast

by Wayne Mullen

Professor Hermann Kienast, the second "John Atherton Young and Alexander Cambitoglou Professorial Visiting Fellow", spent February and March as a guest of the AAIA in Sydney. During this time he occupied an office at the Centre of Classical and Near Eastern Studies of Australia (which also houses the premises of the Institute) where he worked on the publication of his research about the island of Samos to be published by the German Archaeological Institute.



Professor Kienast, former Deputy Director of the German Archaeological Institute in Athens and a trained architect, has devoted his career to the study of ancient Greek architecture. For twenty years (1984–2004) he was head of excavations at the sanctuary of Hera on the island of Samos. Professor Kienast is a Member of the Academy of Athens and Honorary Professor in the Faculty of Arts at the University of Athens.

During his time with the Institute he gave a number of public lectures in Sydney and around Australia, including two at the AAIA in Sydney, and others for the Friends or organisations such as the Classical Association of Victoria and the Estia Festival, in Melbourne, Hobart and Canberra.

His interesting lecture and seminar topics included "The Tower of the Winds at Athens: Architecture and Function", "The Neoclassical Architecture in Athens and its Prototypes following the War of Independence during the 1820s" (featuring such buildings as the Academy of Athens, pictured below), and "Early Buildings at the Sanctuary of Hera in Samos".

The next Professorial Visiting Fellow will be in 2014, when the Institute will be honoured to host an extended visit from Professor Irene Lemos, who is Professor of Classical Archaeology at Oxford and the Director of the Lefkandi-Xeropolis excavations in Euboea of the BSA.



NEWS IN BRIEF

Athens Summer School 2013 A Report

by Stephanie Ghassibe

I attended the third Intensive Classical Archaeology Summer School as a second year student of Education, Ancient History and Archaeology at the University of Sydney with hopes of extending my knowledge in my future teaching areas. What I experienced was a rich and meaningful immersion in the history and culture of Greece, in particular Athens, as the sites and monuments invoke a powerful imagery of the ancient city's might during the Classical period, even in modern times.

cannot emphasise 1 enough the advantages offered by studying a culture and its history so intimately firsthand, as we saw the past come to life during interactive on-site lectures under the expert guidance of Dr. Beaumont and Dr. Paspalas. Our engaging site visits included locations characteristic of the Golden Age, namely the Acropolis, the Pnyx and the Agora, as well as areas of wider Greece including Sounion, Rhamnous, Marathon and Delphi. A highlight of the Summer School was our morning ascent to the Acropolis and its monuments, where we were fortunate enough to witness its beauty dusted with a light blanket of snow, a rarity in Athens at the time of year. Particularly aweinspiring was accessing the interior of the Parthenon and viewing the unrivalled vantage point it offers of the modern city, as well as examining the reconstruction work on its Pentelic marble columns at a close proximity. Outside of Athens, the slippery descent into the Cave of Pan at Vari was a particularly memorable experience as the entry into an ancient sacred space afforded us a rare insight into religious worship through inscriptions and intricate carvings.

cont' from previous page

The partnership between the AAIA and the University of Sydney is one that I am particularly grateful for, as the programme enriched our studies of Archaeology and Ancient History in a way that only practical experience can. Due to this partnership and the Summer School I now have firsthand site experience and photographs that I will use throughout my entire teaching career, as well as countless experiences to inspire future generations of students.



Participants of the 2013 Summer School at a function at the Ambassador's residence in Athens, hosted by H.E. Mrs Jenny P. Bloomfield.

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The journal Mediterranean Archaeology

As has become characteristic of Meditarch volumes, the 24th includes in its first part several important studies that cover a wide geographical and chronological, but also methodological range. Quite appropriately, the first—by Sophia Asouchidou and Pantelis Nigdelis-publishes for the first time a deed of sale from Torone and draws some important historical conclusions, as the text dates from after 348 BC, when the city fell to the Macedonians. Fabia Curti's typological and stylistic analysis of the so-called 'Ceramica listata', a pottery type produced in Canosa and its region between the middle of the 4th and the early 1st centuries BC, summarizes her important Genevan PhD thesis. It is followed by Catherine Ricochon's lavishly illustrated study of the Etruscan barrel-shaped ear pendant, no doubt the most astonishing type of ancient gold jewellery. To complete the tour around the Mediterranean, Jamel Hajji puts forth a new interpretation of an important Roman mosaic from Neapolis (today's Nabeul in Tunisia) with the unique representation of Chryses and Agamemnon. Hugh Lindsay's presentation of the now lost Tomb of the Arruntii in Rome, based on 18th-century drawings and epigraphical evidence, fittingly closes the first part of the volume.

The second informs, as usual, about fieldwork pursued by Australian archaeological expeditions in the Mediterranean: in this issue, a substantial multi-authored paper presents the results obtained by Graeme Clarke's team at Jebel Khalid in Syria during the 2009 study season and the 2010 excavation campaign, while Stephen Bourke of the University of Sydney reports on the 2003–2005 campaigns carried out in the Bronze Age Temple Precinct at Pella in Jordan.

Meditarch 24 is now available and, thanks to the collaboration with Sydney University Press, can be purchased, like all other Meditarch books, on-line at: sydney.edu.au/ sup/archaeology.

BACK COVER

All Saints Grammar School, Sydney

All Saints Grammar School is a co-educational Day School currently in its twenty-third year of operation. The Junior School situated at the corner of Cecilia and Isabel Streets, Belmore, caters for students from Kindergarten to Year 6 with a student enrolment of 350. The Senior School on Forsyth Street, Belmore South, caters for Years 7 to 12 with a current enrolment of 290 students. Our fourteenth Year 12 cohort will be sitting for their Higher School Certificate this year.

All Saints Grammar is a vibrant school founded in 1990 by the Parish and Community of Belmore and Districts to provide academic excellence within a foundation of Orthodox Christian ethics.

The School encourages and nurtures success to be an intrinsic part of all students and promotes a caring and safe environment that allows the student to remain focused and on task. This is achieved with the assistance of a dedicated, experienced and friendly teaching staff whose prime goal is to establish each child's learning and personal potential.

The Senior School, situated in heritage grounds in Belmore South, has wonderful facilities catering to the needs of our students across all subject areas, including Science laboratories, Library, computer access for all students across the campus, Visual Arts workshops, a Photography room, Design and Technology rooms, a fully equipped Computer Laboratory, Food Technology, Materials Technology and Music classrooms. Along with a canteen and beautiful open spaces, these facilities provide a culture which stimulates and engenders learning. Additional construction occurred in 2012, creating a further six new classrooms, more shaded areas and further landscaping, all of which will greatly enhance the learning environment of our students.

At the Senior School, emphasis is placed on preparing our students for the adult life and to develop leaders as future citizens of our nation. This entails particular emphasis on an academically challenging curriculum to prepare students for tertiary level courses as well as the more vocational-type subjects that prepare students for their choice within the adult workforce.

Preparing our students for active participation in their community is a major focus of the School. As the School develops, these preliminary activities will also become more developed.

All Saints Grammar became an Intstitutional Member of the AAIA in 2012. The subjects of Modern Greek, Classical Greek and Ancient History are all offered in their curriculum.

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FRONT COVER

Apulian Red-Figure Fish-Plate

c. 330–320 BC Ht. 5 cm; diam: 19.7 cm Attributed to the Black and White Stripe Painter Trendall Collection, La Trobe University LTU 1998.03

The plate depicts a cuttlefish and two perch; the fish display the black and white stripes below their dorsal fins which are typical motifs used by this fish-plate painter and others in the Black and White Stripe Group.

Although fish-plates were probably first produced in Athens, most were made in South Italy in the 4th century BC. On South Italian fish-plates, in contrast to Athenian ones, the fish usually "swim" in an anti-clockwise direction, with their bellies facing the middle of the plate. Fish-plates from Apulia were made in at least two centres, Taranto and Canosa, from which this plate most likely comes.

Fish-plates were probably used to serve pieces of fish or small fish at banquets, as indicated by their painted decoration and the central depression, which might have held a sauce in which the pieces of fish could be dipped. The fish and seafood depicted are often types that are still eaten regularly in South Italy today.

The Trendall Collection comprises some fifty complete vases and fragments, mainly South Italian vases but also including some Attic, Etruscan and Roman pieces. The Collection has been accumulated through donation or purchase and includes a number of vases bequeathed to La Trobe University by the late Dale Trendall, the foremost expert on South Italian vase painting.

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